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The Convention

The Detroit meeting will be remembered as being distinctively an interurban gathering, and remarkable chiefly because of the interest manifested in everything pertaining to the construction, equipment and operation of interurban lines. This characteristic might be explained by the growing importance of this branch of electric railroading and the additional fact that the place of meeting was a center of interurban operations. The members had an excellent opportunity of examining the practical operation of roads of this description during their visit to Detroit, and it is not too much to expect, in view of the interest that has been awakened in this subject, that a large number of railroad men will be attracted to the association who have heretofore held aloof from it. It is quite probable, too, that the suggestion of Mr. Vreeland, regarding the expansion of the scope of the association's work, shall take form and become a reality much earlier than he anticipated. It is certain that the interests shown at this time in interurban work far exceeds any that has been manifested heretofore in this important field.

In point of attendance and character the convention was large and representative and in every way thoroughly satisfactory. The exhibits were in keeping with the importance of the occasion. The only criticism or objection heard was due to the lack of sufficient facilities for showing the apparatus to the fullest possible advantage. This was not a fault of the management, but was due entirely to the fact that the demands for space were greater than could be accommodated in any hall in the city of Detroit. Under the circumstances it was generally admitted that the organization of the exhibition department was as satisfactory as could reasonably be expected. It seems that the organization hereafter will be confronted with a very serious problem in securing adequate accommodations for exhibitors who desire to bring their apparatus before the attention of members of the association. It certainly speaks well for the importance and representative character of the association, and is a practical recognition of the value of their meetings that there should be such competition among manufacturers of all classes of apparatus and fittings used in railway work to be represented on these occasions.

The meetings of the Accountants' Association, which were held at the same time as those of the Street Railway Association, commanded the undivided attention of this important element in street railway organization and management. It is gratifying to note that the interest in this association is unabated, and that the outlook for a continuation of the good work which it has undertaken is even more favorable than it was a year ago. The association has enlisted the support of the leading accountants of the street railway world, and the high standard of its work is universally recognized.

The meetings of both organizations were well attended, and much interest was shown in the papers presented. The report of Wednesday's proceedings of the American Street Railway Association is printed in this issue. The report of Friday's meetings, together with descriptions and illustrations of the exhibits, will appear in next week's issue.

Express and Package Delivery

The paper by Mr. Parker, which is presented elsewhere in this issue, was received with considerable interest at the convention, but the discussion was limited, as the experience of the interurban companies represented by Mr. Parker was not sufficient to justify him in presenting data that could be considered reliable upon the relative cost, receipts and investment in the operation of this service. There was a good deal of interest manifested in the methods employed in handling freight and express, as explained by the author, and the system of interchanging between roads entering the city from different directions. It was mentioned that the most important problem which confronted the Detroit management was the expense of handling freight prior to the consolidation of the electric lines and the establishment of a union



station. Before the present organization was effected there were three distinct companies engaged in this traffic, each maintaining a separate depot, employing an agent and staff and consequently involving a duplication of expenses in many branches. When the roads got together, however, it was soon determined to establish a union freight station, where all the freight could be handled. This arrangement possesses many advantages aside from the reduction in the expenses of clerical help and freight handlers. It eliminates the expense of cartage from one station to another and enables the companies to conduct their business along the same general lines as the steam roads. The experience at Toledo and other centers of interurban electric railroading is similar to that at Detroit, and the advantages of establishing union stations are now generally recognized. Another evidence of the extent to which this feature of electric railroading has been developed was manifested by the advancement that has been made in working out the details of operation and the adoption of forms for freight and express departments. Mr. Parker's paper contained a number of the forms which are used by the Detroit United Railway, and a great deal of interest was manifested in this feature of the subject by those who were engaged in the operation of similar lines.

\* \* \* \* \*

The tendency to impose restrictions and taxes upon every development of the electric railway has already been manifested in many places where the local street railway company has extended its lines into suburbs or established interurban service. This is accounted for by Mr. Parker on the theory that, to the lay mind, the express and parcel business of the electric system appears to be merely another profitable use of the franchise, involving no additional expense beyond suitable rolling stock and the necessary train crews. There are, however, many additional expenses incurred, and an entirely new organization is often required for the proper handling of the business. But this is understood and expected by the companies engaging in this work. They do not, however, expect that they are to be confronted at the outset by unjust taxation, although they are often seriously handicapped by such measures. In the case of Detroit, for instance, an ordinance was enacted which prohibits the use of trailers and levies a tax of \$1 per car per round trip, regardless of whether the car is empty or loaded. This, of course, is far from encouraging, and in many cases practically prohibits the proper development of this service, as many companies are not in position, and none are willing, to pay taxes on empty cars, even though they may feel that there is a splendid future for the enterprise. It should be appreciated by those who have the welfare of the city at heart that a service of this character can only be developed properly by providing for prompt and frequent collections and deliveries, and thus educating the people up to the point where they will depend upon them and feel safe in doing so. Of course the company will have to run empty cars for awhile, until sufficient patronage is secured, but in most cases it is willing to do this, and look to the future for recompense, but it should not be subjected to such conditions as the imposition of a tax like that at Detroit.

**To Relieve the Bridge Crush**

The latest plan for the relief of the present condition at the Manhattan terminal of the Brooklyn Bridge is described elsewhere in this issue. It is the result of careful study by an engineering commission appointed by Mayor Low to examine the several plans that have been submitted from time to time, and investigate the entire problem with the view of obtaining immediate relief as well as devising a plan for permanently increasing the transportation facilities. The commission first considered the plans prepared by Niels Poulson, which were described and illustrated in the STREET RAILWAY JOURNAL of Sept. 20, and went over the ground carefully with the engineers of the bridge department, but for several reasons, which are explained in detail in the report of the commission, it was found inadvisable to adopt Mr. Poul-

son's suggestions. This examination, however, led to the development of the arrangement of loops which it is now proposed to adopt as a substitute for the present terminal facilities. It is greatly to be regretted, though, that the commission finds it impossible under existing conditions to recommend a system which will at once greatly increase the carrying capacity of the bridge.

The committee does not advocate the adoption of this plan as a permanent measure of relief, but frankly admits that while the additional loops will afford the greatest relief possible under present conditions by reducing the congestion and decreasing the danger of accidents, the system will still retain, in a minor degree, at least, all of the defects of the present arrangement, and that its chief claim for consideration is the fact that it will afford better facilities for entering and leaving the cars.

There is one point, however, which the committee raises in this connection which must be faced sooner or later, namely, the desirability of obviating delays and annoyances now caused by the blockading of traffic during rush hours by reason of the large number of trucks and private vehicles that use the bridge. It is suggested that this vehicular traffic be restricted. The bridge is already overcrowded, and additional transportation facilities can only be afforded by removing a part of the present strain upon the structure.

The revised plan described in the committee's report has been approved by the Mayor and the Commissioner of Bridges, and it is announced that work on this improvement will be begun at once. It is hoped that before the first of the year the new plan will be in successful operation, and in the meantime the work of developing a permanent plan will be prosecuted vigorously.

**Alternating Railway Motors**

Mr. Lamme's institute paper on the electrical equipment of the Washington, Baltimore & Annapolis Interurban Railway, which was published in our last issue, marks a new phase of the struggle against the limitations imposed by direct-current distribution. The space at our disposal last week prevented us from doing more than publishing the paper itself. It will not, to use a frequent editorial phrase, "repay careful study," because a single cursory reading fully discloses all that the author at this juncture sees fit to make public, but the matter is interesting and may prove to be important. We have seen too many "new systems," carefully engineered and strongly backed, sink into merited oblivion, to get rashly enthusiastic over the present one before it is in commercial operation. Yet it deserves consideration by reason of its somewhat revolutionary boldness. The radical sometimes succeeds where the conservative is doomed to a dead level of failure, and every real advance in the art is radical until it is tried.

\* \* \* \* \*

The history of attempts to avoid the difficulties of long-distance distribution at 500 volts is not a long one, nor is it a story of brilliant achievements. When the electric railway had outgrown the normal and proper limits of its working voltage the trouble began. Chiefly by reason of the moderate output demanded on many of the longer lines, the obvious plan of separate generating stations has been tried less often than it deserves, and attention has been directed to alternating distributions. The present direct-current railway motor is so admirable a machine and possesses in virtue of the series parallel control so wonderful a degree of flexibility that there is little reason to expect anything better in the way of alternating-current motor. It was very natural then that electric railway engineers should turn to the rotary converter as the best way out of the difficulty. This immensely useful but somewhat overrated machine enables an alternating distribution to be used in connection with standard car equipments and the customary single low voltage trolley wire.

\* \* \* \* \*

Distribution with rotary converter sub-stations, however, involves so much of initial expense and operating cost that unless



power can be generated in the single primary station at a very low cost indeed, the total cost with rotary converters may be and often is greater than it would be were the line equipped with independent generating stations. Were this not so there would be little incentive to take up the difficult task of adapting alternating current motors to the severe requirements of railway service. An interesting flank movement on the difficulty was made by Leonard in this country and more recently by Huber abroad, involving the use of a single-phase rotary converter on the car, thereby carrying the alternating distribution one step nearer to the car axle. Of alternating current motors for the cars we have had a few of the polyphase variety, and recently Arnold's system of single-phase motor operation, which is to be tried on a road built expressly for this service. The weak points of the polyphase system for railway work are two: First, the need of two or more working conductors, and second, the difficulty of speed regulation. Of course a rheostat in the secondary of a polyphase motor enables speed regulation to be attained on just the same terms as in the case of early direct-current motors with rheostatic control, but these are out of the game for most purposes and are very seldom used for the class of work for which an alternating current distribution is desirable. Such polyphase motors are in fairly successful use on a few foreign roads, but the solution of the problem by this means is special, not general, and leaves much to be desired. The concatenated control, experimented upon by Steinmetz some years ago, and more recently put into service by Brown and by Ganz & Co., offers a somewhat more hopeful opportunity, but is likely to lead to a bad power factor. Ganz has been driven to a very low frequency by this limitation, and it yet remains to be shown that even by this means can the equivalent of a series parallel control be obtained. If the polyphase induction motor could have this facility of speed control, we do not believe that the use of a double-working conductor would remain a formidable obstacle.

\* \* \* \* \*

The new attempt formulated by Mr. Lamme involves, like the Ganz plan, the use of a very low frequency, but distributes single-phase current. This dodges the double trolley difficulty but loses somewhat in the efficiency of the transmission. It permits, however, a highly efficient voltage control on the cars and so dispenses with the need of series parallel connection to avoid serious losses at low speeds. But on the other hand, it necessitates the use of heavy motors with laminated fields and involves the serious and heretofore forbidding task of commutating in a synchronous apparatus a heavy alternating current. The series alternating motor with laminated fields is by no means a new machine, but one which has been unsuccessfully tried a good many times, even at low frequency. Mr. Lamme says, and this must count for considerable, that this formidable difficulty of commutation has been overcome, but vouchsafes no detailed information as to methods. If he proves to be correct a very great step forward has been taken quite irrespective of any question of railway motors. If it is possible to get sparkless commutation on a 100-hp motor, under the severe conditions of railway practice even at 16 ~, it should also by similar means be entirely feasible to operate series alternating motors of moderate size on alternating circuits of at least 25 ~ to 30 ~, and an entirely new solution of the general alternating-current distribution problem becomes at once available. There are inherent reasons for expecting great difficulty in effecting such commutation, and we must frankly say that appearances are greatly against it, but "the world do move," and improvements must logically be expected. Granting a successful solution of the commutating difficulty it still remains to be seen how the general system will compare in total economy with a well-organized rotary converter sub-station system and with that now under construction by Mr. Huber. There is some doubt in our minds as to whether the series alternating equipment at 16 ~ will not prove to be heavier

and more costly in the long run than a rotary and its direct-current motors at a more conservative frequency. But, as in the case of every new system, the only real test comes with service on a commercial scale for a considerable period. We sincerely hope that the present innovation will fulfil the expectations of its designers, for, as we have just pointed out, it involves great general usefulness quite apart from the electric railway side of the matter. It is certainly high time to infuse some new ideas into railway practice lest the foreigners get ahead of us in our own game, and we shall await with impatience further details of what promises to be a most important and interesting experiment.

**Pennsylvania Tunnel Franchise**

The action of Mayor Low in reopening the discussion of the Pennsylvania tunnel franchise and calling a public hearing on the proposed measure was a disappointment to those who are interested in securing this great measure of relief for New York's congested transportation facilities. The delay that will result will not, however, be the greatest evil growing out of this sudden change of front on the Mayor's part. The encouragement which this practical recognition of an irresponsible band of politicians gives to those who hold up public improvements will prove discouraging to corporations which are ready to undertake large enterprises of this kind that redound to the benefit of the entire community. If they are to be hampered, harassed and restricted by such conditions as it is sought to impose in the tunnel franchise, they will find it impossible to proceed with their plans, no matter how much they may desire to do so themselves. Such a condition must seriously affect the commercial prosperity and retard the growth of any community.

\* \* \* \* \*

In spite of the Mayor's action, the Rapid Transit Commission readopted at Thursday's meeting the proposed franchise in the form in which it was first granted, that is, without an eight-hour clause, a prevailing rate of wages clause, or an arbitration clause. The Mayor was present at the meeting which took this action, and he offered no objection, as he had been informed by the Pennsylvania Company that it would not accept the franchise if the obnoxious conditions were insisted upon. At the same meeting, a letter was presented from President Cassatt, of the Pennsylvania Company, in which he reiterated the statement that while the company was very anxious to proceed with the improvement, it would have to abandon the project entirely if the city adhered to the purpose of imposing the restrictions dictated by the labor unions. It was announced unofficially by the Mayor that the company was not unfriendly to the method of settling labor controversies after the manner adopted by the Rapid Transit Subway, but that it would not make any such condition a part of the franchise. It became evident, therefore, to the members of the commission and to the Mayor and Comptroller, who had advocated the amendments, that the city had reached a point where it would be necessary to determine whether the whole franchise should be thrown overboard or granted without the labor clauses, and, under the circumstances, it was unanimously decided to pass the franchise in its original form. Of course, this action is not binding upon the Board of Aldermen or upon the Mayor when he comes to exercise his power of veto, and the tendency which he has displayed to cater to the labor leaders since this controversy began, makes it uncertain what his final position may be. In any event, it is evident that the work on the tunnel will be greatly delayed because of the vacillating policy of the city administration, as the opponents of the measure have been encouraged by the weakness displayed by the Mayor and others, and will keep up their fight as long as possible. But the Rapid Transit Commission is to be commended for performing its duty fearlessly, and the Pennsylvania Company likewise for standing out for its rights under the law. It now devolves upon the Board of Aldermen to determine whether this great improvement is to be completed or sacrificed for political purposes.



### New Fireproof Rolling Stock for the Central London Underground Railway

Several references appeared in this paper about a year ago to the vibration which was noticed in the buildings along the streets in London under which the Central London Underground Railway runs, and which was attributed to the operation of the trains on that line. The matter was considered so serious that it was brought before Parliament, and the company was requested to take steps to reduce the disturbance. At that time the road was being operated by locomotives in which the motors were mounted directly on the axles, and it was thought that the vibration was undoubtedly due to the pounding effect on the rail joints of this uncushioned

eration mentioned above the company expects to make the run between the terminals at the Bank and Shepherd's Bush in 20 minutes, and to operate cars on a headway during the rush hours of 2¼ minutes.

Another important feature of the cars is the fact that the motor-men compartments and all parts in the vicinity of the motors and controlling apparatus are absolutely fireproof. This was considered very important for trains running in a subway 30 ft. or more underground, and it was the desirability of removing all possible danger of fire that was one reason for the original decision to use separate locomotives.

The fireproof motorman's compartment mentioned is bolted to the frame work of the car, and can easily be detached from the rest of the body when desirable. Through the courtesy of Mr. Par-

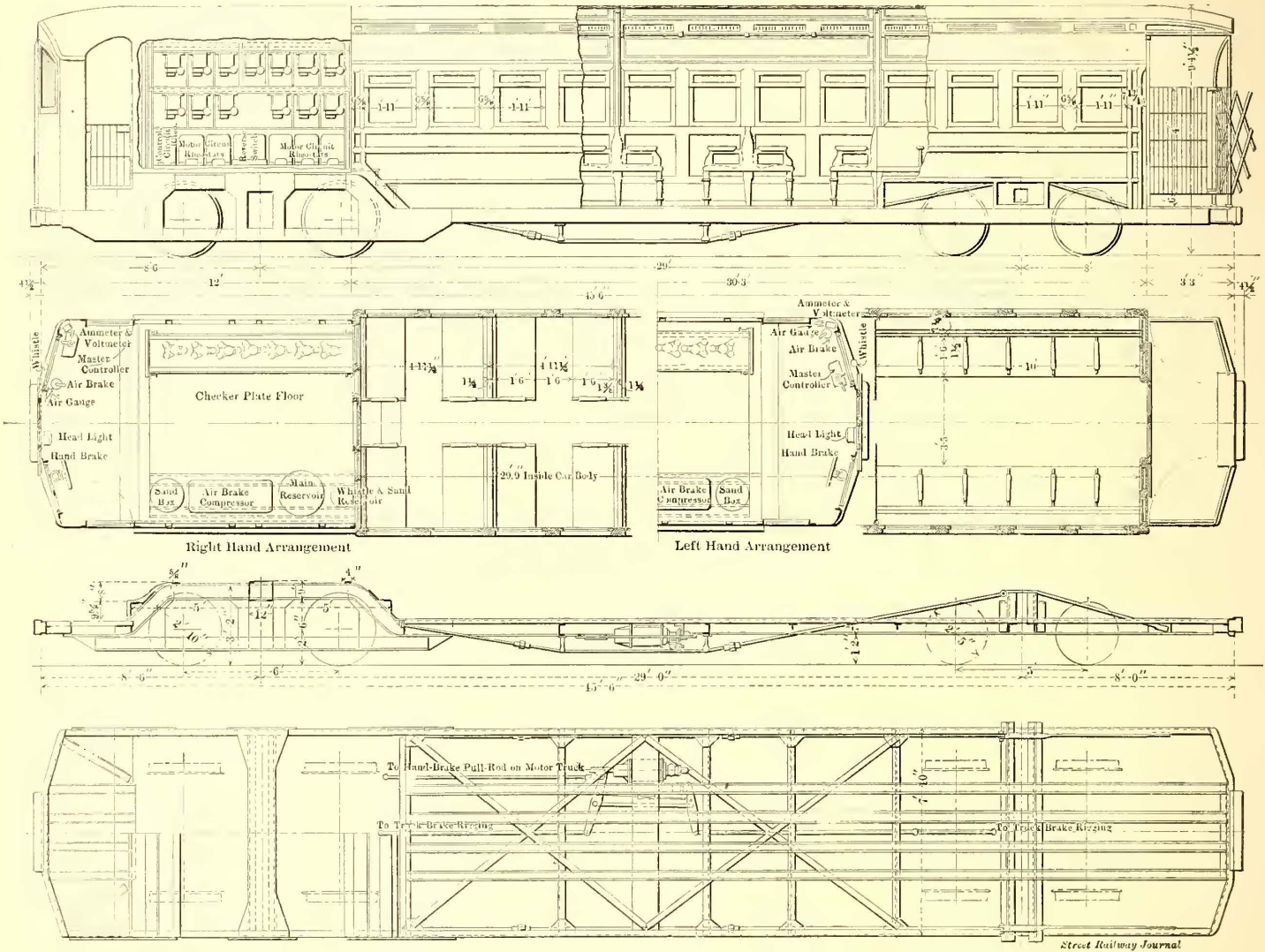


FIG 1.—LONGITUDINAL SECTION AND PLAN OF CAR AND OF FLOOR FRAMING

load. Owing to the restrictions imposed by the size of the tunnel it was at first thought that the best solution to the problem would be a geared locomotive, and one was built. At the same time a motor-car train was also put in experimental service. The result of the trial showed that while the geared locomotive reduced the trouble considerably the use of the motor train eliminated entirely all noticeable vibration, and the latter type of train equipment was consequently adopted.

Another reason for the adoption of the motor-car train idea was to increase the acceleration. The old locomotive train had a maximum acceleration of 1.4 ft. per second per second and an average acceleration of 0.7 ft. per second per second, while the motor-car train has a maximum of 2½ ft. per second per second and an average acceleration of 1 ft. per second per second.

The difficulties in finding room for the disposal of the motors and their equipment in the narrow space available in the tunnel were considerable, but were overcome by the engineer of the company, H. F. Parshall, by the design illustrated herewith. Sixty-four of these cars have been ordered from the Birmingham Railway, Carriage & Wagon Company, and Brown, Marshall & Company, of Birmingham, and two motor cars will be used per train, one at each end, with five trail cars, making a seven-car train. With the accel-

eration mentioned above the company expects to make the run between the terminals at the Bank and Shepherd's Bush in 20 minutes, and to operate cars on a headway during the rush hours of 2¼ minutes.

The motor car bodies are divided into three portions—motor cab, passenger compartment and rear platform—as shown in the engraving. Since the drawing was completed, however, the number of cross seats in the middle of the car have been reduced from ten on each side to six on each side, and the longitudinal seats have been extended in consequence.

The under frame is of rolled channel steel, and the four center sills and the head stocks are filled in with oak. The body bolsters at the motor end are of channel section, and at the trailer end of Z section. The frames are trussed by means of iron rods with turn-buckle. With the exception of the cab, the whole of the body framing is of teak, mortised and tenoned together and bound with strong wrought-iron knees. The side framing is trussed with diagonal braces and strap bolts, and the side of the body is tied by means of six ¾-in. tie-rods carried through the longitudinal framing and cant rail. The bottom of the side frame is secured to the under frame by twelve ½-in. and eight ½-in. bolts.

The passenger compartment is panelled inside on the ends and sides. The framing is of light-colored teak, and the panels are of yellow pine, veneered with white sycamore, with teak mouldings



around each panel. The roof is in three panels longitudinally, and covered with ¼-in. mill board, each panel having an ornamental lincrusta border and lincrusta moulding on the edges to match the present rolling stock. The strap rail is to be of teak. The floor boards of the passenger compartments and also of the platforms are of 1-in. red deal, laid transversely and protected by wearing slats of rock elm. The seats are to be of perforated bent wood.

The cab, which consists of the front platform and switch compartment, is a self-contained steel structure, and is bolted to the under frame and the car body, so that when desired it can be removed bodily without disturbing any of the apparatus contained in it. The framing is of angle steel. The front screen is of sheet steel, glazed in the upper part and provided with double sliding door, also glazed in the upper part, which is suspended by rollers on a steel rail. The sides of the cab are closed for a portion of their length by swing gates secured by snap locks without outside handles. The remainder of the side is of sheet steel with louvres in angle steel sliding frames, suspended by rollers on steel rails. The rear partition is also of sheet steel and provided with an opening which is closed by a sheet steel door. This door is lagged with ½-in. uralite or asbestos on the side nearest the passenger compartment and covered with uralite panels veneered with sycamore and framed in teak to match the passenger compartment. The rear partition of cab is 1 in. clear from the nearest part of the body end

driver's brake-valve. The ends of the sand pipes are of flexible hose. Air whistles are also used.

The principal dimensions of the under frame and body are as follows:

Length over head stocks.....	45 ft. 6 ins.
Length between truck centers.....	29 ft. 0 ins.
Width over side sills.....	7 ft. 10 ins.
Height of floor from track.....	1 ft. 10 ins.
Side sills.....	7 ins. x 3 ins.
Center sills (channels).....	4½ ins. x 2 ins.
Cab width.....	7 ft. 11 ins.
Cab lengths outside.....	12 ft. 0 ins.
Cab height in center of platform.....	7 ft. 6 ins.
Cab height in center of platform switch compartment.....	6 ft. 1½ ins.
Passenger compartment, width inside.....	8 ft. 0 ins.
Passenger compartment, width outside.....	8 ft. 6 ins.
Passenger compartment, length inside.....	29 ft. 9 ins.
Passenger compartment, height in center.....	7 ft. 9 ins.
Passenger compartment, width of gangway (maximum).....	3 ft. 5 ins.
Passenger compartment, width (between cross seats).....	1 ft. 7 ins.
Rear platform, length.....	3 ft. 3 ins.

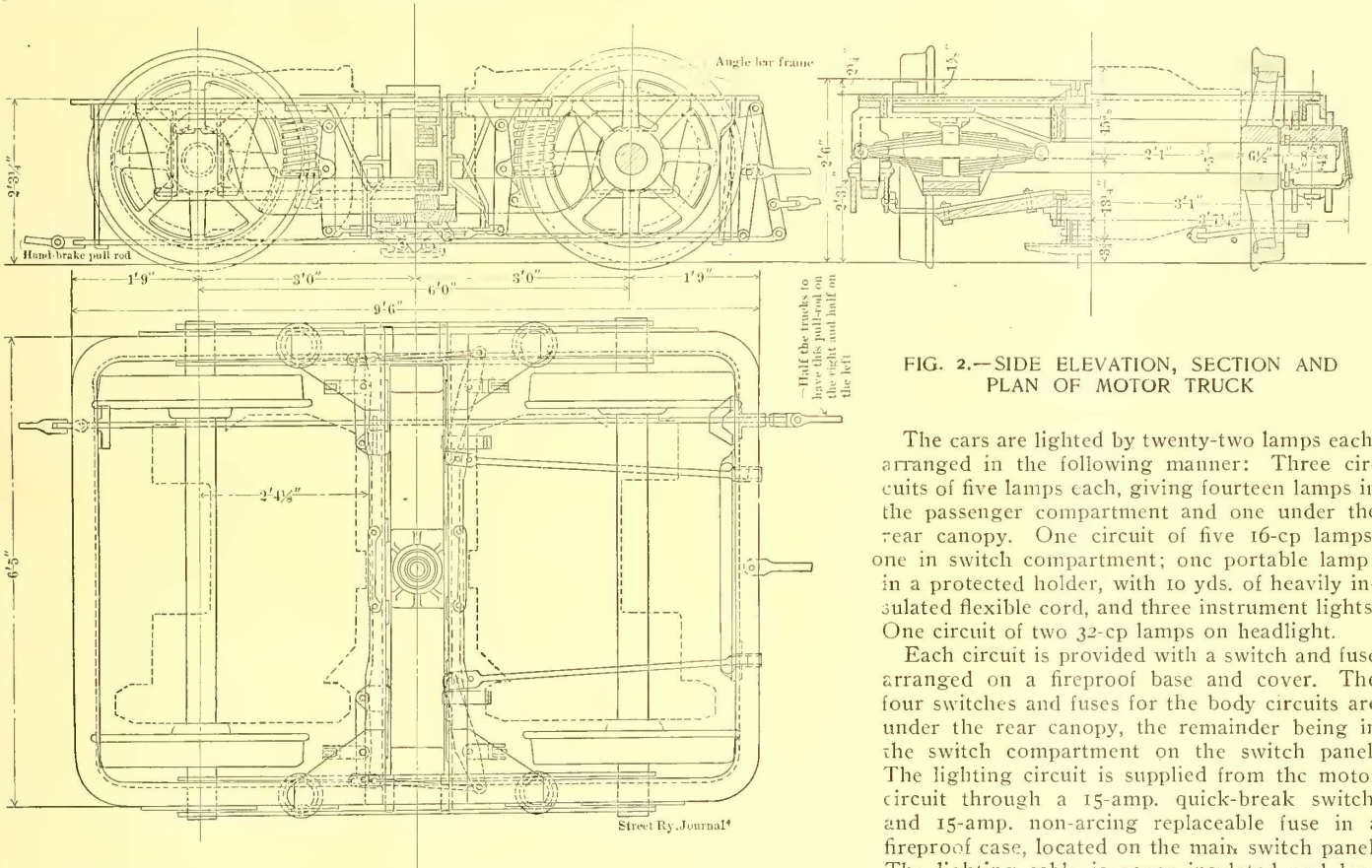


FIG. 2.—SIDE ELEVATION, SECTION AND PLAN OF MOTOR TRUCK

The cars are lighted by twenty-two lamps each, arranged in the following manner: Three circuits of five lamps each, giving fourteen lamps in the passenger compartment and one under the rear canopy. One circuit of five 16-cp lamps, one in switch compartment; one portable lamp in a protected holder, with 10 yds. of heavily insulated flexible cord, and three instrument lights. One circuit of two 32-cp lamps on headlight.

Each circuit is provided with a switch and fuse arranged on a fireproof base and cover. The four switches and fuses for the body circuits are under the rear canopy, the remainder being in the switch compartment on the switch panel. The lighting circuit is supplied from the motor circuit through a 15-amp. quick-break switch, and 15-amp. non-arcing replaceable fuse in a fireproof case, located on the main switch panel. The lighting cable is paper insulated and lead covered, and the main circuit is carried in an iron pipe outside the car roof.

panels, the space being filled in with fire-resisting material. A sheet of ⅛-in. uralite or asbestos is placed over the whole rear partition, between it and the body framing. The floor of the cab is composed of chequer plates, except on the front platform, which is the same as the passenger compartments. The open spaces under the rheostats are covered with iron wire gauze, so as to exclude dust as much as possible. The roof of the cab is of sheet steel and the rear platform is closed by automatic gates in the same way as on the old rolling stock. There is an iron grill screen 4 ft. 6 ins. high round the end of the platform, and a collapsible iron screen is provided at one side for coupling on to the trailer car. The roof over the passenger compartment is continued to form a canopy over the rear platform of ¾-in. deal, and is supported by steel ribs. The rear end of the passenger compartment is fitted with sliding doors, of which the frames and mouldings are of teak and the lower panels of white sycamore. The upper panels are glazed.

Each cab is provided with a tool chest, arranged to hold three spare fuses of each size; two control switch contacts of each type, and all necessary tools, oil cans, etc. Each motor car is also provided with an air blast sand-box arranged to sand all four wheels of the motor truck. These boxes are in the switch compartment with the controlling air valve, arranged in close proximity to the

covered, and the main circuit is carried in an iron pipe outside the car roof.

Each motor car is fitted with a hand brake and an air brake of the Westinghouse quick-acting type, for the operation of which a main air reservoir of 8 cu. ft. capacity is carried in the switch compartment. The driver's valve is located on the front platform, and there is also an emergency valve provided under the canopy of the rear platform. The air pipes are made of iron of the best quality. The brake rigging is composed of best hammered scrap, and the pins and joints are case hardened.

The motor truck used is the Peckham M. C. B.-39, with non-tilting equalizing bar, and is to be supplied by Robert W. Blackwell & Company. The main dimensions and general arrangement can be seen in Fig. 2. This truck is an improvement on the M. C. B. ordinary form of construction, inasmuch as it is non-tilting and has considerably more strength. The diamond frame construction used in this truck has been for many years the standard for freight-car trucks in the United States, and the use of the Peckham patent swing bolster allows this frame to be made very deep, and consequently of great strength and stiffness. This swing bolster also gives very easy riding. As will be seen, the main body of the truck consists of rolled angle steel bent and welded into a rectangular frame with round corners. The pedestals for the axle-boxes



are of cast steel, bolted to the frame, and have a deep cavity for receiving a coil spring on either side of the journal box, the springs being carried by a saddle supported by the journal box. Enough lead is carried by the coil springs to prevent the diamond frame from tilting on the short-base equalizing bar springs. There are two wrought-iron equalizer bars on each side of the truck, the ends resting on the axle boxes. The truck frame is supported upon helical springs carried on the equalizers, through the medium

The brake blocks are of cold blast iron, and do not press on the flanges. Each truck is provided with a walnut board for the collecting shoe. The chief dimensions of the truck are given below:

	Foot.	Inches.
Length over all.....	9	6
Width over side frames.....	6	5
Width over axle boxes.....	7	2½
Wheel diameter.....	2	10
Wheel base.....	6	0
Axle diameter in center, wheel seats and motor bearings.....	0	5
Diameter of axle journals.....	0	4¾
Length of axle journals.....	0	8

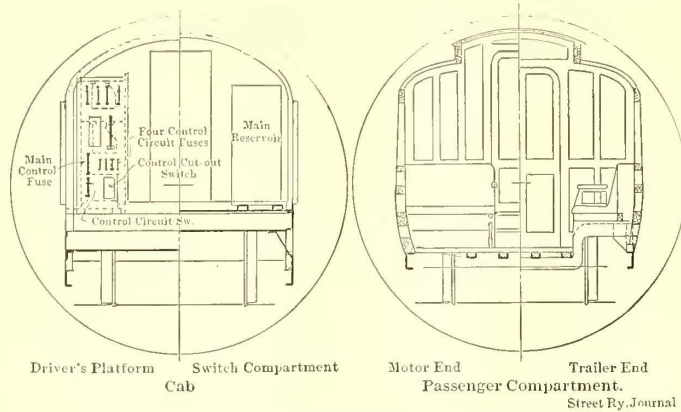


FIG. 3.—END SECTIONS AND ELEVATIONS OF CAR

of cast-steel caps secured to the frame and equalizers. A horizontal tie-bar is carried along the truck and secured to the under side of the pedestals.

The transom, which is of channel steel, is secured to the side frames by means of ½-in. stiffening plates and gussets. Diagonal braces extend from the frame to the under side of the transom. The truck bolster consists of two rolled steel plates ¾ in. thick, separated by steel distance pieces, and is supported at either end on double elliptic springs on wood blocks carried on steel-plate brackets riveted to the transom. The center and side bearings, which are of cast steel, are bolted to the bolster, the center bearing being constructed to contain a good supply of lubricant, with means of renewing the same from the inside of the car body. The motors are carried upon spring supports, as shown. The axle boxes are of cast iron with hinged water-tight fronts; they can easily be taken out by removing the bottom tie-bars and jacking

The brake-shoes are of the Corning type, which is the standard on the Central Underground Railway. These shoes have been found in service to have an average life of four months, against three weeks for cast-iron shoes and six weeks for chilled-iron shoes.

Each motor truck is equipped with two motors of G. E.-66 type similar to those used on the Manhattan Railway, of New York. Each motor, it is specified, will be capable of giving a tractive effort of 2500 lbs. at the wheel tread and a speed of 18 miles an hour, with a current of 200 amps. at 500 volts, with 80 amps. at 500 volts; the tractive effort is 650 lbs. and the full speed 27 miles an hour. The motor is capable of running in either direction, with a current of 300 amps. at 500 volts, the brushes being fixed, without injurious sparking. The magnet frame consists of a single steel casing with bored openings at the ends, which are closed by machine heads carrying armature bearings. The axle bearings are carried in lugs cast on the frame. The laminated pole pieces are bolted to the frame, and each pole has a field coil, the coils being form wound and interchangeable; they are insulated with asbestos fire and waterproof insulation and are wound on metal spools. The insulation is specified to stand a test pressure of 4000 effective volts alternating, applied between the coils and the frame.

The armature is of the projection type, with form wound interchangeable coils, mica insulated. The commutator is of hard-drawn copper with mica insulation, the end insulation being of hard quality, but between the segments it is softer, so as to wear equally with the copper. The armature bearings, as mentioned above, are carried in the frame heads, and are lubricated with oil and waste. The brasses consist of a single sleeve, with openings at the sides; drip cups are provided for the waste oil.

The armature insulation is specified to stand 3000 effective volts, alternating between coils and core for five seconds; the commu-

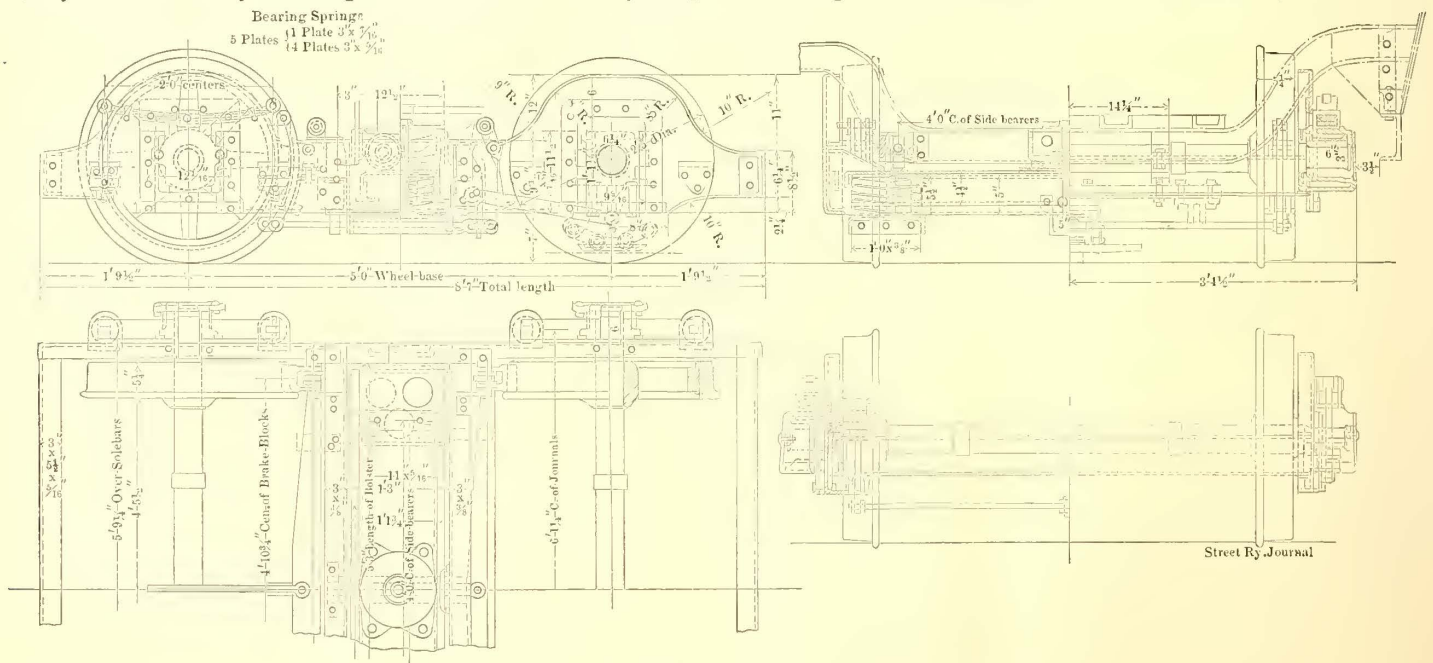


FIG. 4.—SECTIONS AND HALF PLAN OF TRAILER TRUCK

up the truck. Cork dust shields and woolen lubricating pads are provided. The bearings, which are of bronze, consist of semi-cylindrical sleeves overhung at the ends to take the end thrust, and also coming well down at the sides to take the side thrust due to the motors.

The axles are of mild forged steel with the journals ground. The shape of the wheels, which are bored for a press fit on the axle of over 60 tons, is shown in Fig. 2. The centers are of wrought iron with steel tires shrunk on and held in place by fastening rings. No keys are used to fasten the wheels.

tator to stand 4000 effective volts, alternating between segments and shell for five seconds and 500 volts between adjacent segments. The dimensions of the armature and axle bearings are as follows:

Armature bearing, pinion end.....	4	ins. x 4	ins.
Armature bearing, commutator end.....	3½	ins. x 6¾	ins.
Axle bearings.....	5	ins. x 10½	ins.

The axle bearings are bolted to the lugs on the field-magnet frame, and contain wells packed with oil and waste.

The gear is of steel, machined with a 5-in. face. The wheel is



cast in two halves, which are bolted together and keyed on the axle. The pinion is of hammered steel, with a taper fit on the motor shaft, and is secured with a nut and key. The whole gear is inclosed in a grease and dustproof case provided with an opening for lubrication.

The trailer truck is of the dimensions and arrangement shown in Fig. 4. The frames are of pressed steel, with cross members of channel steel, and were manufactured by the Leeds Forge Company. The frame is supported from the axle boxes by semi-elliptical springs, the eyes of which are forged solid with the back plates.

Company, and which consists essentially of a number of electromagnetic control switches, which can be simultaneously operated by a master controller, of which there is one on each motor car. Normally, as stated, the trains are made up of two motor cars and five trailers.

Tests have been made with a train equipped with two motor cars and also with the old gearless locomotives, and the results of these tests are indicated in the accompanying table:

While the watt-hours per ton-mile have averaged higher with the motor cars than with the locomotives, the total watt-hours per trip

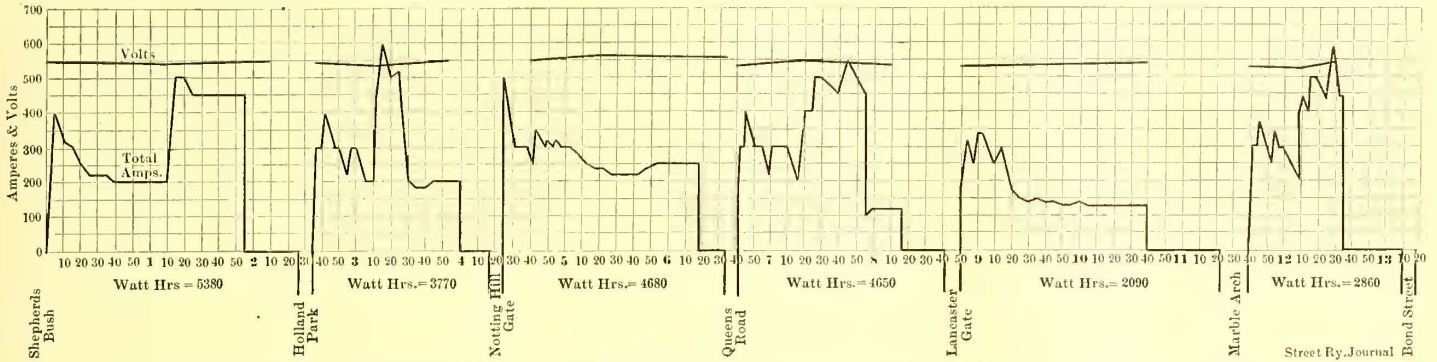


FIG. 5.—CURRENT AND VOLTAGE CURVES OF LOCOMOTIVE TRAIN RUN FROM SHEPHERD'S BUSH TO BOND STREET

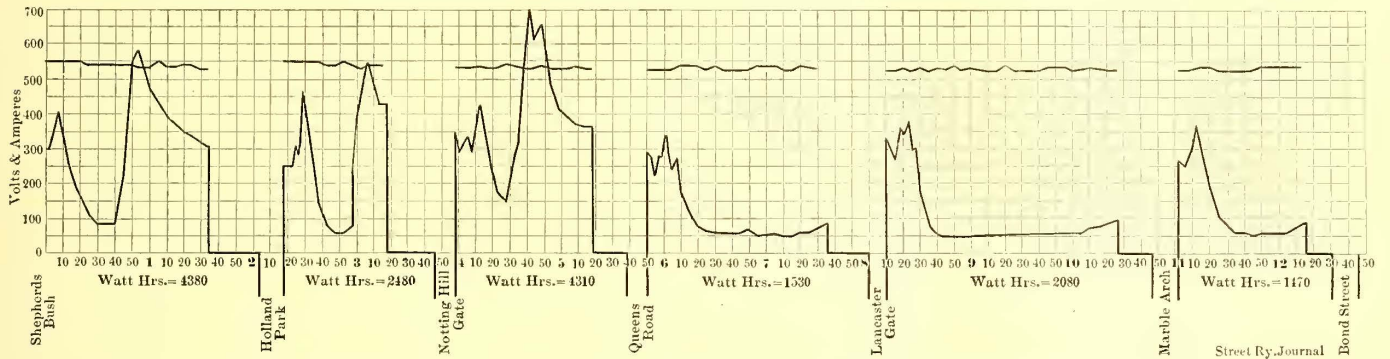


FIG. 6.—CURRENT AND VOLTAGE CURVES OF MOTOR TRAIN RUN FROM SHEPHERD'S BUSH TO BOND STREET

Spring hangers are attached to wrought-iron brackets, riveted to the side frames, and fitted with Spencer's rubber springs. The transom is of pressed steel, securely riveted to the side frames. The bolster is also of pressed steel, supported at either end on nests of spiral springs, each nest consisting of three springs, the interior spring being stronger than the outer ones. The axle boxes are of cast iron, and are provided with cork dust shields and woolen lubricating pads in steel frames. The bearings are of bronze. The axles are of mild forged steel turned throughout with the journals and provided with collars as shown. The wheels are of the pattern shown in the plans, and with wrought-iron center and steel tires. The main dimensions of the truck are as follows:

Length over all .....	8 ft. 7 ins.
Width over side frames .....	5 ft. 9 1/4 ins.
Width over axle boxes .....	6 ft. 10 ins.
Wheel diameter .....	2 ft. 5 ins.
Wheel, width of tire over all .....	5 1/4 ins.
Wheel base .....	5 ft.
Axle diameter between hubs .....	4 ins.
Axle diameter in wheel seat .....	4 1/4 ins.
Axle length in wheel seat .....	6 3/8 ins.
Axle diameter in journals .....	3 ins.
Axle length in journals .....	6 ins.

SPEED CONTROL

The train is operated on the General Electric control system, which is handled in Great Britain by the British Thomson-Houston

were considerably less for the same schedule speed. Some diagrams of current consumption for the same run with two equipments are given on this page.

The Waltham Location Decision

The Massachusetts Railroad Commissioners have dismissed the petition of the Waltham Street Railway Company for extension of franchise into the town of Lincoln. The board rules that while a railway may be deemed to be "constructed" within the meaning of the law when a crossing over a railroad remains to be built, as it can be operated by a change of cars, and while it does not think construction to a town line is necessary to bringing in a petition, even though involved in the final scheme, it is problematical whether the road can show a railway substantially constructed in Waltham. But even assuming that it could, its purpose is not to build directly into Lincoln from Waltham, but indirectly through Weston; and a location for a route through Weston has been refused by the Selectmen of that place. Feeling aggrieved over this, the order recites that it is the purpose of the petitioners to secure the right to extend into Lincoln, secure a location there, and then come to the board for a grant in Weston under the "missing link" law. But the board thinks it would be idle to give a right of extension into Lincoln unless there is a way open by which it can reach Lincoln. The only way contemplated is through Weston. This is now closed under the action of the Selectmen, with apparently no prospect of a change on their part. The board sees no excuse for action by it which would prejudge the question or determine that the Selectmen were not justified by their action, thus deciding an issue which can only be determined under a different statute—the one under which the petitioner would have taken the next step had the decision on this petition been favorable.

So popular has the "sightseeing" street car service proved with the visitors at Washington that the Cab & Carriage Drivers' Union is said to be considering the advisability of engaging a lawyer to test the right to operate this "sightseeing" service.

	WITH LOCOMOTIVES		WITH MOTOR CARS	
	Bank to Shepherd's Bush	Shepherd's Bush to Bank	Bank to Shepherd's Bush	Shepherd's Bush to Bank
Weight of train, tons....	134	148	105	105
Distance, miles.....	5.75	5.75	5.75	5.75
Ton, miles.....	765	850	605	605
Watt hours.....	33,300	36,000	25,300	27,700
Watt per ton mile.....	43.5	42.3	41.9	45.8
Watt per seat mile.....	20	18.6	16.1	15.7



### Relief for Brooklyn Bridge Congestion

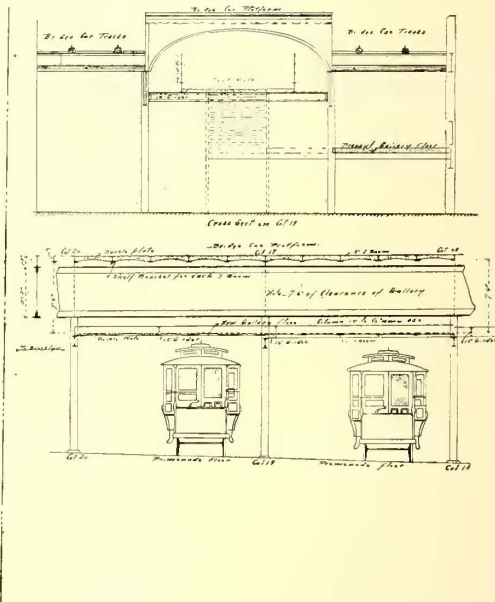
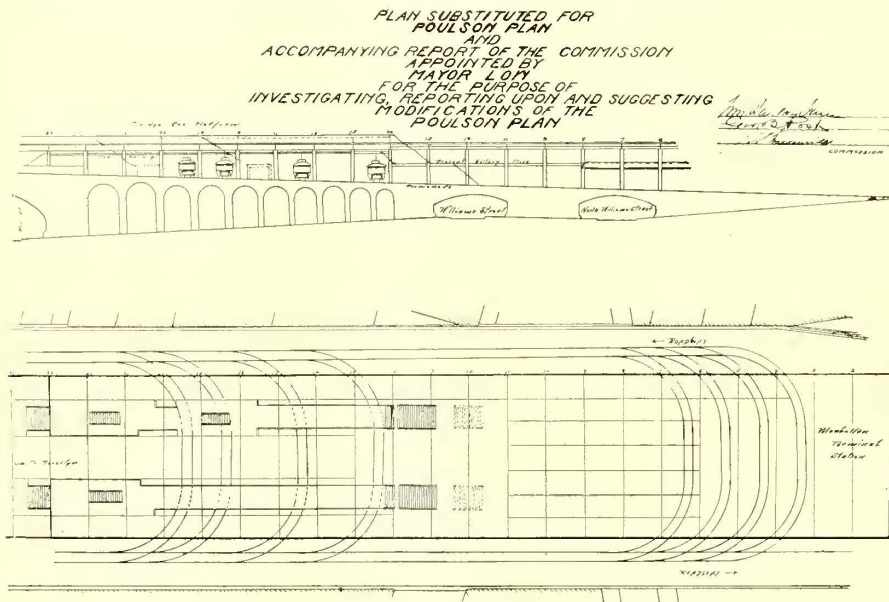
Mayor Low last week received a report from the committee to which he had referred the plans prepared by Neils Poulson, and submitted by the Manufacturers' Association, of Brooklyn, for the improvement of the terminal arrangements at the Manhattan end of the Brooklyn Bridge. These plans were described and illustrated in the STREET RAILWAY JOURNAL of Sept. 20, and they have since been carefully examined by the committee, which was composed of William Barclay Parsons, George B. Post and J. C. Breckenridge. Mr. Poulson personally explained to the committee the details of the proposed alterations, and the members examined the present arrangements at the bridge so as to see to what extent Mr. Poulson's plans could be adopted. The Commissioner of Bridges, Mr. Lindenthal, the engineer and superintendent of the bridge, Mr. Martin, and the assistant engineer, Mr. McLean, also appeared before the committee, and submitted the plans of the existing arrangements, and aided the committee by their advice and suggestions.

Mr. Poulson's plans, it will be remembered, were two in number; one looking to a change in the switching arrangements of the bridge and elevated trains, and the other proposing a new method of operating the trolley cars.

The present arrangement of switching the bridge trains is to have the loaded trains discharge their passengers onto an island platform on the north side of the bridge terminal, and immediately after run over two tail tracks west of the platforms, and then return by switching to another island platform on the south side of the station to take on board passengers for Brooklyn. By the arrangement now in vogue it is possible to handle two trains

loop for the four to be used solely for the turning of cars. In the space between the present loop and the east end of the station Mr. Poulson proposed five parallel tracks, two on the north side and three on the south side of the building. One of each of these sets was to be a main running track, but connected with the adjacent tracks by frequent double switches, which were to be arranged so that cars could be run from the main track to the side tracks, in order to discharge passengers on one side and load on the other. Fixed stopping places would be established for each line of cars. As at first proposed Mr. Poulson's plan necessitated the rearrangement of the switching of the bridge trains in order to provide sufficient overhead space for the trolley cars. At the suggestion of the committee Mr. Poulson submitted a third plan, by which the trolley car scheme could be put into effect independently of changing the method of switching bridge trains, but in order to do this Mr. Poulson was compelled to narrow the bridge train platforms at the east end and to adopt other changes in the station construction. The committee's opinion of the plan explains why it was finally rejected:

"His plan calls for not less than nine grade crossings of loaded cars and forty-two junction switches, each one of which becomes a point of congestion, and in addition it compels the turning of all the cars around a single loop of very small radius. In order to provide access to the loading and unloading tracks Mr. Poulson proposes to extend the station building so as to include that portion of the bridge roadway now occupied by the trolley tracks. This will reduce the width of the roadway to 8 ft., an inadmissible figure. If the roadway is left of reasonable width, then the passageway at the side of cars becomes so narrow as to render congestion absolutely certain. For these and other reasons, which it is not necessary to detail at length, we are of the opinion, much



IMPROVING FACILITIES FOR HANDLING BROOKLYN BRIDGE CROWDS

simultaneously, and to separate entirely incoming and outgoing passengers, and to do all switching with empty trains. Mr. Poulson's arrangement would do away with the tail tracks and have each train discharge and load simultaneously. This, however, involves a grade crossing for all incoming trains at a time when they are loaded with passengers. A similar arrangement was at one time tried on the bridge, but was condemned on account of the danger involved and the consequent delays to trains. On this point the committee says: "It is the experience of railroad men that all crossings of loaded trains at grade should, as far as possible, be done away with, and that switching by tail tracks is much more expeditious than switching by the head-house arrangement as suggested by Mr. Poulson. For these reasons we are of the opinion that the present arrangement should be continued pending such radical reorganization of the train service as is now under consideration by the bridge department and the railway company."

The committee pronounced Mr. Poulson's plan "a very ingenious arrangement for the handling of the trolley cars," and added that at first sight it seemed to promise great results, but it was finally disapproved.

The present method of operation is to run all the trolley cars around four parallel loops at the west end of the bridge terminal. This produces great congestion, and, also, great inconvenience and positive danger. Mr. Poulson's plan would substitute one

to our regret, that Mr. Poulson's plan would not provide satisfactory relief."

The committee continued to investigate the subject, under direction of the mayor, and, as a result, formulated a plan which it believes is entirely practicable, and which it declares will afford the maximum relief to trolley passengers without an entire reconstruction of the bridge terminal. This plan also has the merit of simplicity, and can be put into execution at the minimum of cost both in time and money.

As will be seen by the accompanying diagram it is proposed to construct four more loops at a point about midway between the present loops and the end of the station. By moving the galleries, which now connect the mezzanine floor with the several stairways leading to the bridge platforms, to the space directly beneath the bridge platform, it is possible to raise them so as to give sufficient head-room for trolley cars to pass beneath them. It will thus not be necessary to interfere with the means of access to the bridge trains above. These new loops can be located as to give more intertrack space than is afforded by the present loops. There are seventeen lines of trolley cars crossing the bridge, which, under the present arrangement, means more than four lines to each loop. Under the new arrangement there will be but two lines on each loop, except on one loop, where there will be three lines. This will permit cars to stand upon a loop until the next succeeding car arrives, so that passengers will always find a car ready



to be entered or one about drawing in. The only work necessary to be done to carry this plan into execution will be to widen the roadways from the end of the present widening to the curve of the roadway at the east end of the station, and to move the galleries, as already described, and to lay the track. The principal delay will be in changing the roadway and getting the special track work for the loops. It is believed, however, that this work can be done in sixty days from the time that the order is given. The committee estimates that the improvement can be completed at a cost not exceeding \$50,000. This plan, therefore, is pronounced reasonable in cost, and possesses the additional advantage that it can be carried into execution within the minimum of delay, and will afford the maximum of facility. In making this suggestion, however, the committee admits that while these additional loops will afford the greatest relief possible under present conditions, in the reduction of congestion and decrease of danger of accident, the system will still possess, in a minor degree, all of the defects of the present arrangement, that it will afford but slightly increased carrying capacity, though providing more facilities for entering and leaving the cars, and that, therefore, the improvement must be considered as a temporary expedient only. As a means of increasing immediately the carrying capacity of the bridge, the committee suggests that this could be effected by prohibiting the use of the roadway for trucks between the hours of 5 p. m. and 7 p. m., and says that while it is of course objectionable in any way to limit the vehicular traffic of the city of New York, the question to be considered in this particular case is which is the less important of the public services to be interfered with—the passenger travel or truck traffic. Inasmuch as the bridge is already sadly overcrowded, and inasmuch as even the improvement herein proposed will at best be but a temporary makeshift, the committee recommended that the whole question of transportation over the Brooklyn Bridge be studied by those in authority and those whose function it is to operate the railway so as to provide a permanent increase in facilities, which are absolutely essential.

In conclusion the committee recommends that whatever plan is finally adopted for the furnishing of facilities, the opportunity will be utilized to develop the approach to the bridge so that it will become an ornament to the city and not an eyesore, as at present, and provide a fitting gateway to the bridge, which of all the great bridges of the world carries the greatest traffic.

Bridge Commissioner Lindenthal, to whom the report was referred by Mayor Low, has examined the plans submitted and approved the recommendations of the committee. It was announced by Mayor Low that the work would be begun immediately, and it is expected that the improvement will be completed before the first of the year. The expense of the changes will be borne by the Brooklyn Rapid Transit Company.

### Plans for the Philadelphia Subway Announced

The Philadelphia Rapid Transit Company has made public the plans for the construction of the Market Street subway. A loop will be built around the business section of the city, bounded by Broad, Fifth, Walnut and Arch Streets, and a two-track subway will be constructed in Market Street, from the Delaware River to Fifteenth and Market Streets, where the tracks, forming a loop, will turn in. Four tracks will be continued underground to Twenty-Second and Market Streets, at which point they will merge, and after having been carried over the Schuylkill River, by an elevated bridge, they will be continued as an elevated system to Sixty-Third and Market Streets.

This part of the subway system will be the main artery of travel. In the loop system the line will extend in Market Street from the Schuylkill River to City Hall. At Broad Street the loop will be carried underground to Broad and Walnut, down Walnut to Fifth Street, north in Fifth Street to Arch, west on Arch to Broad, south on Broad to Filbert Street and thence to Market Street. In brief, the loop will be a continuous line from West Philadelphia, around the wide area where most traffic is now handled.

With the double system now decided on the idea will be to run over the loop such of the West Philadelphia surface cars as are to be turned into the Market Street subway at Twenty-Second and Market Streets. From there to Broad Street there will be four tracks as described. On the middle pair will be operated the in-bound and out-bound three and five-car express trains, which will run the whole length of Market Street.

The lines, for which plans are now announced, will be built by the company under the charter of the Market Street Elevated Passenger Railway Company, which was granted a franchise by the Council on April 9, 1902. The ordinance which the company holds is flexible enough to permit either an elevated or subway, and also

authorizes a subway to Twenty-Second and Market Streets, whence an elevated may be built to Sixty-Third and Market Streets. According to the plans decided upon the company authorize the necessary legal steps to be taken to carry out the revised plans, and application will be made at Harrisburg for the charter amendments required by the new route.

### A Course in Street Railway Engineering Practice

It is announced that the engineering department of Lewis Institute, Chicago, which has already done much excellent work in the way of practical engineering education, both by day and night school courses, will give, in addition to the night courses heretofore instituted, one in street railway practice. Classes begin Oct. 7, to be held Tuesdays and Fridays. The course will be in charge of H. M. Wheeler, of the engineering department of the Chicago Union Traction Company. The course will take up track construction, types of rails, bonds and welds, paving, cost of 1 mile of double track, overhead trolley construction, feeder calculations, costs of overhead work, rolling stock, motors and motor troubles, hand, air and electric brakes, controller connections, heaters, tests of cars for speed and current consumption, electrolysis, the power house, steam and electrical machinery, switchboards, etc.

### The Strike at New Orleans

The strike of the employees of the New Orleans Railways Company, declared Sept. 27, was no nearer a settlement on Oct. 7 than the day of its declaration, all the efforts of Mayor Capdeville, the police board and a committee of merchants to settle the dispute by a compromise having proved futile. The Mayor, through whose good offices the strike of April last was settled, is thoroughly disgusted with the course pursued by the strikers, and now announces his determination to use extreme force to suppress the rioting and establish the running of cars, and has notified Governor Heard of his intention to call for the aid of the militia in putting down the lawless element.

On Thursday, Sept. 25, the officials of the company were notified by the employees that all former and existing contracts between them and the company are declared abrogated, the employees stating that the company had failed to live up to the agreement entered into in April of this year. With this notice of the abrogation of the existing contracts was presented an entirely new tariff of wages and time and schedule of work. Among the demands of the men were that ten consecutive hours shall constitute a day's work; that all runs under five hours shall be considered extra runs; that wages of motormen and conductors shall be 25 cents an hour; that when men are laid off to look up evidence, or settlement of cases, they shall be paid at the rate of salary; that any man taken off for any cause and proving his innocence, shall be paid for loss of time; that no employees be discharged on account of their connection with the Street Railway Employees' Association; that employees shall be free to join any association they may see fit; that the company meet and treat with a committee of Division 194 of the Amalgamated Association of Street Railway Employees, composed of employees of the company; and that head pitmen shall receive \$80 a month; pitmen, \$70 a month; pitmen's helpers and dopers, \$60 a month; car washers, \$50 a month, and curve oilers, \$50 a month. The company was asked to answer by 3 p. m. on Saturday, Sept. 27.

To these demands of its employees for a new arrangement of wages and a new contract for service the company replied on Friday, Sept. 26. In this reply the claim was made that the men are already bound for one year by the agreement of April 1. This contract or agreement the company claimed to be still binding, maintaining that under it the employees have no right to ask for a new schedule of wages and hours of labor. To the several charges made by the employees that the former agreement had been violated by the company, specific answer and denial were made. The company, always ready to discuss, fairly and fully, all grievances brought forward relative to the contract of April 1, demanded that the old contract be adhered to until violations were proved, and that the men return to work pending an investigation of the grievances.

This firm stand of the company had some effect, for on Thursday, Oct. 2, the men modified their demands. They agreed to return to work on the basis of the new demands—eight hours and 25 cents an hour—then submit all other grievances to arbitration, stating that if arbitration failed to prove violation of the existing contract they would serve out the April contract. Of course it was out of the question for the company to allow the men to resume work under these conditions.



## PROCEEDINGS OF THE A. S. R. A. CONVENTION

President Vreeland called the convention to order at 11:15 A. M. and introduced the Hon. William C. Maybury, Mayor of Detroit, who delivered an address of welcome, in which he said:

### MAYOR MAYBURY'S ADDRESS

Mr. President, Ladies and Gentlemen.—Your good president has said that I have consented to deliver a few words of welcome to you upon your visit to this good old city; but I beg this privilege of changing that word, consent, by saying that I have craved the privilege of welcoming you to this city. To say welcome, to ladies and gentlemen like you, is not a matter of consent, it is a privilege. I have been waiting for several months for this privilege, and I am glad that the time has come when I can avail myself of it.

You occupy a very close place in the relations which bear upon the comfort and convenience and well-being of our people. We have here a city that is so laid out as to be peculiarly adapted to street railway service. Here we have a converging of all lines from the suburbs into one center, practically, and that also is the plan of the city itself; for it was laid out about a century ago, after the plan of the city of Washington; in fact, the plan was brought here, and, as far as it could be made applicable to the new city of Detroit, you have a reproduction of the capital itself. If you will take the city hall as the capitol, the radiating streets and avenues are identically the same as in Washington; but the persons who laid out the city, the territorial governor and judges, had little knowledge of what Detroit was to be. Perhaps, I ought not to say that, as they gave us a good city, yet, they laid out the city with the streets radiating for a distance much less than a mile from the center, and from that point the plan is discontinued. Now, I say that you come close to the well-being of our people, and in the city of Detroit the conditions are most favorable for the prosecution of your particular business. Our avenues are wide; our people ride in the cars, and they want to get the best conveniences in the matter of transportation that are possible, and we believe we have them. We are after the best and do not want anything short of the best. Not alone that, but we have no hills to contend with. Aside from the slight rise from the river, which is scarcely to be considered, Detroit is practically almost flat, just rising enough towards the North to give fair drainage; but in every other way I think the conditions in Detroit are peculiarly favorable to the successful operation of a street railway. I desire to say, in spite of the modesty of our railroad management in Detroit, that we are proud of the splendid operation of our street railway, of the cleanliness of our cars, the gentlemanly conduct of those in charge, and everything that goes to make the operation of a street railroad substantially successful and complete.

My dear friends, the notable thought that comes to us in a convention like this is the fact that the world is growing so catholic and so broad. You may say the men upstairs who have inventions and apparatus to display are here for commercial reasons. I grant you that the inventor is worthy of a proper return for his genius, as the laborer is worthy of his hire; but in the broadest sense those exhibiting appliances that are meant to make the operation of the cars safer and more rapid and to insure greater comfort and cleanliness in them are inspired by other reasons. These men give these things to you and to the world, actuated not alone by commercial considerations, but in order that the cult which you are connected with shall be a great success. For it is a grand thing to stand up in the race of men, as some individuals do, like mountain peaks that are themselves above the ranges about them; and it is a pleasure for most of us to belong to something in this world, some organization or association, that we are proud to say, for example, "I belong to the cult of railway operators, the men who supply the railway appliances and the railway systems in the great cities of this country." You are proud to say that you belong to such an organization; you are proud of it because the connection with such an organization is one which places honor on any man; and a measure of any man's usefulness in this world is not what he can do for himself alone, for the meanest man you can think of is the man who has some secret that belongs to the world, and yet tries to hide it.

These conventions are significant of the age in which we live, and the world will not be poorer, but richer, because, once discovered, inventions are committed to the children of men for their good and go on for all time. The world will continue to be enriched as long as the children of men dwell upon its surface.

Coming with such thoughts and purpose, why are you not welcome to Detroit? We have not a very abundant supply of coal, but possibly after the convention of to-morrow, we may have a good deal more. I believe many of these things are as we think

they are. Just imagine that it is warm. It is not October; it is July; and reach out, wrap yourself with a blanket of the hospitality of these good people of our city, and you cannot be cold, coal or no coal.

President Vreeland.—Mr. Mayor, on behalf of the officers and members of the American Street Railway Association, I tender to you our hearty thanks for your very cordial address of welcome. We represent a body of practical, hard-working men; our industry has more to do with the comforts and conveniences of the daily lives of the seventy millions of people of the United States than is represented in any other industry. We have to carry this great mass of people safely over city streets to the suburban areas; to the home and the school; and we are most important factors in the social and business life of every community in the country. The stores, the manufacturing industries, in fact, all of the daily life of the city is dependent upon the regular and orderly conduct of our business; and if our system is interrupted it means inconvenience and loss to every city.

On behalf of the executive committee and the officers of the association I desire to express our thanks for the large and representative attendance we have this morning on the opening of the convention. This is certainly a larger attendance at our first day's meeting than I have ever seen in the many conventions I have attended. It devolves upon the president each year to deliver what is known as the "President's Address," and for the first time in speaking to a body of railroad men I am going to read an address. There are some points connected with it that are rather novel in connection with the work of a street railway association, and I want to be careful in what I say.

President Vreeland then read the following address:

### PRESIDENT VREELAND'S ADDRESS

It is exceedingly appropriate that the twenty-first annual meeting of the American Street Railway Association should be held in the beautiful city of Detroit, for, while the city street railways of the country have not been idle during the last year, the greatest development in electric railway work since our last convention, and in fact for several years, has been in the direction of interurban electric railways, and in this class of road Detroit railway enterprise has always been prominently identified. Radiating from this city can be found some of the largest and most modern of interurban railways, and Detroit ranks with Cleveland, Indianapolis, Cincinnati and Dayton as the important centers in this country of the interurban railway industry. It is connected by high-speed electric railways with Port Huron on the north and Toledo and Cleveland on the south and east, while the lines to the west extend with only a slight break as far as the eastern shore of Lake Michigan, and will probably before long find entrance into Chicago.

The interurban railways have long since passed the stage when they could be considered simply as suburban extensions of city lines. They are doing a through business, which is constantly growing, and the later and more ambitious examples of roads of this class are built with a track construction inferior in no respect to the best practice of the steam railroad companies. They operate usually for the greatest part of their distance over private rights of way, and attain speeds which enable them to compete successfully with their steam railroad rivals for nearly every class of traffic except long-distance passenger and freight business. This extension of the electric railway has introduced new problems of discussion, such as fares, transportation of freight, etc., into the operating department, as well as the exercise of the most advanced electrical engineering methods, not only in the transmission of the power at high voltage necessary to operate the cars, but in the car equipment as well. Up to the present, direct current has been used on the trolley wire or third rail, but if the experiments with single-phase motors, which it is announced are soon to be tried, prove successful, the possibility of the direct application of alternating current to railway work will remove some of the inconveniences which now exist in the present system.

I will not take the time of the convention to give the statistics showing the advances made in street railroading during the last year. Some of them will be brought out in the papers to be read, and statistics on the subject are published in the technical press from time to time. It is interesting in passing to note, however, that eleven years ago there were about 1800 miles of electric railways in the country, while to-day there are between 24,000 miles and 25,000 miles, and that against an investment eleven years ago in street railways of about \$75,000,000, the total capital in-



vested to-day is in the neighborhood of two billion dollars. These figures show that the time has come when we should no longer apologize for our existence, but should take a stand individually and as an association for the protection of our rights as a corporation.

It is a venerable saying that corporations have no souls, and, perhaps, the credit that has attached to this aphorism accounts for the evident belief of the public that they have no feelings. We are here as members and managers of a class of corporations which is more intimately related than any other to the comfort, convenience and success of the people who live in cities and towns. Upon the orderly operation of a street railroad depends substantially everything else that goes on in a thickly settled community. It is true that what we are operating is a valuable privilege granted by the public, but its value depends chiefly upon the sufficiency with which the public is served, and the public was moved to grant it solely from considerations of its own comfort and interest. The contract between the public and the street railroads, therefore, is a contract of partnership and the interest of the partners is identical. What the public wants is the best possible service, and only by giving the best possible service can we obtain the largest possible returns for our money.

And yet, despite this close association of interest, it is the experience of all of us that there is scarcely any limit to the impositions which the public will permit, and rather cheerfully permit, to be laid upon street railway corporations. Legislatures and boards of aldermen seem to regard street railroads as fair game to be hit at as often and as viciously as anybody chooses, and the public newspapers, so far from taking into account the service we are rendering and protecting us against the schemes of demagogues, are rather inclined to regard injuries so inflicted with amused indifference, if not with positive favor.

In every other form in which property manifests itself, except in shares of corporate stock, it has well defined rights and valuable privileges. One thousand dollars invested in bank notes or government bonds, or even in real estate mortgages, are surrounded with legal safeguards to maintain their value, and if the hand of the despoiler for one moment seems to menace them everybody begins to talk about the sacred rights of property. That is just as it should be. But money lent to the government at a comfortable rate of interest is no more directly employed upon the public business than that which is represented by the stock of a street railroad, and it is no answer to the claim that it ought to have fair treatment, that it ought not to be the object of special prejudice and attack, to say that it is particularly valuable. Its value is strictly measured by the public service it renders. The contract, of which our charters and certificates of incorporation are the witnesses, authorizes us, as the universal law of business authorizes every one, so to employ our abilities and resources as to obtain from them the greatest possible result to ourselves, and if, in recent years, street railroad shares have been especially good income earners, it is because the street railroad companies are meeting the public ends for which they were organized, because they have studied and facilitated the public interests and needs, because they have put themselves in advance of the development of the cities and towns they run through, because at vast expense they have introduced new methods, new machinery, swifter, more frequent and improved accommodations, and it has never been laid down by the courts that a contract could be broken and new conditions imposed because either of the parties to it had done better than was anticipated, and certainly not because both had. And yet the contracts between the public and the street railroad companies are being continually infringed upon by the imposition of new taxes and new requirements, and it has come to be considered almost an impertinence for a corporation so injured to offer ever so mild a protest.

In the theory of the law a corporation is an individual, but apparently only for the purpose of enabling it to be got at. It has all the obligations of individuals, but of their rights few. The politicians of all parties talk themselves hoarse with eloquent protestations of their love of individual liberty and individual rights, and so well have their laws justified these pretensions that no man in this country is so idle, so worthless, so bereft by his own acts of character, property or position but that if he contrives to keep out of prison he has a vote and the opportunity of making his equal influence felt in the determination of public questions. But a corporation, even such a corporation as is organized to serve the public convenience, may neither vote nor in any other way participate in making the laws by which it must be bound. The proposition before the public on which an election is to be held and a policy defined for future legislation, may be one which vitally concerns the interests, even the life, of a corporation, but if it were to undertake to express its views from a public platform or to influence the votes even of those persons who derive their

means of livelihood from its operations, the very foundations of social order would seem to be attacked. It must stand by on such occasions in submissive silence. It must affect an attitude of indifference, and if it does not actually proclaim to its employees their title to vote as they please it becomes at once the object of suspicion and prejudice.

Wars have been fought and governments formed to vindicate the principle that there shall be no taxation without representation, but if a corporation should ask to be represented in a public body that had the power of taxation and was proposing to exercise it upon corporations, its action would be observed with indignation and amazement. Even in the courts its standing is prejudiced, and before a jury sworn to render an impartial verdict upon the facts, its first and constant care is to remove from the minds of the jurymen a frankly admitted antagonism.

It is not remarkable that in this situation the law should discriminate against corporations. The failure to assert rights when they are threatened is always taken as a confession that they do not exist, and encroachment follows encroachment with ruthless certainty. Timid counsels have so far prevailed among the street railroad companies in the adjustment of their affairs with the public that in many States there is a gross discrimination in the taxing laws against such corporations. When by Federal legislation it was proposed to tax the incomes of individuals, although a limit was placed which protected the poorer classes, public protest made itself felt so powerfully that the Supreme Court of the United States, after holding that an income tax was lawful, proceeded to reverse itself and to find constitutional objections that absolutely killed the income tax law. And yet an income tax upon the earnings of corporations is found upon the statute books of many of our American commonwealths, and corporations with which a State has made definite contracts fixing and limiting the obligations on either side are required, notwithstanding these contracts, to pay other and additional taxes upon their gross earnings.

When money is invested in a public franchise upon terms and conditions expressed in a charter or a certificate of incorporation under a general act, the shareholders have a moral, and it ought to be a legal, right to understand that what they are to pay and to do in making their franchise effectual is nothing more than or different from the conditions of which they had notice and to which they agreed. The rule that there can be no impairment of the obligations of a contract is to be found in the fundamental law of the United States and of every State, and in controversies between individuals no constitutional guarantee is more carefully protected by the courts. And in a contract between the State and a corporation there is no trouble about holding the corporation. If it violates its contracts, or if it does not give the promised service or duly make the promised payments, the Attorney-General is authorized to institute proceedings for its dissolution. But the rule of performance does not work both ways. It appears to bind only the corporation. The State can pass new laws imposing new conditions and the corporation will have its pains for its protest.

I look forward to the day when the shareholders in street railway corporations will stand up for their rights as shareholders in the same sturdy spirit which they would at once bring to the defense of their rights as individuals. The great street railway properties of this country, and even the little ones, are no longer in the hands of a few rich men. They are distributed in hundreds of thousands of shares ranging in par value from five dollars to a hundred dollars among a countless body of the people. The heads of these properties are no longer in any material degree their owners. They are, and are coming more and more to be, simply the salaried employees of a great number of shareholders. They conduct the business of these properties as a trust, and they have nothing to do with the stock market. Their one concern is to earn a dividend for their shareholders and pay it where it belongs. Every shareholder is as much interested to protect the property against unjust discriminations in the laws and to protect its reputation as a business organization as are any of us who are placed for the time being in charge of the property. It is no less their duty than it is ours to insist that public officials shall treat these corporations equitably and honestly.

It will not be denied that inasmuch as our opportunity to earn money proceeds out of a public privilege we should pay to the public a fair return for what we get. But what we give in the way of service and what it costs us to give are elements just as much entitled to consideration in the making of the contract as any other; and when the contract is once made it ought to be as little subject to repudiation or change as any other contract. The faithful discharge of our obligations requires a continually increasing investment, the constant incurring of new risks. It is not enough that we shall meet the demand as it exists from day to day; it is necessary that we should anticipate it. And if the profits upon our investment prove in the end to be considerable,



that is the reward to which intelligent foresight, courage and good management are always entitled. The spirit that seeks to confiscate anybody's legitimate earnings is unfair and reprehensible, and honest-minded men should be strong to oppose it.

This association has served an honorable and useful purpose for twenty-one years, but the time may be at hand when the scope of its usefulness can be materially increased. I have already pointed out the injustice which is done corporations by municipalities and the need for public enlightenment, not only on the equity of their cause, but also on the service which they are rendering the public. There is one other point to which, however, I would like to direct your attention, and that is in connection with the broader field of electric railroading which this country will certainly see during the next decade.

I have already referred to the immense mileage of interurban electric railways which has been built during the last few years, especially in the Middle West. Many of these roads are hauling freight, and it is a matter of great importance, not only to these roads themselves, but to the cities and towns which they serve, that the facilities which they should enjoy as regards the interchange of freight with the steam railroads should be as free as those between the steam railroads themselves. The first point requisite to this end is to have convenient connections with the neighboring steam railroads, so that the freight cars can be passed from one to the other. The right of the electric company to demand this has only recently been decided in New York State in a case which was contested between the Hudson Valley Railway Company and the Boston & Maine Railroad Company, in which the Court of Appeals reversed the decision of the Appellate Division and rightly decided that an intersection and connection of the electric road and the steam road should be made in the interests of the local shippers. This right should be of great advantage to the electric railroad company, but the full benefit to the local shippers will not be derived until the full privileges of an interchange of freight cars between the two systems shall be as universally recognized as they now are between steam railroads, so that freight can originate on either the steam or electric road. Heretofore in many cases, the steam railroad companies have shown an unwillingness to interchange freight with the competing electric roads, on the plea that the latter were not responsible in the same degree as the steam railroads, and by this means considerable freight transportation has been diverted from the electric railroad.

The points just mentioned indicate the broader problems which are being forced upon the electric railway interests of the country, through the large increase in interurban electric railway companies, which naturally look to this association as the exponent of their interests. This is only natural because while these lines do not operate upon the streets, the electrical equipment problems connected therewith, as well as many of the other questions which arise in connection with their operation are the same as those which interest "street railway" managers proper. And while it may appear inadvisable to change the name of the American Street Railway Association to accord with the broader field of electric railroading in which many of its members are engaged, it should be understood that the association is not merely a street railway organization, but its scope covers the entire field of electric railway transportation. More than this, it may seem desirable to welcome the participation of all companies engaged in electric railway transportation, for the reason that there is no organization in the country which has accomplished so much, or at its annual conventions and exhibitions can afford anywhere near the same opportunity for instruction to those interested in electric transportation in its different phases. Heretofore no manager or engineer of a trunk line company which is contemplating or has installed a system of electric traction could join this association except as a representative of some street railway company; but in view of the interest which is being taken in electric railway equipment by some of the large trunk line interests and the undeniable future which electric power will have for such transportation, especially for terminal and suburban work, the question will arise in the near future, if it has not already done so, whether the benefits which this association can confer are available for companies which are not now eligible to membership.

I will not attempt to suggest an answer to this question, but all signs indicate that it will be an important one during the next few years, if it is not so already.

Upon motion of Col. Heft a vote of thanks was tendered President Vreeland, and it was ordered that the address be spread upon the minutes, and that the secretary be instructed to have it printed for distribution.

President Vreeland.—Gentlemen, I thank you for that expression. Those of you who are connected with electric railroads in the

Eastern section of the country have heard expression of such sentiments from me a number of times. I felt that it was a duty I owed to the street railway interests of the United States to take a stand on this question, as I did in the East a few months ago. The problem we have confronting us, as I have indicated in the address, is not the problem that confronted the managers of street railroads ten years ago. The man who ran street railroads at that time usually owned a large part of the capital stock and dictated the policy with a hand on the pocket-book. The policies of the street railroads of to-day are dictated by men who are technically and scientifically educated in the methods of management and control and operation of these large corporations. The character of the service which is rendered to the public throughout the country, the development going on in the hands of men who have nothing to do with the financial questions connected with the property, is what has brought the electric railroad properties up to their present state. The electric railroad system has no history back of it. The man who works in this field is a pioneer, whether he is an operating manager, or the electrical engineer or mechanical engineer. All experience in connection with this work must be obtained by hard work, and the hard knocks that come from the actual operation of these properties. That electric railroading has advanced to the stage in the world's transportation that it represents to-day, particularly in the United States and Canada, is an evidence of how hard we have worked and how well directed our efforts have been, and how ably we have been supported by the great electrical and mechanical equipment companies in this country. They have spared no expense and no pains in the developments which have had to do with the success of our industry, and it is but fair to them to say in this convention that they have had just as much to do with placing the electric railway on the high pinnacle of advancement it occupies to-day as any distinctly operating or mechanical men in the country.

The next order of business is the report of the executive committee.

#### EXECUTIVE COMMITTEE'S REPORT

The secretary read the report, which consisted, as in past years, of the minutes of the several meetings held during the year, including the provisions made for the annual convention and exhibition. On motion the report was received and filed.

President Vreeland.—We will now hear the report of the secretary and treasurer.

#### REPORT OF SECRETARY AND TREASURER

The secretary read his annual report, which contained the following statement of the affairs of the association:

Cash in bank October 1, 1901.....		\$10,128.68
Receipts to October 1, 1902.		
Annual dues .....	\$4,675.00	
Rent of space exhibit hall, 1901.....	1,848.50	
Rent of space exhibit hall, 1902.....	1,669.50	
Interest on deposits .....	185.85	8,378.85
		<hr/>
		\$18,507.53
Expenses to October 1, 1902.		
Printing and stationery .....	\$1,897.27	
Postage .....	264.20	
Salaries .....	1,500.00	
Miscellaneous expense .....	50.00	
Executive committee, 1902 .....	647.45	
Twentieth annual convention, 1901.....	3,341.11	
Twenty-first annual convention, 1902.....	548.41	
Committee on standards .....	311.06	
		<hr/>
	\$8,559.50	
Cash in bank October 1, 1902 .....	9,948.03	\$18,507.53

#### NEW MEMBERS

The following companies acquired membership at and since the last meeting.

Altoona, Pa., Altoona & Logan Valley Electric Railway Company.  
 Ashtabula, Ohio., Pennsylvania & Ohio Railway Company.  
 Atlanta, Ga., Atlanta Rapid Transit Company.  
 Atlanta, Ga., Georgia Railway & Electric Company.  
 Austin, Texas, Austin Electric Railway Company.  
 Belleville, Ill., St. Louis & Illinois Suburban Railway Company.  
 Boston, Mass., Boston & Northern Street Railway Company.  
 Boston, Mass., Old Colony Street Railway Company.  
 Canton, Ohio, Canton-Akron Railway Company.  
 Cleveland, Ohio, Cleveland & Eastern Railway Company.  
 Cleveland, Ohio, Lake Shore Electric Company.  
 Columbus, Ga., Columbus Railroad Company.  
 Denison, Texas, Denison & Sherman Railway Company.  
 El Paso, Texas, El Paso Electric Railway Company.



- Exeter, N. H., Exeter, Hampton & Amesbury Street Railway Company.
- Florence, Col., Florence Electric Street Railway Company.
- Hancock, Mich., Houghton Connty Street Railway Company.
- Holland, Mich., Grand Rapids, Holland & Lake Michigan Rapid Railway Company.
- Jacksonville, Fla., Jacksonville Street Railroad Company.
- Kenosha, Wis., Kenosha Street Railway Company.
- Little Rock, Ark., Little Rock Traction & Electric Company.
- Maynard, Mass., Concord, Maynard & Hudson Railway Company.
- New Orleans, La., New Orleans Railways Company.
- New York, N. Y., New York & Port Chester Railroad Company.
- Oneida, N. Y., Oneida Railway Company.
- Pittsburgh, Pa., Pittsburgh, McKeesport & Connellsville Railroad Company.
- Plymouth, Mass., Brockton & Plymouth Street Railway Company.
- Pottsville, Pa., Pottsville Union Traction Company.
- Providence, R. I., Providence & Danielson Railway Company.
- Richmond, Va., Richmond Passenger & Power Company.
- Richmond, Va., Virginia Passenger & Power Company.
- San Antonio, Texas, San Antonio Traction Company.
- Savannah, Ga., Savannah Electric Company.
- Utica, N. Y., Utica & Mohawk Valley Railroad Company.
- Wheeling, W. Va., Wheeling & Elm Grove Railroad Company.

MEMBERS WITHDRAWN

- Atlanta, Ga., Atlanta Railway & Power Company.
- Atlanta, Ga., Atlanta Rapid Transit Company.
- Bridgeport, Conn., Bridgeport Traction Company.
- Brockton, Mass., Brockton Street Railway Company.
- Brookfield, Mass., Warren, Brookfield & Spencer Street Railway Company.
- Detroit, Mich., Detroit, Rochester, Romeo & Lake Orion Railway Company.
- Detroit, Mich., Detroit & Pontiac Railway Company.
- Fall River, Mass., Globe Street Railway Company.
- Highwood, Ill., Chicago & Milwaukee Electric Railway Company.
- Kansas City, Mo., East Side Electric Railway Company.
- Lowell, Mass., Lowell, Lawrence & Haverhill Street Railway Company.
- Lynn, Mass., Lynn & Boston Railroad Company.
- Meridian, Miss., Meridian Light & Railway Company.
- Mobile, Ala., Mobile Street Railroad Company.
- New Haven, Conn., Winchester Avenue Railroad Company.
- New Orleans, La., New Orleans & Carrollton Railroad, Light & Power Company.
- New Orleans, La., New Orleans City Railway Company.
- Pittsburgh, Pa., Monongahela Street Railway Company.
- Port Huron, Mich., City Electric Railway Company.

MEMBERSHIP ACCORDING TO STATES

Arkansas .....	1	Kansas .....	3
Delaware .....	1	Tennessee .....	3
Louisiana .....	1	Virginia .....	3
Maryland .....	1	Wisconsin .....	3
New Hampshire .....	1	Georgia .....	4
Nebraska .....	1	Iowa .....	4
Oregon .....	1	Connecticut .....	5
Utah .....	1	Indiana .....	5
South Carolina .....	1	Missouri .....	5
Alabama .....	2	Texas .....	7
Florida .....	2	Michigan .....	8
Kentucky .....	2	New Jersey .....	9
Montana .....	2	Massachusetts .....	12
Mississippi .....	2	New York .....	17
Minnesota .....	2	Illinois .....	18
Maine .....	2	Ohio .....	19
Rhode Island .....	2	Pennsylvania .....	22
Washington .....	2	Mexico .....	1
West Virginia .....	2	Porto Rico .....	1
District of Columbia.....	2	Canada .....	5
California .....	3		
Colorado .....	3	Total .....	191

RECAPITULATION OF MEMBERSHIP

October 1, 1901 .....	179
New members since last meeting .....	35
	214
Withdrawn .....	21
Suspended .....	2
	23

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Mr. Bean, St. Joseph, Mich.—I move that the report be received and placed on the minutes.  
The motion was carried.

President Vreeland read letters of regret because of inability to attend the convention from Hon. H. C. Payne, Milwaukee; Robert McCullough, Chicago, and Charles S. Sargeant, Boston.

E. C. Foster, of Boston, presented the report of the committee on memorials, in which minutes were made of the demise of the following-named gentlemen: Walter V. Crouch, New Orleans, La.; Dell H. Goodrich, Omaha; J. Bannister Hall, Baltimore; C. C. Howell, Knoxville, and Winfield Scott Stotten, Colorado Springs.

President Vreeland.—The first technical paper is on the subject of the "Registration of Transfers," by C. D. Meneely. This is an important subject to the members of this association, as evidenced by the many letters I have received within the last year asking about our practice in New York regarding transfers and the opinion of the management of the company on this question.

In the absence of the author, H. A. Robinson, of New York, read the paper, which is printed in full elsewhere in this issue.

Mr. Root, New York.—I agree with Mr. Meneely partly when he says that the non-registration of the transfer does not eliminate entirely the cash value, but that the non-registration of transfers does eliminate this value to as great an extent as is possible; in other words, there still remains the possibility of the conductors giving away tickets to other conductors or to their friends, which still remains if you register the transfers. Eliminating that point, it seems to me the only thing to be decided in the question of this registration or non-registration is whether the cash value given a transfer by its registration balances the possibility of the difficulty which the secret service men have in detecting the non-registration of transfers. It has been our experience in New York, which is contrary, apparently, to that which Mr. Meneely has had in Brooklyn, that the non-registration of transfers does not make the conductors steal the cash fares—it has not that tendency, and, on the other hand, it does not in any way confuse our secret service men. This is perhaps peculiar to New York on account of the great number of short riders. With us our secret service men pay absolutely no attention to whether the number of passengers on the car corresponds with the number of passengers indicated on the register, for the reason that a car starting at any terminal of the road may take on ten passengers, five of whom will get off within a half-mile. This is more common in New York on account of the great number of short riders than in any other city in the country, probably, and for this reason more than any other we are very emphatic in our opinion that the non-registration of transfers is the best for our system; but personally I am of the opinion that for interurban and suburban roads, where they carry passengers for long distances and have few riders and check to a large extent the honesty of their conductors through a comparison of the number of passengers in the car with the number registered, the registration of transfers may be advisable.

Mr. Harrington, Camden, N. J.—We had been operating for some years without registering our transfers, and last summer we had reason to believe there might be some trouble in connection with it. We started to register the transfers last summer and did it for three months. Our secret service department showed such a wholesale trading in transfers that we stopped it.

H. M. Sloan, Chicago.—It seems to me if transfers are to be registered at all it should be done by a double register. My company was one of the first to put in the double register, and I was anxious about the outcome. I thought the conductors might register the cash fares on the transfer register, and the inspectors were given particular instructions to watch that point, which they could easily do on our road at the transfer points. I found to my astonishment that there was very little of it.

Mr. Connette, Syracuse, N. Y.—The conductors of the Syracuse Rapid Transit Railway Company are required to register transfer tickets. It occurs to me that a non-registration of the transfer ticket only eliminates the value of the ticket to the conductor. It does not prevent the conductor from giving away transfer tickets to people along the road or to agents at the points where they may be sold at a reduced price. The registration of transfers, of course, gives them the same value as a 5-cent fare, and we use, as a rule, a single register. The advantage in registering the transfers, as we have discovered, was that if there was any speculation on the part of the conductors it occurred to a great extent when the cars were crowded, and even when inspectors were on the cars it was a very difficult job for them to detect whether the passenger paid his fare with a transfer or with coin. The trading of transfers can, to a large extent, be detected without very much expense by proper clerical help. If there is any wholesale trading between the conductors, the conductors are bound to maintain the sequence of time in which the tickets are issued, and from time to time we check the transfer tickets that are turned in with a view to seeing whether or not the time limit on the tickets is



punched with regard to the sequence of time; then, if there is any trading between conductors, they must observe the sequence of time in which the tickets are issued, otherwise they can be detected when the tickets are checked up.

Mr. Beggs, Milwaukee.—I thoroughly believe in giving to the transfer and every other evidence of a right to ride on the cars all the value that is given to a nickel paid on the car. Under our system the transfers are deposited in boxes at the terminals of the lines every trip. The conductor does not keep them until the end of the day, but they are placed in envelopes and dropped at the terminal points. He likewise does not keep his pad of transfers, but turns it over to the man who takes his run when he exchanges cars. If transfers are to be registered, I believe it should be done upon a double register; that does not necessarily mean two registers in a car, but a double dial. In our own practice, some four years ago we adopted a double register, which showed the number of passengers carried on any particular trip on one disk. We have, after four years' experience, arranged for an exchange of registers which will show the two classes of fares gathered on each trip as well as the two totals. It is surprising to what extent the public notes the character of fare as indicated on the dial. We have some fifty transfer points on our system—fifty points at which transfers are given and to which they are given—consequently I do not believe it would be possible for any inspector to detect whether a passenger, particularly at the crowded hours, had paid his fare with a transfer or whether he had used one of the various types of tickets we have. As Mr. Root said, the system in New York is peculiar because of the large number of short-riding passengers, and the small amount, I presume, of anything but nickel fares. Our system, controlling all of the interurban lines centering in the city of Milwaukee, has ten or twelve possible commutation rate points, the tickets of which are given on our city lines to carry the passenger out into the suburbs, the tickets being sold to represent the commutation rate. Instead of two straight fares of 5 cents each, we may have a combination fare of 7½ cents, the passenger getting a transfer beyond the first fare point, consequently on one of the disks transfer tickets and 3-cent fares are shown by a light-colored disk and the 5-cent fare is represented by a red flag. In this way the public is to a certain extent a detective as to whether the conductor is ringing up the class of fare which has been paid. To our trainmen the transfer has all the value of a cash fare, and is treated as such. They never know when a particular line may be checked up, as the work may be done either in regular order, or, if there is some suspicion, messengers may bring in the transfers at various times during the day. I am thoroughly convinced in my own practice, for the ordinary road, outside of cities like New York, that it is necessary to give to the transfer the same value that attaches to a cash fare or a regular 5-cent ticket sold by many roads.

Mr. Tarkington, Council Bluffs, Ia.—We have also registered transfers. We cannot understand why any one should ride and present something for his fare which the conductor is not required to ring up. We require every passenger who crosses the bridge from Iowa into Nebraska over the Missouri River to pay 10 cents. If he has paid 5 cents on the local line and is given a transfer we want the conductor to ring up that transfer. If the passenger has a commutation book which entitles him to a ride for 5 cents we want the conductor to ring twice for that 5 cents if the passenger crosses the bridge. If the passenger has a ticket to a summer resort that costs 25 cents we require the conductor to ring twice for the coupon which carries the passenger over the bridge, or vice versa. We are thoroughly convinced that it is to our interest to have the conductors ring up for every class of ticket which they accept. We have put in a double register, and our experience has been that the passengers themselves take an interest in noticing what class of fare the conductor rings up. As the bells of the register have different tones, the men who do the checking are enabled to tell by the tone of the bell what class of fare is rung.

Mr. Connette.—I would inquire if the transfer has the same value as a 5-cent piece what advantage there is in ringing them up on separate registers or double registers; and even if the passengers do know that a conductor makes a mistake and rings a transfer for a 5-cent fare, or vice versa, what is the difference?

Mr. Sloan.—The line of demarcation as to whether it is better to register a transfer or not is so fine that it is oftentimes only a matter of opinion; but my conclusion, after having put the system in and used it for four or five years is that the transfer is registered very accurately and that a conductor very seldom collects a nickel and rings up a transfer. I watch the matter very closely. Sometimes conductors believe that the passenger is watching him. A register is a monitor. If the conductor supposed that nobody but an inspector was watching a register the peculations would be very much increased.

Colonel Heft, Meriden.—We are using now on our system a

duplex transfer which is printed in pads of 100, numbered consecutively, and these pads are charged to a conductor when he goes out on his run. He is required to punch the transfer, tear off the duplex, return the original in his envelope and pass the other to the passenger, punching in the time limit. When the passenger boards the car to which he is transferred the conductor of that car is required to punch the time that he received the transfer. We have been unable to find more than one way by which the conductor could successfully beat this transfer ticket and that would be at a transfer point where he had an understanding with the meeting conductor, who would punch up about the number of transfers he thinks the conductor would sell for cash fares on the other car. That is risky business, because the spotter on the car would detect it very quickly.

The meeting then adjourned until 3:15 p. m.

#### AFTERNOON SESSION

President Vreeland read a letter from Walton H. Holmes and a telegram from John M. Roach, expressing regret at their inability to attend the meetings, and announced that the paper on the "Steam Turbine" had been laid over until Friday, at the request of the writer and two or three gentlemen who desired to discuss it, but could not possibly be in attendance the first day.

President Vreeland.—The next regular paper will be presented by Mr. Root, of New York city, entitled "The Street Railway Mutual Benefit Association." You all have copies of it. I will ask Mr. Root, in a general way, to present some of his points without reading the whole paper, and then we will take it up for discussion.

Mr. Root gave a synopsis of the paper, which is presented in full elsewhere in this issue.

Mr. Connette.—The Mutual Benefit Association of the Syracuse Rapid Transit Company was organized in 1898. The admission fee is \$1. The monthly dues are 50 cents. The joining of the association is entirely voluntary on the part of the employee. The association has paid out in the last two years, according to the financial statement, in sick claims, \$1,945.50; in death claims, \$600, making a total of \$2,545.50. Upon Sept. 1 of this year the association had to its credit \$952.17, \$500 of which was invested so that it was getting an interest return. They also have as a special fund, as a contingent fund, for the purchase of such things as they may need to make their rooms more pleasant and agreeable, \$349.48 which they have secured by holding entertainments from time to time. They have rooms equipped with pool and card tables, and reading rooms, with all the weekly and daily periodicals, where the men can meet at times when they are not on duty and enjoy themselves. The association is entirely controlled by the employees, the board of trustees being composed of members of various departments of the system. Membership is limited to the employees and the heads of the departments and the officers of the company. We have a meeting once a month, including the employees, the heads of departments and the officers of the company. We not only discuss matters pertaining to the Mutual Benefit Association but from time to time we take up subjects of interest to the railway company, such as accidents, for instance.

We bring out what is in the minds of the employees themselves. You will find, or at least we have found, that this benefit association does not wholly result in the discussion of the sick and the afflicted and the bereaved families of the employees; but it results in a friendly relationship between the employees, the subordinate officers and the management of the company; and by reason of that close relationship, which is brought about by the intermingling at the meetings of this association, we learn to know each other better. We learn to feel an interest in each other's welfare, in the management of the property; and it has been impressed upon the employees that the success of the company does not depend entirely upon the management, but that every employee imparts his share to the success of the enterprise. It has been a means of bringing about a co-operative feeling between the management and its employees, and we feel that the mutual benefit association, so far as our company is concerned, is a great success. The fees are deducted each month by the auditor of the company when the men are paid off, and the amount is turned over to the treasurer of the association and deposited to its credit by him. All checks that are payable for sick and death benefits have to be approved by the general manager of the company before the checks can be paid by the bank, so that there is no possible way for any defalcation or for any diversion of the funds of the association. The board of trustees, which is composed of the employees of the company, are allowed a half day each month to assemble in the association rooms to discuss matters in connection with the management of this association, and to arrange for its monthly meetings. The secretary, who is one of the conductors on the road, is allowed two days each



month, on pay, for the purpose of arranging his books and making up his checks to pay death and sick benefits. Altogether we feel that the Mutual Benefit Association of the Syracuse Rapid Railway Transit Company is a success from every standpoint.

Mr. Haggerty, Michigan Traction Company.—I would like to ask whether in case an employee is a member of the association and leaves the company's service, he loses his membership?

Mr. Root.—As soon as a man severs his connection with the company he severs his connection with the association.

Mr. Haggerty.—Does he get any return for the money he has paid in?

Mr. Root.—No, sir.

President Vreeland.—The question asked by Mr. Haggerty is a question that has been asked very frequently. The Pennsylvania Railroad Company, which you know by their relief system, handles over \$300,000 a year, put every case in a question and answer form and their proposition is that it is exactly the same as if you buy a traveler's insurance policy for 25 cents to protect you twenty-four hours, and you get that twenty-four hours' protection. They have done their duty and you get your return for your money. The Pennsylvania has always conducted its system that way, and it has been sustained in the law. It is among the oldest and largest associations in the United States.

Mr. Beggs, Milwaukee.—I would like to ask Mr. Root what policy the Metropolitan Company pursues as to the care of the funds of this pension expenditure, which naturally will grow greater as time goes on. I would like to ask, as a matter of finance, whether the Metropolitan Company has made an appropriation to its pension fund the revenue from which will meet these pension demands as they accrue. Or whether it has made an annual charge against operation. I ask this because I am myself interested at the present time in formulating the rules of a similar pension fund. I would like furthermore to know what the experience of Mr. Root is with the Metropolitan Company, and likewise Mr. Connette, of Syracuse, as to men laying off a day or so in order to obtain sick benefits. Many years ago I gave a great deal of time to a number of beneficial organizations in the State of Pennsylvania, among which was the Odd Fellows and Knights of Pythias and kindred organizations. I believe they would have been wrecked ultimately had it not been for the principal adopted by us about twenty years ago whereby a man had to be incapacitated from work a certain length of time before the weekly sick benefits began to accrue to him. I was wondering whether in these organizations any experience of that kind had been encountered; whether there were, as there are in nearly every body of men, a certain number who feel they must get square with the organizations to which they are paying funds; whether or not it has shown any tendency to have men lay off a day or so each month or at periodical times, in order to know that they had a certain amount which they would receive anyhow. I would like, furthermore, to ask what is the rule when a man is injured in the company's service. We, in our organization, usually take those cases and deal with each individually. If incapacitated by injury in the proper performance of the company's service, we usually make the employee an allowance of his wages.

Mr. Root.—The directors of the Metropolitan Company have authorized the officials to go as far as \$50,000 to pay this pension allowance. There is a provision in the regulations themselves which permits the board of trustees at any time when they consider the payments under this system excessive, to make a revision of the ratio of payments, so that they are not bound by anything they do to-day a year from now. In fact, when they consider it to be excessive they can revise the ratio at which the employees who retire under this pension system are paid.

Mr. Beggs.—You have struck just the point I wanted to get at. Aren't you running them somewhat upon the plan of a great number of these assessment associations that have been formed throughout the United States in the last two years? In the early stages they were well able to meet the accounts payable, but as the number of members increase, as they will twenty-five years from now, and an effort is made to reduce the amount that you have paid to employees before that time, will that not be a source of dissatisfaction and a feeling of injustice, that if they had been able to retire a few years earlier they would have received 40 per cent, whereas you may be compelled to reduce the amount that they will receive to 30 per cent or some other per cent, or something much lower than their fellows receive? That likewise raises the point, in my mind, whether it would not be well to exact from them, let the amount be very small but some amount, to be paid into this permanent pension fund to be invested, the revenue from which would provide a guarantee for the payment of these amounts in the years after your men have grown old in your service. That has been the complaint against many organizations that have been attempted in this country with very good intentions

but which were found to be impossible to carry along. I raised this warning twenty years ago in orders where we were compelled to increase the amount exacted from members. I am throwing out a number of suggestions, and some I would not have thought of myself, without Mr. Root's suggestion, because I take it there are a great number of companies throughout the country that are feeling the results that were felt by these companies. It seems important that before it goes too far it should be well considered. There should be rules standardized to govern the employees and to standardize these beneficiaries of the companies for the benefit of their employees.

Mr. Root.—I do not consider that the danger of overrunning the allowance is apt to arise, because I believe if employees get to that condition where the payments shall be greater than the amount that we have now appropriated the benefits the company has received through length of service will be proportionately greater, and that the company can in that same proportion fairly pay them at the same rate as they do now. That was merely put in as precaution, because this thing has not been worked out. We are, I think, the pioneers in the street railway world. We have got a good deal of precedent from Germany and England, where they have done a great deal of this pension work, and they have found there that where the superannuated body contributed themselves, it has not been as satisfactory as where the government has taken the thing entirely in its own charge. This is a matter, however, which only time can work out. We have not the experience, but we are going into it now and making such regulations as we deem proper. When these things arise ten or fifteen or twenty years from now, as Mr. Beggs suggests, we will have to work it out then. Regarding the suggestion about the men attempting to defraud this association through laying off when they are not sick, our regulations provide that any employee may receive \$90 in one year, that is at the rate of a dollar a day, but his benefits do not begin until he has been sick for seven days, unless he is injured in the service of the company. If in the service of the company it begins from the day on which he was injured. There can be very little question about a man when he is injured in the service of the company. The association's physician is, of course, very reliable, and upon his judgment we place entire confidence. There is no one who receives any benefits from the association unless he makes a prompt application to the secretary and is examined by the association's physician. Even if a member elects to have his own physician he is not paid any benefits from the association until the association's physician himself makes an examination and reports to the secretary that he is entitled to this benefit for which he has made a claim.

Mr. Beggs.—I do not think the seven-day clause appears in your paper.

Mr. Root.—No; I do not think it is.

Mr. Connette.—As far as our association is concerned, the by-laws specifically state that the benefits do not commence until a member has been disabled for seven days. Furthermore, the association employs its own physician, and when a member is sick that physician must wait upon the member, and the association pays the doctor bill.

Mr. Tarkington, Council Bluffs.—The laws of the State of Iowa are very stringent in regard to assessment insurance companies. An organization has been formed in Iowa along the line suggested by Mr. Beggs. Those assessment companies which have a very rapid growth and have no reserve fund are now confronted with a possibility of a great deal of trouble by not having anything to pay claims with. The new company provides a reserve fund from the beginning. If you join at the age of twenty-five, and die at the age of 34, your expectancy of life would be based upon the tables of the old line insurance companies and the estate would be required to pay the assessments to the limit of your expectancy which, perhaps, might be fifty-five years; so that out of the amount of money which the estate would receive the company would deduct the amount of the assessment from thirty-four to fifty-five years, and lay it aside as a reserve fund, the accumulation of which, it is believed, will take care of this.

Mr. Root.—Mr. President, I intended to say that the board of directors authorized the officials to expend \$50,000 in any one year in payment of these allowances, and that will be considered as an operating charge and will be charged up just as if these men were working in their regular duties.

Colonel Heft.—I understand that it does not become a charge against the operating expenses of the corporation until such time as you are required to make payment.

Mr. Root.—That is correct.

#### THE ST. LOUIS EXPOSITION

Mr. Lang, of Toledo, offered the following resolution:

"Whereas, The American Street Railway Association, in con-



vention assembled, has learned with much gratification of the extensive plans that have been made by the Louisiana Purchase Exposition for the proper presentation at the exposition of the American street railway interests.

"Resolved, That this association extends to the Transportation and Electricity Departments of this international exposition assurances of its hearty interest in the work they have undertaken, and its hope that the plans will be brought to a full realization."

The resolution was adopted.

Mr. Lang also asked that the convention give five or ten minutes to Professor Goldsborough to speak upon the work of the exposition. The invitation was extended, and Professor Goldsborough delivered a brief address, describing the aims of the exposition and asking the co-operation of the members.

President Vreeland.—Mr. Parker has prepared a paper on the "Transportation of Light Express and Parcel Delivery," which he will outline. (The paper is presented in full elsewhere.)

Mr. Parker said the paper which he had prepared was really a digest of the conditions existing in Detroit, and he explained the salient features of his contribution.

Mr. Connette.—I would inquire if the original franchise contemplated the hauling of freight through the streets of Detroit, and if not, what conditions did the city impose when it granted this right?

Mr. Parker.—The original franchise, as I understand it, did not allow the Detroit United Railway to carry freight through the streets of the city but an ordinance was passed granting that privilege. The original franchise did not specify anything, if I remember correctly, about carrying freight, but the electric express and freight system was started, and while it was not satisfactory at the beginning, the City Council passed an ordinance prohibiting us from loading or unloading on the streets, compelling us to put up a depot of our own, and still further taxing us \$1 per car per round trip, whether the car was loaded or empty.

Mr. Wasson, Cleveland.—I would ask whether the business increases month by month.

Mr. Parker.—It is only a year ago this month, as I remember, when the express service was started. The business shows some increase.

Mr. Crafts.—I would ask if any material increase in the business of the passenger service, due to carrying packages and light express matters, is noticeable?

Mr. Parker.—Yes, there is; it always has a tendency to increase the business.

Mr. Crafts.—You think it gives you a marked advantage in carrying the package business, that is, that you gain in your passenger service?

Mr. Parker.—Yes, sir.

President Vreeland.—I invited the president and general manager of the express company in New York city in the annexed district to be here, with some statistics which would answer many questions regarding this subject, but some local business conditions have made it impossible for him to come. Under the conditions of operation that we have there the company has nothing to do with the express service. The express company has a contract with the street railway company for operating on its tracks, and the business is only limited by the facilities which the express company has been able to establish at the present time. In other words, they have all the time at least 30 per cent more business offered them than they have had facilities to take care of. No matter how fast they have increased the facilities the business has increased in larger ratio. As far as the question of the division between the actual cost and receipts, based upon percentages—in the original operation of the system, including the operation of fifteen or twenty cars for the first six months to establish the business, the average of the whole would more than pay for the operation of the cars, and the interest on the investment is paid by the express company, so that answers your question as far as we are concerned. There has been no expense entailed on our company in the operation of this service, even in its infancy.

#### MASTER MECHANICS TO ORGANIZE

Secretary Pennington read the following letter: "Will you kindly announce that there will be a meeting of all master mechanics at the power station A, at 3 p. m. Thursday. This meeting is called for the purpose of organizing an association of master mechanics of the different street railway companies." The letter was signed by Thomas Farmer, superintendent of motive power, Detroit United Railway.

Mr. Beggs.—I presume this invitation includes the superintendents of maintenance of way and all others connected with the mechanical department as well as master mechanics. I desire

to impress upon the presidents and general managers who may be present the importance of urging on their mechanical staff an attendance, as requested by Mr. Farmer. I think there are some here who recollect that at the last two meetings I have suggested the very thing which is contemplated in this communication, a matter which is of great importance to our industries, namely, an organization of the master mechanics of the companies. We all know how important it has been in steam railroad practice. We have had an illustration ourselves of what has been accomplished by the Accountants' Association, those in charge of that branch of our business. I believe that even greater good will accrue to the several companies by the organization and the annual getting together of those charged with the design, with the construction, and with the maintenance of the mechanical elements entering into our business.

President Vreeland.—Seven topics for papers and discussions were arranged by the executive committee, and we have gone through three of them, with all the rest of our association business to-day, and it leaves four papers for Friday. It is getting rather late, and is hardly worth while this afternoon for us to take up another paper.

As your presiding officer, I want to thank you for your attendance and the interest you have taken in the association meeting to-day. The discussions that go with these papers and the work of the association, can only be an advantage to the members of the association if the purposes of the executive committee in arranging for meetings are carried out. The association work, club work, etc., in connection with the railroad interests with which I have been connected for the last twenty years, has indicated the value of these associations to the industries we represent, but much good cannot be gotten out of the meetings of an association, especially this association, unless there is an interest taken in it by the members from all parts of the country, and more particularly in interurban railroad questions at the present time.

Following out the lines of Mr. Beggs' suggestion, I may mention that I have been for four years president of the New York Railroad Club, which takes in all of the transportation, mechanical and operating men of the whole Eastern section of the country, the Middle States, and, in fact, portions of the entire country. That club has a membership of over 1200. The average attendance of each monthly meeting last year was over 200, and went as high, in some instances, as 450, men coming from Chicago, St. Louis, Boston, and numerous points in the East to attend these meetings. The discussions which we have had during the last year have had an important influence in connection with transportation and mechanical problems. Suppose a superintendent of motive power is considering the question of compound locomotives, for example. He has had no experience with them and has no data bearing on the subject, and is brought face to face with the problem of what he shall do in regard to the matter. It has probably been suggested to him by his general manager that he attend a meeting of the club, and he gets up and asks if any member of the association will give him the benefit of his experience with compound engines. We have in our club the engineers of the New York Central, the New Jersey Central, the New Haven road and the Erie road, who are always ready to give every member of the club the benefit of their experience, and the superintendent of motive power in question goes home the next day equipped to talk to his manager. This information makes him a better man in the eyes of his management and shows what is going on. He not only gets the information in a general way, but gets actual data from these men. He probably would not have any other means of getting it so easily as at a meeting of the New York Railroad Club.

As far as your association work is concerned, the young men who are connected with the various street railways in the country cannot overestimate the value of this association to them in their work and in bringing themselves into prominence. Any young man who reads a paper at one of these meetings which shows intelligence and ability to analyze and good judgment is bringing himself before every man who is connected with prominent street railroad systems of the United States. I take this opportunity, as president of the association this year, to call these special things to your attention, in the hope of creating an interest in the minds of young men in this particular work. In my twenty-five years of railroad experience I have been able to place a great many men in steam and street railroads, and the first knowledge I had of the capabilities or possibilities of the ability of these men was in listening to them before the American Society of Railroad Superintendents, the American Railway Association, the New York Railway Club, the American Street Railway Association or the New York State Street Railway Association. You may work earnestly in your own city and feel that you are somebody there and attracting some attention, but the United States is large and there is a good



deal going on in it. It is only by bringing yourself prominently before a large association that the young men may hope to gain a reputation among the managers of the country, at least in the majority of cases.

#### NOMINATING COMMITTEE

President Vreeland.—I will appoint as the committee to nominate officers for the ensuing year the following gentlemen: R. S. Goff, Fall River, Mass.; N. F. Heft, Meriden, Conn.; R. McCulloch, Chicago; C. Goodrich, Minneapolis, and D. B. Dyer, Augusta.

The meeting then adjourned until Friday morning at 10 o'clock.

#### Newly-Elected Officers

At Friday's meeting, the nominating committee made its report and the following officers were elected: President, J. C. Hutchins, of Detroit; first vice-president, W. Caryl Ely, of Buffalo; second vice-president, W. K. Schoopf, of Cincinnati; third vice-president, P. S. Arkwright, of Atlanta; secretary and treasurer, T. C. Penington, of Chicago. The executive committee consists of the officers and H. H. Vreeland, of New York; R. T. Laffin, of Worcester; A. Radel, of Bridgeport; W. H. Read, of Salt Lake City, and W. J. Hield, of Minneapolis.

The association received an invitation from Chattanooga to hold its meeting there next year, but it was determined to leave this subject open, and it was referred to the executive committee. The committee was instructed to visit Chattanooga and find out whether adequate facilities could be had for holding the meeting and exhibition in that city.

#### The Visiting Delegates

The attendance at the opening session of the Detroit convention was the largest in the history of the organization. The visiting delegates from all parts of the country were received by the local committees and provision was made for their accommodation and entertainment. The Eastern delegation arrived on Tuesday morning, and included representatives from New York, Pennsylvania and the New England States, in a special train over the New York Central. The New York section of this train comprised a Pullman buffet, smoking and drawing-room, dining car and several sleeping cars. It carried the largest delegation that ever left New York for a Western convention of the American Street Railway Association. The New England delegates came over the Boston & Albany and met the New York train at Albany, but owing to the fact that the New York train was already very heavy it was found necessary to proceed to Detroit in two sections. The accommodations were very satisfactory, and every provision was made for the comfort and convenience of the travelers.

#### The Wabash Special from Chicago

A jolly party of eighty-one boarded the Wabash special convention train for Detroit from Chicago at 1:30 p. m., Oct. 7. N. C. Keeran, the popular assistant passenger agent of the Wabash Railroad, was in charge and made every one feel comfortably at home. The run from Chicago to Detroit was made in the quick time of seven hours. A fine lunch and dinner were served on the dining car, and the time passed agreeably and quickly. The Christensen Engineering Company, through Mr. Eldredge, distributed boxes of candy to the ladies of the party. The following were on the train:

H. B. Abbott, STREET RAILWAY JOURNAL, Chicago.  
Dennis Aper, president Coal Belt Electric Railroad, Marion, Ill.  
J. M. Atkinson, Chicago.  
R. G. Arnold, treasurer Arnold Electric Power Station Company, Chicago.  
G. H. Atkin, Electric Storage Battery Company, Chicago.  
J. H. Brett, general manager Electrical Installation Company, Chicago.  
T. P. Bailey and wife, General Electric Company, Chicago.  
F. L. Brown and wife, auditor Omaha & Council Bluffs Railway & Bridge Company.  
Max A. Berg, Porter & Berg, Chicago.  
F. N. Baylies, superintendent track and overhead, Rockford & Interurban Railway Company.

B. C. Beckman, Standard Paint Company, Chicago.  
A. W. Ballard, General Electric Company, Los Angeles.  
R. N. Baylies, president Rockford & Interurban Railway Company.  
George Cutter and wife, Chicago.  
George W. Conover, Chicago.  
A. B. Conover, Jr., J. A. Roebling's Sons Company, Chicago.  
Charles Lawton Case, Chicago.  
Robert F. Carr, vice-president Dearborn Drug & Chemical Works, Chicago.  
E. L. Draffen, Gould Storage Battery Company, Chicago.  
C. N. Duffy, secretary and auditor Chicago City Railway.  
A. H. Charles Dalley, Under Feed Stoker Company of America, Chicago.  
John E. Eldred, Jr., Christensen Engineering Company, Milwaukee.  
H. T. Edgar, manager El Paso (Tex.) Electric Railway Company.  
D. J. Evans, Lorain Steel Company.  
J. E. Gavitt, Federal Supply Company, Chicago.  
Thomas G. Gricr, American Circular Loom Company, Chicago.  
E. S. Grace, Wheeler Condenser & Engineering Company, Chicago.  
C. G. Goodrich, vice-president Twin City Rapid Transit Company, Minneapolis.  
R. M. Heskett, secretary Knox Engineering Company, Chicago.  
Edgar H. Hammond, American Electrical Works, Chicago.  
Charles L. Hull, general superintendent Chicago General Railway Company.  
E. J. Hunt, Aurora, Elgin & Chicago Railway, Chicago.  
J. C. James, Christensen Engineering Company, Milwaukee.  
A. L. Kalas, Q. & C. Company, Chicago.  
Charles D. Knight, Christensen Engineering Company, Milwaukee.  
E. L. Kirk, general manager Sioux City Traction Company.  
George W. Knox and wife, Chicago.  
W. E. Keily, editor Western Electrician, Chicago.  
R. B. Kent, manager Atlas Railway Supply Company, Chicago.  
N. C. Keeran, Wabash Railroad.  
F. S. Kenfield, Street Railway Review, Chicago.  
James W. Lyons, Allis-Chalmers Company, Chicago.  
A. S. Littlefield, president North American Railway Construction Company, Chicago.  
C. E. Lund, civil engineer, Chicago City Railway.  
L. E. Myers, Chicago.  
J. G. McMichael and wife, Atlas Railway Supply Company, Chicago.  
Richard McCulloch, assistant general manager Chicago City Railway.  
W. R. Mason, Garrigus Mechanical Boiler Cleaners, Chicago.  
E. R. Mason, Porter & Berg, Chicago.  
E. S. Nethercut and wife, chief engineer Paige Iron Works, Chicago.  
Michael O'Brien, master mechanic Chicago City Railway.  
H. K. Parsons, Pennsylvania Steel Company, Chicago.  
Albert M. Patten, Topeka Railway Company.  
C. D. Porterfield, Atlas Railway Supply Company.  
F. L. Perry, Western Electrician.  
Fred A. Poor, Weber Railway Joint Manufacturing Company, Chicago.  
W. S. Patterson, master mechanic Consolidated Railway & Power Company, Salt Lake City.  
J. W. Porter, Porter & Berg, Chicago.  
W. P. Read, general superintendent Consolidated Railway & Power Company, Salt Lake City.  
G. F. Rooke, Pana, Ill.  
Donald Rawstron, superintendent Allen & Morrison Brake-Shoe & Manufacturing Company, Chicago.  
J. C. Shainwald, Western sales manager Standard Paint Company, Chicago.  
G. W. Spear and wife, Dearborn Drug & Chemical Works, Chicago.  
W. B. Tarkington and wife, general superintendent Omaha & Council Bluffs Railway & Bridge Company.  
C. K. Thomas, American Electrician, Chicago.  
William Walmsley and wife, superintendent South Chicago City Railway Company, South Chicago.  
Herbert Warren, general manager Duluth-Superior Traction Company.  
A. C. Willis, Street Railway Review, Chicago.  
R. A. Whelan, A. Booth & Company, Chicago.  
F. M. Zimmerman and wife, superintendent Elgin, Aurora & Southern Traction Company, Aurora, Ill.



## PAPERS READ AT WEDNESDAY'S SESSION

### Street Railway Mutual Benefit Associations

BY OREN ROOT, JR.,

Assistant General Manager Interurban Street Railway Company, New York.

While the purpose of this paper is to discuss mutual benefit and assessment insurance associations as applicable to street railway employees, it will be well, before treating of that special subject, to say a word on the general topic of mutual benefit associations and assessment insurance, the main features of which must be embodied in any plan intended to benefit the class we have under consideration.

The history of assessment insurance, when extended beyond a single and continually recruited class, is not encouraging, and insurance practice demonstrates it to be, at its best, more expensive and uncertain than ordinary corporate insurance by strong companies.

Assessment insurance, however, when applied to particular crafts, which in the very nature of things must be continually recruited, has shown phenomenal results, especially when accumulated surplus has been invested for the benefit of the insured and not dissipated in executive salaries.

I take a street surface railroad in a growing community to be in the indicated class where assessment insurance can be, so far as the beneficiaries are concerned, profitably applied, as is evidenced by a case in point—the Metropolitan Street Railway Association of New York, with whose workings I am familiar and concerning which some details may be of interest.

This association was organized in the spring of 1897 by the employees of the company at their own suggestion, and was so planned that any employee between the ages of 21 and 45, who had been in the service of the company three months, was eligible for membership upon the payment of an initiation fee of \$1 and dues of 50 cents per month.

In return for these payments the association guarantees to its members:

- 1st. In case of sickness the payment of \$1 a day for a period not exceeding ninety days in any one year.
- 2d. In case of death the payment of \$300 to any beneficiary named by the insured.
- 3d. The free service of a physician who devotes his entire time to the members of the association.
- 4th. The use of reading rooms, which are supplied with weekly and monthly papers and magazines, technical journals and a library consisting of over 2000 volumes.
- 5th. Use of ten pool tables, for which 1 cent per cue is charged.
- 6th. Free monthly lectures and entertainments during the winter months at the association rooms.
- 7th. Eligibility for pension under the pension regulations of the Metropolitan Street Railway Company.

The association started with thirty members, and from that time it has steadily grown until to-day it has a membership of over 4500.

The association is operated with absolutely no expense beyond the stipulated salary of a physician, as all of the officers of the association are officers of the company and their services to the association are given gratuitously. The association rooms are given rent free by the company; the library and pool tables were donations from individual stockholders and directors.

This plan, which I believe with slight modifications is applicable to almost any railroad property of considerable size, has worked out, in its financial details, some surprising results; for instance, we found that the amount of the tax, 50 cents per month, is a trifle more than is necessary to pay sick benefits and supply a life insurance of \$300, but it is so small, in each individual case, as to make an exact adjustment both inconvenient and impossible, and hence there has grown up in this association a practice of investing the surplus in securities of the property on which the members are employed. And so we have in this association the unique feature of every member contributing monthly, in an infinitesimal way it is true, to a proprietary interest in the property he helps to operate.

Before going further into the details of the workings of the association and discussing the beneficent results it has accomplished for the men and owners of the property, I must, in order to be thoroughly understood, say a few words about certain human agencies, account of which cannot be taken in any written rules of practice.

The success of the Metropolitan Street Railway Association is primarily due, not so much to its sound economic features as to

the personal relationship established and maintained between the responsible head of the railway company and its employees.

All of us who have to do with masses of men are aware of the fact that it is not always easy to induce them to do that thing which is obviously for their betterment, whereas experience shows that when their sympathies are stirred and their feelings appealed to they can be and have been induced to the most suicidal courses.

The phenomenal success of the Metropolitan Street Railway Association is due primarily to an intelligent, sympathetic relation fostered and encouraged between the manager and his men who early realized that they were under the discipline of a man who was in thorough accord with them as a class and whose life experiences had been along the very lines they themselves were traveling.

The fusing influence of this relationship, which is as active today as at any time since the formation of the association, has welded the membership into a body, the tremendous force of whose loyalty has been frequently tested in critical emergencies.

The impetus thus given to this association is great enough to assure its permanence beyond the accidental loss of the influence of the individual who is responsible for its present energy.

I have said this much in order that I may not be misunderstood as imagining so vain a thing as that the mere formulation of a beneficent plan is sufficient to secure its success. In the application of social benefits, as in everything else of human devising, some vivid personal influence is necessary to success, and this success, believe me, cannot be achieved by mere formal approbation or endorsement. If you want to make a concern of this kind go you must give it your time and thought, and above all you must be convinced at bottom that it is the right thing to do and that it will succeed.

If I might presume, before proceeding to further discuss the results of associations, to make a suggestion to those contemplating an experiment in this direction, it would be to avoid patronizing the men. Many good things are spoiled by being overmagnified, and it is my experience that among American and Americanized working men there is a resentment of official patronage. The quickening influence of the idea that you and your men are engaged on the same job but in different capacities, when once fixed, is surprising. It would be well, too, not to lose sight of the fact that the benefits arising from helping your men to take care of themselves are not all one-sided.

This thought brings me to a consideration of the benefits arising from associations.

These benefits may be divided into two classes: First, those derived by the employees, and second, those derived by the employer. There is nothing which appeals more strongly to the large majority of people, certainly to those who have worked for a living, than those things which yield a direct or indirect financial return. No one can fail to see the great benefit which the distribution of from \$20,000 to \$25,000 a year means to the men who are working for wages, and without reserves to draw upon in cases of sickness or other disaster. The services of a physician, the free use of a library, the opportunity to play pool or billiards in a well-lighted and well-ventilated room at a nominal cost, are indirect financial benefits as well as pleasures which are assuredly appreciated by any body of intelligent workmen, such as are employed by street railway companies. There is a benefit not so apparent but equally real in the creation and strengthening of a common spirit—"esprit de corps;" a realization of common interest in a work of many details but of common end. The gain is the greater as all employees are included, from the helper to the manager. The perfection of army organization is where the soldiers have entire confidence in the leader, and the leader absolute trust in the soldiers. When something of the strength of all goes into the work of each, tasks are more easily done; there is more careful attention to details, a common interest taking hold beyond the working hours gives heart to labor, when the time comes. A street railway touches the public at numberless points; the work of its employees is at each of these points; work with something of heart in it is easier and better than mere hand and head work.

When one remembers that in such a scheme as I suggest there is no demoralizing taint of official charity and that the men are gradually realizing that in truth they are doing all the helpful work with their own money, he will realize that the moral uplift far exceeds any of the material advantages.

The benefits of the second class from these associations—those to the employer or stockholder—are not so tangible as those received by the employee, but, nevertheless, exist to a large extent and are apparent to those who are in close touch with the work-



ings of such associations and their bearing upon the management of the company's affairs. It may be difficult to demonstrate to an outsider, or to put your finger upon particular cases where the use of the library or the association rooms or the pool tables accrues to the advantage of the company. It is unquestionably true in my mind, however, that all of these things create a certain sentiment in the mind of the employee favorable to his employers, and which in times of labor troubles, when the misguided and unscrupulous agitator attempts to cause dissatisfaction, crystallizes into a feeling of loyalty toward the company which could not have been gained in any other way.

At the monthly meetings of the Metropolitan Association, which are held in the association rooms and at which men of prominence and officers of the company speak to the men, the employer, as represented by the officials of the company, is brought into a personal relation with his employees, not as employer and employee, but as man and man, and in this way there is established a personal relation between them and a feeling of friendliness which certainly, in a large company like the Metropolitan, is not possible in any other way. I believe, as illustrated in the late trouble in Ohio which a large manufacturing company had with its men, that it is possible to overdo this kind of work. When you begin to wet-nurse and patronize working men you are offending them and making trouble. The idea is to teach them to help themselves.

As an illustration of what opportunity for amusement means to working men, one of the pool rooms, located at Fiftieth Street and Seventh Avenue, takes in on an average of \$45 per week. Several games of pool, at a cent a cue, must be played in the course of a week to make the receipts \$45.

There are, to my mind, three dominant problems in the handling of a street railway property. First, is the relation of the management to its employees; second, its relation to the public and the press; and third, its relation to the State and city officials. Of these, the relation of the management to its employees is of the greatest importance. Fair, considerate treatment of men's natural rights, the establishment of friendly and harmonious relations between it and its employees, is a railway company's most valuable asset. The great successes in the street railway world have been made by ability to successfully handle men.

However unjust it may be to the responsible head of any street railway property, how often has it been the case that the faithful and efficient work of years has been practically forgotten and nullified by differences which have arisen with the company's employees. The fact that a manager has been able to operate his road at a less cost than ever before and has brought the standard of equipment and the roadbed and the entire physical condition of the property to a higher level, is apt to be overlooked by the company's directors and stockholders in case serious labor difficulties arise. The stockholders of a property not only look to the management for a return upon their investment, but values once established they look for their stability and permanence. To assure this stability and permanence, moral forces must be set to work and carefully fostered until they gradually become traditional with the concomitant result of loyalty and efficiency of service.

I believe that the interest the employees take in a financial investment of 50 cents a month in an association and the enjoyment of the opportunities afforded by the libraries, pool rooms and entertainments, etc., together with the personal contact between the employees and management, bring about a relation between them similar to that which the millions deposited in the savings banks bring about between citizens and their government. I think, with rare exceptions, that there will be found among savings bank depositors but few anarchists, socialists, or those dissatisfied with existing conditions. The millions of savings bank depositors are among the strongest influences toward the proper government of the country, and I believe that the financial and other interests of employees in a street railway company through their association are equally strong influences for good.

We are living in an age in which no industry had made more rapid strides than the street railway. What was considered ten years ago a liberal policy on the part of street railway companies toward their employees would be considered penurious to-day. The methods of ten years ago cannot be used effectively at the present time.

The relation of capital and labor, as represented in street railway properties, has undergone a radical change in favor of the condition of labor. The betterment of labor conditions has been just and fair, and, in my opinion, any street railway management will do well to recognize it and meet it with liberality. There is no better way of keeping abreast of this movement than the encouragement and fostering of mutual benefit associations.

There are many things that are necessary to establish proper relations between the management of a company and its em-

ployees, but I believe that the most potent factor of all is the benefits received by the employees through a voluntary association and the relations which the social side of such an association establishes between the management and its men.

## Registration of Transfers

BY C. D. MENEELY

Secretary and Treasurer Brooklyn Heights Railroad Company

Regarding the registration of transfers there is wide diversity of opinion in the street railway world. While there is a large contingent which advocates the registration of transfers, there is a numerous body which strenuously opposes it, and many who have studied the problem have been unable to reach a definite conclusion concerning it.

No mathematical solution of the problem has yet been offered, nor will I attempt any, but will here briefly outline for discussion the chief arguments for and against the registration of transfers with a view to determining, if possible, the weight of evidence from which to draw a conclusion.

Those who advocate the non-registration of transfers place great stress upon the contention that this course divests the transfer of its cash value, and focuses the attention of the conductor on the collection and registration of the real revenue, namely, the cash fares.

On the other hand, the advocates of registration are equally insistent that the non-registration of the transfer does not eliminate its cash value, except to the extent of preventing trading between conductors, and the consequent substitution of transfers for cash fares.

First, does non-registration divest the transfer of its cash value?

Undoubtedly, the fact that the transfers of other lines cannot be turned in at a cash value prevents the conductor from obtaining fraudulently, either directly or through an intermediary, the transfers of intersecting and transferring lines, and converting the transfers so obtained to his own dishonest gain. Nevertheless, while the non-registered transfer may not be used by the conductor in this particular manner, its value has not been one whit diminished to the traveling public, to whom the conductor may, within limits determined by the accounting, either sell or give away rides on the company's cars, which would otherwise go to swell its earnings; for no accounting method has yet been devised which will accurately check the issue of transfers on a large system without undue expense.

Moreover, the non-registration of transfers renders so easy the appropriation of cash fares by conductors that many conductors, who would otherwise be indisposed to take the risk of open stealing, become dishonest. This has been forcibly illustrated on the Brooklyn Rapid Transit Company's system. In the summer of 1900, during the months of May, June and July, conductors were instructed to discontinue the registration of transfers. On August 1 of the same year the registration of transfers was resumed, and, coincidentally therewith, a large number of supposedly reliable conductors, long in the service, were detected stealing the company's revenue. The increase in the number of old conductors, previously possessing excellent records, who were at that time discovered appropriating fares was so marked as to lead to the conclusion that during the preceding three months the ease and safety with which the company's revenue was plundered had tempted these men to steal, and that upon the resumption of the registration of transfers, the exercise of the habit then formed proved too strong to be deterred by the added chances of detection.

Second, as to the registration of transfers.

It will be conceded, I think, by all practical street railway men that the ideal method of obtaining revenue, assuming one uniform rate of fare and a sure method of preventing transfer trading, would be to register all fares and transfers upon a single register.

Under the assumption noted the advantages of such a method are obvious. The query naturally arises, do these advantages more than compensate for the loss occasioned by transfer trading? On the Brooklyn Rapid Transit system we think that they do.

By taking transfers out of the hands of conductors and placing transfer agents at points where cars from the same depot intersect and transfer, thereby preventing conductors from trading directly with each other and compelling the use of an intermediary, we endeavor to keep this evil in check and supplement it by the vigilant watchfulness of our inspectors and secret service operators. Our system of stationing uniformed register inspectors between all principal terminal points and the first transfer intersection practically protects the revenue between the outer transfer and terminal points, and enables us to concentrate our secret ser-



vice in the central portion of the system to locate register shorts and detect transfer trading.

Further to limit the risk of trading to the day of issue we introduced and, I believe, were the first to use a daily dated transfer ticket, which has since been adopted by many of the principal systems in the country.

Doubtless, a further check upon transfer trading is provided by the turning in of transfers by trips and the subsequent checking of line exchanges by the accounting department.

Were it not, however, for the lottery law and a certain demoralizing effect that distribution of property by chance has upon the community by inculcating the gambling spirit, it would be possible to offer such inducements to street railway patrons as would absolutely check the cash fares received and the transfers issued. Such a governing inducement would be, to offer cash prizes of a large amount monthly, which would yet form in the aggregate only a small fraction of the amount which is now diverted from the company's revenue by conductors.

In addition to carrying a pad of transfers the conductors would be provided with a pad of numbered cash-fare receipts, each one of which receipts would bear on its face an injunction to hold until the end of the month, when the bearer might be entitled to any one of a number of prizes, determined impartially by a drawing; the prizes consisting of a capital sum, together with lesser sums graded down to a large number of small premiums, which would distribute the cash prizes as far as possible.

The operation of the above plan would involve the issue of a transfer *only* for a cash fare. In practice it would work as follows:

A passenger, boarding a car, would be asked by the conductor, upon payment of fare, if he wished a transfer. Upon receiving an affirmative reply, the conductor would issue a numbered transfer to the passenger from his pad, and upon turning in his pad would have to produce one cash fare for each transfer ticket detached from his pad.

All passengers who desire transfers are sure to get them, as they are needed for a ride on the transferring line, and conductors would, therefore, not be able to again issue detached transfers.

On the other hand, if a passenger, upon paying his fare, stated that he did not wish a transfer, it would become the conductor's duty to detach a cash fare receipt and hand it to the passenger. For every cash fare receipt so detached the conductor would also be held accountable for one cash fare.

The inducement for a passenger to take a cash fare receipt would be even stronger than in the case of a transfer ticket, as it might mean a large sum of money in case the number of the ticket drew a prize, and when a passenger, ignorant of its possible value, refused to accept his fare receipt, others would eagerly seek its possession.

Assuming that both transfer tickets and cash fare receipts were taken by passengers for all fares paid, the stubs returned by the conductors would accurately indicate the number of fares collected and would ensure the turning in to the treasury of all the revenue collected on the cars.

Several marked advantages would follow from the adoption of this plan, as for example, the reduction in the number of transfers used, since many persons, who would ordinarily take a transfer for a short ride after a long one, would prefer the chance offered by the cash fare receipt and decline the transfer, which carried with it no chance for a prize.

Moreover, the number of short-riders would, probably, be increased to an extent that would realize a larger sum than the aggregate of the prizes offered, and again, the trading of transfer tickets between conductors would be rendered absolutely impracticable, for each transfer detached from a conductor's pad would mean a corresponding cash fare to be turned into the company's treasury, and he would, therefore, be debarred from substituting transfers from other lines for cash fares.

While, according to the opinion of counsel, the operation of this plan would not violate the letter of the lottery law, inasmuch as no consideration is asked or received for the cash prizes distributed, yet the decisions under the federal lottery law, which absolutely prohibit the circulation of notices of drawings through the mails, in the opinion of counsel renders the operation of the plan inadvisable.

While, perhaps, the adoption of this plan might stimulate a speculative spirit in the community, it is unfortunate from the point of view of street railway companies that some similar scheme for the absolute protection of revenue could not be devised that would not contravene State or Federal laws.

So long as street railways continue to operate there will be more or less dishonesty on the part of conductors, which no mechanical appliances can wholly prevent; but while the careful choosing of material; fair and considerate treatment and the encouragement of a spirit of honesty and integrity will always be the best safeguards

for the protection of revenue; at the same time the study of improved methods of protecting the revenue by mechanical, or other means, should not be neglected, for, though perhaps an uncomplimentary commentary on human nature, it is none the less true, that many men remain honest only because of the fear of detection, and to such men it should be our object to minimize the opportunity by all means in our power.

## Electric Express and Package Delivery

BY GEORGE PARKER,

General Express and Passenger Agent, Detroit United Railway Company

The establishment of the electric service is a boon to interurban towns, to which lines are being rapidly extended in all directions within a radius of from 75 miles to 100 miles, and in a great many cases reaching towns and villages which have never heretofore enjoyed a railroad connection, or at the best, in a roundabout way entailing great delay and almost prohibitive expense. Electric service has also made next-door neighbors of communities between which, before its establishment, even wagon communication was not satisfactory or feasible, so that the electric service may justly be regarded as the chief factor in suburban progress, though not yet a decade old.

To the lay mind, the express and parcel business of the electric line or system would appear to be an additional and profitable use of the franchise, involving no additional expense beyond suitable rolling stock and the necessary train crew, but my experience has been that the operating expense tends to become greater than that of the passenger service, for the latter calls for no local stations or agents, the company assuming no responsibility before the passenger has been sighted, and after he alights, while it does become an insurer of freight or express from the moment of the giving of a receipt until it has taken one, thus necessitating a salaried agent and suitable depot facilities, stationery, etc.

In addition to the foregoing handicap to a profitable operation of the express service, I find myself confronted in Detroit by an ordinance which prohibits the use of trailers, and, worse still, which levies a tax of \$1 per car per round trip, regardless of whether the car is empty or loaded. This tax is a radical departure from the good old days, when the town or its public-spirited citizens gladly raised a bonus to encourage a railroad connection, and then considered themselves highly favored.

The management of a system should show a proper appreciation of the importance of the express department and its bearing on the continued and increasing prosperity of the system in the building up of an interurban patronage, for it seems a necessary conclusion that the out-of-town dwellers will avail themselves of the mail-order and telephone facilities of the large city stores because of the convenient and speedy electric express car delivery to their doors, and the habit once formed of sending their shipments or orders via the electric express car must eventually result in more frequent trips on passenger cars for personal and wider selections of their requirements.

But it must not be assumed that all branches of the system, or even all towns and villages on a branch, warrant the establishment of an electric express service. The population, situation, products and future of each individual place, and the competition of existing steam roads, if any; also the old-established express companies, must be carefully weighed, or that terrible ledger must be faced at the end of the year.

### ROUTING ORDER

Form 77

2512

Detroit United Railway,  
RAPID RAILWAY

-----190-----

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**Until further Advised Please**  
**Ship All My Orders Via**  
**ELECTRIC EXPRESS**

### SAMPLE OF A ROUTING ORDER

To secure and hold the favor of the public I have found it necessary to insist upon and maintain high-class service, which means all the little details of careful handling, prompt transit and courteous treatment. This naturally calls for the co-operation of the entire management, especially in the operating department, and the personal attention of the general express agent and his assist-



ant at all hours in all kinds of weather and the ability to avert disaster when least expected. But he must not at any time neglect his office, to which all matters pertaining to the handling of express should be referred, and from which all instructions as to rates, claims, complaints, etc., should issue. The best results can only be obtained by the employment of a traveling express agent, whose special duties should be the soliciting of business and the securing of routing orders from consignees on shippers, which routing orders are instructions to shippers to forward all shipments in connection with the electric express.

The traveling express agent should have an open car for all complaints, diplomacy and a knack of handling people so he can always retain their friendship. In addition to the above, the traveling express agent should have the oversight of the local agents who are usually subject to frequent lapses by reason of inexperience. He should, moreover, be capable of acting as trainmaster in the proper distribution of rolling stock, especially in case his road or system should be so unfortunate as to be in the vicinity of the sugar-beet business, or in close proximity to freight of that character.

Where the system includes leased or other lines, in addition to its own, a central freight or express depot and a joint agent are absolutely necessary as a measure of economy and the proper handling of the business. At Detroit, the most important thing to contend with has been the expense of handling, which, prior to the consolidation of the electric lines, was cared for through three separate depots. For instance, express from the Rapid Railway system was handled through one depot; that from the Detroit & Pontiac, Detroit & Wyandotte, Detroit & Northwestern and the Detroit, Rochester, Romeo & Lake Orion roads through another depot, and that express for the Detroit, Ypsilanti, Ann Arbor & Jackson Railway through yet another. This entailed an expense for each depot of an agent and staff, which till only recently has been changed and the stations consolidated in one large joint depot, now located on the corner of Fifth and Congress streets, in close proximity to depots of steam roads and navigation companies, thus also decreasing cartage expense where interchange is necessary.

The building is 45 ft. x 195 ft. On one side is the team track or driveway, where freight is received and delivered. On the east side of the shed there are double tracks with accommodations for four cars on each track, with ample room for switching. The interior of the shed is clear of all posts, thus giving ample floor space necessary for promptly receiving, sorting and loading the express and freight. There is also cold storage for the protection of perishable goods during the winter months.

The joint express agent who would have charge of a depot of this kind must of necessity be an experienced railroad man, also an accountant of no mean ability, as the duties covered are manifold, from the handling of a truck on a pinch, in the depot, to the settlement of his station accounts, which latter job becomes complicated at times from various reasons, such as change in rates, errors of agents, careless checking and handling of freight, etc.

It may be asked to what class of freight or express should an electric service be confined? In this part of the country the electric express service may be said to have its origin in the transportation of milk, which was originally handled in the small compartment on passenger cars, reserved for baggage, but which has now grown to such proportions as to tax daily the capacity of entire cars.

In the handling of milk our experience has been that the best results are obtained by the issuing of milk tickets, which are consecutively numbered and taken into account through the cashier's office. These tickets resemble our ordinary shipping tag; they are perforated in the middle, the lower portion being detached by the conductor carrying the cans when filled, and the other portion being left on to pass the empty cans on return trip. This ticket, as per sample, you will notice, shows the point of shipment, shipper, destination and to whom consigned; this in-

formation being on both portions of ticket, eliminates the possibility of errors in delivery of cans when either filled or empty. These milk tickets are charged for at so much per ticket, according to distance the milk is to be carried, and by their use assures protection from loss through bad accounts.

It may be added that the conductor, when accepting shipments of milk, notes carefully that there is a ticket for each can. After the shipment is loaded he detaches the lower portion and en-

**Form 158**

2764 Detroit United Railway. Pro. No. ....  
Car No. .... Init. ....  
WAY-BILL of Express Forwarded from.....To.....190..  
Conductor ..... Time ..... Via..... W. B. No.....

Con-signor	Consignee and Destination	No Pks	Description of Express	Weight Rates	Charges	Ad-vances	Pre-paid	Total to Collect

**Form No. 248**

Detroit United Railway. G. E. A. Pro. No. ....  
..... Station ..... 190.. Agent's Pro. No.....  
Report of Express over, short, damaged, or wrongly consigned.

From .....Way-Bill No.....Date.....Car No.....Initial.....  
Transferred by .....From Car...to Car...at.....  
Condition as noted at transfer.....  
Was Car left or Express unloaded from Car?.....  
2109

Received from Car No...Date...190	State whether Over, Short or Damaged. Give Full Particulars.
Conductor.....	
<b>Consignee, Marks and Destination</b>	<b>ARTICLES BILLED</b>
Are you short, and on what billing?.....	
Have you any record of express over?.....	
Was express properly and securely stowed?.....	
NOTE—Agents must make a separate report of each consignment, and send one each to Billing Station and General Express Agent by first passenger train.	
Report for General Express Agent to be filled out with copying ink, but do not copy.	
....., Agent.	

**FORWARDING AGENT ANSWER FOLLOWING QUESTIONS**

- By whom and in what condition loaded?.....
- By what Car?.....Conductor.....Forwarded?.....
- For what other Stations did you load similar freight?.....
- What other Cars loading at same time?.....
- Destination of same?.....
- If Over express is from you, furnish billing and advise.....
- Are you short, and on what billing?.....
- Have you any record of express over?.....
- Was express properly and securely stowed?.....

closes the same to the auditor at the end of his trip with regular way bill showing full particulars of cans loaded, ticket numbers, consignees' names, etc., who in turn checks over the number of tickets enclosed, and if any irregularities, promptly advises the general express agent, who takes the matter up with the conductor for explanation.

When delivering the full cans on arrival at destination, the upper portion of ticket is left on the full can, which must be on the can when it is to be returned for refilling, otherwise the conductor should not accept it until a ticket is provided. These instructions are necessary on the return empties, otherwise there is possibility of your service being imposed upon through unscrupulous milk dealers sending their milk in by wagon or steam road and leaving your line to carry the empties back free of charge.

The question may be asked, what is done with the last portion of the ticket? This portion is left on the can until the conductor starts to distribute cans along the line, when this portion is detached and also returned to the auditor at the end of trip, and handled in the same manner as the first portion.

Tapping a great deal of territory that has hitherto had no railroad connection has necessarily thrust upon the electric express service at Detroit a class of freight that ought not to be carried in equipment of that character, and which cannot be discriminated against, the rates charged being governed by railroad tariffs for

Form No. 240 No. 3446 2266 No. 3446

IF FILLED forward to

Northville 10

IF EMPTY return to

Shipper must fill out this ticket in full before forwarding can

VOID IF DETACHED.

Form No 240  
Detroit United Railway  
Good for transportation of one can milk, said to contain 10 gals, or less

110

George W. Parker,  
Gen'l Ex. & Pass. Agent.

Northville 10



similar class of freight, and are in some cases insufficient, and, therefore, unsatisfactory from the revenue standpoint.

It may be interesting to know how the express is handled on the system in this vicinity, so the following is a brief outline: For use in this service a full set of blanks has been designed and prepared with care. The shipper fills in the receipt, showing the date, from whom received, to whom consigned, destination, and a complete list of articles making up the shipment. This receipt is made in duplicate, a carbon copy being taken. The Detroit United Railway receives the property "subject to the conditions on the back hereof," which are in the form usually adopted by common carriers.

When express is received at the depot it is checked in on this shipping bill or that part of the form marked "duplicate." If the shipment agrees with the shipping bill the original is receipted by the checker signing agent's name with the checker's initials. This receipt is retained by the shipper and the duplicate is kept by the company and the shipment rechecked into the car, thus giving the

Form 184

**EXPRESS ORDER**  
Detroit United Railway.

2523

.....190  
Received from .....

By DETROIT UNITED RAILWAY, the property described below, in apparent good order, except as noted (contents and condition of contents of packages unknown), marked, consigned and destined as indicated below, which said Company agrees to carry to the said destination, if on its road, otherwise to deliver to another carrier on the route to said destination.

Marks, Consignees and Destination	DESCRIPTION OF ARTICLES	WEIGHT
		Subject to Correction

.....Agent

**Detroit United Railway**

Express Received Account ..... Station, ..... Week of ..... 190.

WAY-BILL Date No.	Car No.	From	Weight	PREPAID EXPRESS			D. U. Ry. Charges	Advance Charges	Total of Way-Bill	COR'CTS.		Consignee (Initials)	Pro No.	Total of Each Expense Bill	Reference Folio	Uncollected	Remarks
				D. U.	Due O. R.	Ref.				Dr.	Cr.						

FIG. 2

Statement of Express on Hand at ..... Station, ..... 190.

When Way-Bill was Received	Date of Way-Bill	No.	Station from which Express was Billed	Local Charges	Advanced Charges	TOTAL		From Whom Due	Description of Goods	Why Uncollected
						Prepaid	Collect			

FIG. 4

Report of Express Forwarded and Received at ..... Station for Month of ..... 190.

EXPRESS RECEIVED				STATIONS	EXPRESS FORWARDED			
WEIGHT	Express Charges	Advance Charges	Prepaid Charges		WEIGHT	Express Charges	Advance Charges	Prepaid Charges

FIG. 5

company a double check on each shipment. Any exceptions as to shipment being in bad order, etc., are noted on these shipping bills, thus enabling the company in case of claim to know the exact condition the goods were in when received and forwarded.

After goods have been received and loaded into express cars they are then billed out on a way-bill, this form being printed in three sizes—quarter sheet, half sheet and full sheet—the latter being 12½ ins. x 16 ins. The way-bill is the same as express and railroad way-bills, forwarding point, destination, date of shipment and way-bill number showing in proper places. The way-bill numbers are arrived at by commencing with number one the first of each month, and numbering them consecutively until the end of the month. This way-bill number is used as reference in all correspondence relating to any particular matter coming up in regard to any shipment covered by this particular way-bill. The facts shown on the way-bill are designated by the headings of the various columns, which includes consignor, consignee, number of packages, description, weight, rate, charges, advances, amount prepaid and total to collect.

The rate is taken from the company's regular express tariff, which is governed by the rules of the official classification.

The rate on the different commodities handled are according to the value, dimensions and weight of each article. For example, shipment of glassware, furniture or any articles liable to damage from breakage are given a much higher rating than articles that are packed in such a manner as to occupy less space in the express car and which will weigh more than the articles first mentioned.

After this way-bill is complete, it is then copied in a tissue book one extra tissue being taken. These extra copies are forwarded to the auditor daily, who checks the weights, rates and extensions, and files the tissue copy for future reference.

On arrival of the shipment at its destination the receiving agent checks the various shipments billed to his station from the original way-bill, noting exceptions, if there be any, as to condition of ex-

Form 184

**EXPRESS RECEIPT**  
Detroit United Railway.

190

The DETROIT UNITED RAILWAY will receive and carry the property marked, consigned and destined as indicated below to the said destination, if on its road, otherwise will deliver to another carrier on the route to said destination.

Marks, Consignees and Destination	DESCRIPTION OF ARTICLES	WEIGHT
		Subject to Correction

.....Consignor

SHIPPING RECEIPT

press when received from car. In case of there being any articles damaged, over or short, the receiving agent makes report of the fact on a special form, filling in the information called for in the various blank spaces. The form is made out in duplicate, the original being sent to the forwarding agent for his report, on that portion of this form designated "forwarding agent answer following questions." This enables the forwarding agent to advise the receiving agent to correct, in case of error in billing, and what course to pursue in case of overs and shorts. This form is 9 ins. x 8¼ ins. and is shown reduced in Fig. 1.

The duplicate of this form is sent to the general express and passenger agents' office, where it is recorded in what is known as "the over, short and damaged register." These records remain open until the matter has been finally settled, thereby making it impossible for either the forwarding or receiving agent to allow the matter to drag along without receiving the prompt attention due such matters.



Form No. 248  
**Detroit United Railway.** G. E. A. Pro. No.....  
 Station .....190.. Agent's Pro. No.....  
 Report of Express over, short, damaged, or wrongly consigned.  
 From .....Way-Bill No.....Date.....Car No.....Initial.....  
 Transferred by .....From Car...to Car...at.....  
 Condition as noted at transfer.....  
 Was Car left or Express unloaded from Car?.....  
 Received from Car No...Date....190  
 Conductor..... State whether Over, Short or Damaged. Give Full Particulars  

Consignee, Marks and Destination	ARTICLES BILLED

 Agent

**FORWARDING AGENT ANSWER FOLLOWING QUESTIONS**

By whom and in what condition loaded?.....  
 By what Car?.....Conductor.....Forwarded?  
 For what other Station did you load similar freight?.....  
 What other Cars loading at same time?.....  
 Destination of same?.....  
 If OVER express is from you, furnish billing and advice.....  
 Are you short, and on what billing?.....  
 Have you any record of express over?.....  
 Was express properly and securely stowed?.....  
 NOTE.—Agents must make a separate report of each consignment, and send one each to Billing Station and General Express Agent by first passenger train.  
 Report by General Express Agent to be filled out with copying ink, but do not copy.  
 Agent

FIG. 1

The way-bill is then entered by receiving agent in his "express received" book. The pages of this book are 16½ ins. by 22 ins., and the column headings are shown in Fig. 2.

The keeping of this book correctly is the key to what is known as a station balance, as the various amounts shown under the headings of "weight, prepaid, express, advance charges, total of way-bill," etc., must agree with the corresponding columns of the "abstract of way-bills received." This form is, as its name designates, an abstract or summary of the totals of all way-bills received, and is made up for periods ending 7th, 14th, 21st and last of each month, and a like abstract of "way-bills forwarded" is made up on a similar form.

The abstracts of way-bills forwarded is compiled from the tissue book copies, and shows date, way-bill number, weight, freight, advance, prepaid.

After the particulars have been entered in the express received book an "expense bill," shown reduced in Fig. 3 (original size 9 ins. x 6 ins.), is made out, a carbon copy being taken. When the shipment is delivered the consignee's receipt is taken on the duplicate and the agent receipts for charges on the original. Collections are made on delivery unless the consignee has a regularly authorized ledger account.

When money has been collected by the receiving agent he makes an entry of it in his cash book. Agents make daily remittances of money collected, holding in the cash drawer only a small amount for change.

At designated times a balance sheet, form No. 166, is made out by the agent; the particulars of the debits and credits are shown opposite the various numbers on this sheet, and are arrived at from the totals of the different forms and books already described.

Form No. 166 is a double sheet 13½ ins. x 8¾ ins. when folded once. The balance sheet is on the first page. The second and third pages show statements of express on hand, forwarded and received, arranged under the heads in Figs. 4 and 5. On the fourth page is a statement of the remittances for the month.

This system for the express service on electric lines radiating from Detroit was adopted with a view to handling express and all accounts relating thereto in as simple, practical and systematic a manner as possible.

Baggage is no longer carried in and out of Detroit on regular passenger cars, but follows on the next express car at a uniform rate of 25 cents per piece not exceeding 150 lbs.. Where the actual weight exceeds the latter mentioned minimum, the first-class rate named in the express tariff is applied from and to the point to which baggage is going at actual weight. This arrangement was necessary on account of the additional expense

Form No. 180 **Detroit United Railway.**  
 Consignee ..... Station, .....190..  
 Pro .....  
 Destination ....., Via .....

To Detroit United Railway Dr.				
For Charges on Express				
No. Pkgs.	ARTICLES AND MARKS	WEIGHT	RATE	CHARGES
From .....				
Date .....				
W. B. ....				
Car No .....				
Initials .....				
Delivered the above property	Received payment for the Company.			
	Make check Payable to	Det. United Ry.		
		Back Chge	Total,	
Check Clerk .....		Agent .....		

Original paid expense bills should accompany all claims for overcharge, loss or damage.  
FIG. 3

involved in the handling of baggage and the low passenger rates in effect, which would not allow of a free checking system.

It is still an open question whether compartment cars could not handle both baggage and passengers during certain light hours of the day, thus giving baggage early preference and more suitable care.

Under our present arrangement of checking baggage a passenger can have his baggage checked from any point on our system at which we have agents, which arrangement, if the passenger is coming to Detroit, includes delivery to all hotels, steamboat landings, railroad depots and residences, is working out admirably in connection with the Detroit Omnibus Line Company. It might be added that this company (D. O. L. Company) has representatives to meet all trains and boats, so that the passenger coming to Detroit can, by turning over his checks to one of these representatives, be relieved of all responsibility in connection with his baggage in case he desires to avail himself of the frequent electric service.

There is a future in the parcel feature of the business, if properly conducted, which problem we have not yet been able to solve to our satisfaction, owing in a measure to the peculiar conditions existing at this point. Under our present arrangement we are accepting parcels weighing from 1 lb. to 50 lbs. for a minimum charge of 15 cents, going to points within a radius of 40 miles, and a charge of 25 cents when going to points beyond 40 miles. This charge, it must be understood, is for the electric express service only, with a slight additional charge for cartage in case the consignee wishes package delivered.

**Another Toledo Interurban Road**

The Toledo & Indiana Railway Company, which was incorporated in June, 1901, to build and operate an electric railway from Toledo to Bryan, Ohio, a distance of 55 miles, has already made considerable progress in the construction work. The officers are: Charles P. Griffin, president; George G. Metzger, vice-president and treasurer, and C. H. Masters, secretary. The road is being constructed by the Toledo & Indiana Construction Company, whose officers are: Charles P. Griffin, president; E. B. Smith, vice-president; C. H. Masters, secretary, and George B. Boone, treasurer.

At the present time 23 miles of grade has been completed, about 6 miles of poles erected, and by Dec. 1 it is expected to have the 23 miles from Toledo city limits to Delta, Ohio, completed and in operation. For the present a temporary arrangement for power will be made, as the power house has not been completed. The roadbed is being constructed along the most approved steam railroad plans and in every way is first-class, the maximum grade allowed being 1 per cent, and a 70-lb. rail being used throughout. All bridges are of steel with abutments of concrete, and all arches are of concrete.

Private right of way two rods wide is followed absolutely, and all construction is being done with the view of changing to a double track in the future, and consequently the track now being laid is at one side with the pole line located so as to be between tracks when doubled.

The country passed through is very thickly settled, and the towns along the line are all first-class and flourishing.



After leaving Holland, Ohio, the road parallels, with right of way immediately adjoining, the air line division of the Lake Shore & Michigan Southern Railroad, and so continues to parallel it the remaining distance to Bryan, except where it has been found advisable to leave this course a sufficient distance to pass through the center of towns.

The civil engineering on this road is being done under the supervision of Riggs & Sherman, consulting engineers, and the electrical and mechanical engineering by Mark H. Griffin.

### Metropolitan Street Railway Association

The sixth anniversary of the Metropolitan Street Railway Association was observed at the Metropolitan Opera House on Saturday evening, Oct. 4, when the usual entertainment was provided for the members of the organization and friends who are interested in the work of the association. The objects and methods of this organization are already familiar to the readers of this journal, and they will not be surprised, therefore, to learn of the enthusiasm that was shown on this occasion, as well as the general interest that was excited by this illustration of the harmonious relations that exist between the Metropolitan Street Railway Company and its employees, who comprise the members of the association. On Saturday evening the seating capacity of the Metropolitan Opera House was tested long before the hour appointed for the beginning of the entertainment, and it was found necessary to close the doors of the theater sometime before the performance began, owing to the crush of those who desired admittance. There was a large number of friends of the management present on invitation, but the body of the house was occupied by the members of the organization and their families, and all thoroughly enjoyed the entertainment. Mr. Vreeland opened the proceedings with a speech, in which he referred to the work of the association and its influence upon the pleasant relations existing between the company and its employees. The lesson he drew from this example is worthy of the closest study on the part of workmen as well as large employers of labor. The key note to the situation is unquestionably the fair and considerate treatment of employees by the company, by which it is enabled to enlist co-operation and enthusiastic support in the work in which they are engaged. Mr. Vreeland's remarks form an instructive contribution on the labor question, and are particularly timely. He said in part:

"In my management of the Metropolitan I have been backed by authority greater than is given to any man in a similar position in the United States, for I have the entire confidence of the company, and am allowed to manage its affairs as I see fit. This fact has helped me greatly in my cherished ambition of forming an organization such as we have among ourselves now. Twenty years ago, when I was doing the same sort of work you are at to-day, I promised myself that some day I would do this thing to better the conditions of those whose lines are cast in not altogether pleasant places.

"You know that any one of you can see the head of this company when you have any complaint. It will always be the same. And when you men say you want another head for the company, on that day I shall be ready to resign.

"This institution which you have organized and supported with your own money and by your individual efforts has attracted universal attention, and has taught an eloquent lesson. It originated with no other thought than the benefit of its individual members, and its growth and vitality have shown what can be done by a class of men who give exclusive attention to their own affairs.

"Since the existence of this association questions have arisen more than once involving the relations of capital and labor, and they have been settled amicably and to the perfect satisfaction of both parties to the issue, and without any of the wasteful expense that seems to be unavoidable with others.

"These frictions with us have left no wounds behind them. In fact, they have done more than anything else to foster and develop a mutual confidence between management and men that is as unique in its way as this organization itself. It has been proven to the men employed on this property that 'the open door' of the management was not a mere name, but an actual fact. That we have been able, without wasteful loss, to adjust our differences becomes very significant when one considers what the history of the last twenty years shows, that contests between capital and labor have cost the men the appalling sum of \$257,863,487, and that employers in the same time, as the result of strikes, lost \$122,731,121.

"It staggers imagination to consider what might have been wrought by the application of this princely sum, wasted so

wantonly, if it had been applied to such ends as those to which we apply our little mite.

"In my opinion this great waste is the result of the failure of mutual knowledge between employers and their men. As this necessary knowledge can only come from acquaintanceship, and as associations like this promote and foster intercourse, it is to be regretted that other workers do not view the situation as we do. How can men, whether they are capitalists or laborers, expect to understand each other if they are not acquainted? Without acquaintanceship there must be as much ignorant suspicion on one side as on the other. Nothing inspires more fear and distrust than half understood and wholly unseen things.

"I am no prophet, nor have I at hand data to prove the assertion, but it seems to me that if all these difficulties—and there were 22,793 of them—had been left to the employers and employees, without outside interference, they would have been adjusted without this horrible waste, and would have tended to a narrowing instead of a widening of the breach between the men and their employers.

"However, I am not here to point the way to others, but merely to call your attention, and the attention of our visitors, to what we have done as an organization in this particular community, and as an educating influence to others elsewhere who are giving attention to such problems as ours.

"It is now ten years since I first made your acquaintance. There were not so many of us then, but we have increased in numbers, and our field of operation has widened very much in that time. But, great as has been our labor, I have never lost sight of the ambition I had when in the ranks, to do for my fellows, if God helped me on, what I felt was for their advancement and comfort.

"Engrossed as I have been in the yearly growing responsibilities of my office, I have kept steadily before me the idea that I would, if life was spared to me, leave to those in whose company I had labored some helpful institution, that others coming after might foster and improve, and when, three months ago, the pension system went into operation I felt a satisfaction than which no greater can come to any man. Our little company was then placed in a position beyond the hazard of any accident, and, as in construction and operation, we have set the standard for the rest of the world, so we have on the human side, without due consideration of which no great corporation can be said to be perfectly safe.

"I congratulate you on the fact that during all these years there has been a steady growth of esprit de corps, and that your loyalty and the even justice of the corporation that employs you have been the subject of universal comment.

"All told, there are more than 17,000 of us in this community, and as it is true that every one of us helps to support at least five persons, it will be seen that in the line of this greatest metropolis on the Western hemisphere, we are no insignificant factor."

At the conclusion of this speech, which was received with enthusiasm by the men, an excellent programme was presented, and was thoroughly enjoyed. The entertainment was the most successful in the history of this organization.

### Reorganization of the Northern Ohio Traction Company

Official announcement is made of the reorganization plan of the Northern Ohio Traction Company, reference to which has previously been made in these columns. The new company is to be incorporated with \$7,500,000 capital stock, and the same amount in bonds. The present preferred stockholders will receive in exchange for their stock a 5 per cent thirty-year gold bond and 100 per cent of the new stock. The common stockholders will receive one-half in 4 per cent thirty-year gold bonds and 200 per cent of the same stock as is given to the preferred holders, there being but one kind of stock. The stock will be used as follows:

STOCK	
To preferred stockholders 100 per cent .....	\$1,000,000
To common stockholders 200 per cent .....	5,000,000
Bonus on \$500,000 bonds .....	500,000
Balance in treasury .....	1,000,000
<hr/>	
Total stock .....	\$7,500,000
BONDS	
To retire preferred stock 100 per cent .....	\$1,000,000
To retire common stock 50 per cent .....	1,250,000
To be sold for improvements and extension .....	500,000
Held in escrow to retire bonds .....	3,000,000
Held in treasury .....	1,750,000
<hr/>	
Total bonds .....	\$7,500,000



A conservative estimate by a Cleveland broker places the value of 90 per cent on the new 5 per cent bonds, and 75 per cent on the 4 per cent bonds, at which prices they would yield nearly 5 $\frac{3}{4}$  per cent, and considering that the present company earned net for the year ending Aug. 31, 1902, \$310,837; that the fixed charges would only be increased \$70,000; and that increased earnings would follow the extensions and betterments, it is figured that the new common stock would be easily worth \$25 or \$30 per share. It is claimed that the new stock will earn 1 per cent from the start, and it would not be surprising to see it earn 3 per cent inside of five years.

These statements are interesting in view of the fact that in the early part of this year, shortly after the Everett-Moore embarrassment, the common stock of the Northern Ohio Traction Company dropped to 25, and the preferred to about 40. It is also interesting to note that at the time the bankers' committee sought to liquidate the common stock at 35 there were no takers. Today Messrs. Everett, Moore and their friends own over 15,000 shares of the common stock, and something over 1000 shares of the preferred stock which is being sold to-day on a falling market at 70 and 97 respectively.

### New York Central's Plans

The proposed electrical equipment of the New York Central trains entering New York and the changes necessary in the tunnel for this improvement will be the subject of a public hearing at the next meeting of the Murray Hill local board. The position of the railroad management is set forth in a letter from President Newman, in which he says:

"It has been the understanding with the Mayor that the city will only co-operate with the railroad company in making the necessary changes upon condition that the railroad company discontinue, as soon as practicable, the use of steam as a motive power through the tunnel in Park Avenue. The use of steam as a motive power cannot be actually discontinued until (1) legislative authority has been obtained, and (2) the necessary power house and equipment are constructed and acquired. Anticipating that at the next session of the Legislature the necessary authority to use electric power instead of steam may be given the company has acquired control of substantially all the private property required to make enlargement of the yards and for the widening of Park Avenue, and is ready to commence this work if the end sought by the petition can be obtained and the necessary municipal action taken. It is the present intention of the railroad company to discontinue the use of steam as a motive power for all of its trains through the Park Avenue tunnel and to operate such trains by electricity—probably as far as Croton on the Hudson division, and White Plains on the Harlem division. The date upon which operation by electricity can be commenced will be determined (the necessary authority being obtained) upon the time required for the construction and equipment of power houses. With the same desire the company is ready, if it has the co-operation of the city, as prayed for in the petition, to enter into contracts for the power houses required for operation by electricity and take other steps for expediting the work as soon as the necessary details can be perfected."

### The Hearing on the Use of Fenders, Jacks and Power Brakes in Massachusetts

The Railroad Commissioners of Massachusetts gave a hearing Sept. 29, in accordance with their announcement, on the three resolves of the General Court, directing them to investigate and report as to the advisability of passing laws to compel all street railway companies operating in the State to equip their cars with jack screws and power brakes, and to determine whether there are more practicable types of fenders now in the market than those in general use. The electric railway managers were largely represented at the hearing, but it was continued in each case, so far as their side was concerned, until some date to be arranged later.

The jack proposition, which was introduced in the last Legislature by a New Bedford representative, was advocated by no one. The power brake resolution was favored by two citizens, and Chairman Jackson, of the Railroad Board, improved the opportunity to remind the auditors that in its report on the accident at Marlboro last summer the belief was declared that all double truck cars running at high speed on single tracks should be equipped with power brakes. Several parties exploiting fenders were present to explain the good points of the various devices, but no new voice was heard pleading for them on the part of the public. However, Chairman Jackson announced that this was not at all conclusive of a lack of popular demand, and stated that the Railroad Commissioners desire to examine all new devices. The

desire is to examine devices in operation if possible, but models will receive attention. Records concerning the working of devices in the hands of the companies would be helpful, Mr. Jackson said.

### A Discussion on Electric Railways by a Waterworks Association

At a meeting of the Central States Waterworks Association, held at Indianapolis, Sept. 25, an address on electrolysis was delivered by L. C. Anderson, consulting electrical engineer, of Franklin, Ohio. These remarks were followed by a discussion, in which various members of the association participated. As these proceedings give an idea of the way in which the representatives of the water companies regard the subject, a report of the proceedings is given below:

Mr. Anderson: Electrolysis is the name given to that mechanical process which consists in the dissolution of a chemical compound by the passage of an electric current through such compound. As applied to water pipes, this takes place during the passage of the electric current from the water pipe into the soil. The soil contains salts in solution. These salts vary in their character, but they nearly always contain sodium chloride from the street washings. A certain amount of refuse is necessarily on the street at all times, so that the sub-soil in which the pipes are buried necessarily becomes highly saturated with salts in solution. These salts are decomposed by the passage of the current from the pipe into and through the soil, and the acid constituent of that process of decomposition attacks the iron, or the lead or copper, as the case may be, in the pipe. The metal passes into solution, leaving in its place, in the case of cast-iron pipe, a carbon in the form of graphite, which is not soluble in the ordinary acids or salts. This process is continuing, and does continue in proportion to the amount of current which leaves the pipe, until the pipe is so injured that the pressure of the water in the pipe causes it to burst. This current referred to as being on the pipe comes from the operation of street railways. The rails of the street railway in the single-trolley system are in direct contact with the soil. As you all know, in operating the single-trolley system, the current passes from the car into the rails, and is supposed to pass along the rails back to the power house. Part of it does sometimes. But, inasmuch as the rails are in direct contact with the earth, part of the current which passes into the rails must necessarily leave them and pass into the earth and into any underground metallic structures that may be buried in the earth. This current does no injury to the pipe where it enters, but it does injure the pipe where it leaves the pipe and passes into any other conductor. As the current passes along the pipe it is found that a part of it passes around the joints of the cast-iron mains, on account of the high resistance of the joints. In measuring the resistance of the joints we find a great variation; some joints have a comparatively low resistance, some very high. I measured the resistance of one joint in a 6-in. pipe last week, and found it had a resistance of 40,000 times that of 1 ft. of a 6-in. cast-iron water main. On account of this high resistance, part of the current passing along the pipe is shunted around the joint. Wherever this occurs the pipe is injured so that you have two kinds of damage; one of them where the current leaves the piping system to pass to the power house or to the return feeders from the power house, and the other where the current passes around the joints. Of course, the current passes over approximately all of the pipes in the piping system, not only the pipes under the rails, but frequently those which are far distant from the rails. With the exception of the dead ends of the pipes, it is safe to say that the current passes over all the pipes contained in the piping system. This damage to the joints of which I have spoken is not confined at all to the positive area, or to the part of the system where the current is leaving to return to the rails; it is found throughout the whole piping system, negative as well as positive area. It is generally greatest at or near the point where the pipes are changing from negative to positive.

In examining pipe in the various cities we find that what I have given as a theoretical expectation does actually take place. I have myself examined pipes in a number of cities, and in every place where the single-trolley system is used I found serious damage to the piping system. I am not a lawyer, and am not going to say anything as to the legal aspect of the question particularly, but it occurs to me from my experience I may be able to give you a little bit of advice regarding the proper methods of procedure in this matter. In the first place, I would advise you to not become in any manner a party to any agreement with any railway company which anticipates the use of the piping system as a part of its electric return system. By that I mean I would not become a party to any agreement which provides for the use



of a single-trolley system of any kind or nature. Wherever you have the power to dictate or influence the provisions of any franchise ordinance I would suggest and urge that provision be made which will protect the water plant from any damage from the operation of the street railway. I would further urge that this be not attempted in a manner to dictate the system to be employed or adopted by the railroad company, but that the requirements be made with a view alone to the results to be accomplished. It frequently happens that a railway company is applying for a franchise or renewal of its franchise, and it seems to me that that is the psychological movement for the water interests to protect themselves against this damage.

Mr. McK. Landon: You would not be a party to any agreement?

Mr. Anderson: I should be a party to no agreement providing for the bonding of the joints, or bonding of pipes, or insulation of the joints of the pipes, but only to an agreement providing that the railroad should be so operated that none of the electric current used in such operation of that road shall pass upon, to, over, or from, the piping system; that is the only agreement that I would advise you to become a party to.

Mr. Pater: Do you know of any other remedy than the employment of the double-trolley system?

Mr. Anderson: There is no other remedy except a system which provides for a return of the current to the power house by way of insulated conductors.

Mr. Pater: Third rail?

Mr. Anderson: Not necessarily third rail; it might be a second-wire overhead; it might be a second-wire underground, but it must be an insulated conductor. The only practical appliances used at the present time, the only ones that I know of, are the overhead double-trolley system and the underground conduit system, which is being used in New York and in Washington; in that system there are two conductors in the conduit, one acting as the positive and the other as the negative conductor. The current passes out from the power house through the positive conductor through the car which it operates, and back to the negative conductor, which is absolutely insulated from the rail, and over and upon that negative conductor it returns to the power house.

President Pater: Then you would suggest to this association, as you said, that the different municipalities suggest no remedy but make the street railway company furnish the remedy?

Mr. Anderson: My suggestion is just this: that this association be very careful to not suggest any remedy which may make them a party to any damage which might result from the use of that remedy when the remedy may not be complete. My suggestion is that, in order not to make any unreasonable requirement, that you only require results without specifying in what particular manner they are to be secured. Now, if you require, for instance, an underground double-trolley system the railroad people might very well argue that it is unreasonable for you to require that, and they would so contend before a court. They would argue that there are other methods by which the result desired could be secured, and that you had arbitrarily set up one particular method for bringing about one result without giving them any opportunity to adopt any other equally efficient method; consequently, that your requirement was unreasonable. On the other hand, if you require that that road shall be so maintained and operated that none of the electric current used in the operation of the road shall pass on, to, over, upon, or from your water pipes, then the railroad company has it in its hands to bring about that result in any possible manner, and it relieves you of the possible claim on their part of being unreasonable in your demand. You bring about the same result, but in a more reasonable manner.

President Pater: Would you not also suggest that all cities where there are street railway systems, especially the smaller towns where there are interurban lines using very heavy voltage, make an examination from time to time of their water mains and keep a record of the condition of same?

Mr. Anderson: I think that a very advisable precaution.

President Pater: I notice some courts have said you can only go back to the time when you found the damage occurring, and that you should have investigated the same and notified the street railway companies of its existence. If you have a competent engineer you can easily test the voltage on your water mains and keep an itemized record of same.

Mr. Anderson: I heartily concur in the suggestion made by Mr. Pater, and, in addition to having a record of the voltage readings between the pipes and rails, would suggest that accurate data of the condition of the pipes in different locations should be preserved at the times of these readings; also that arrangements be made to determine the amount of current passing over the piping system. While it is very interesting and very important to know

the difference in potential between the pipes and rails, this determination does not go far enough to prove beyond a reasonable doubt that the damage is being done by the railroad company. It is necessary to trace the current back to them, and, in addition to that, it would be of great value to give the condition of the pipes at different times to show the depreciation extending over different periods.

Mr. McK. Landon: The court at Dayton said that facts seem to indicate at Dayton that the single-trolley system can be so operated as not seriously to damage underground metallic structures, but from your remarks I infer it is not possible to operate a single trolley so that there will not be serious damage. It may extend over a long period of years, but the damage will go on, and it is impossible in any system which returns the current by rail to prevent a considerable part of that current escaping to the underground-piping system. I would ask if bonding of the rails would prevent that?

Mr. Anderson: Even though the bonding is as perfect as possible to make it; further, even though the rails be made of solid copper themselves; the damage to water pipes would continue. It is absolutely impossible to operate a single-trolley system with the rails uninsulated from the earth, as they always are, without seriously damaging the piping system. While it was held in the Dayton case by the court that it was possible to operate a single-trolley system in such a manner as not appreciably to damage the piping system, I am willing to take issue with the court on that part of his finding.

Mr. Hulley, Marion, Ind.: Would not it be well, in making this investigation, to notify the street railway company that damage is being done, so that it cannot say hereafter that it was not notified of any damage?

Mr. Anderson: I had that in mind as one of my recommendations that the railway company should be notified that it was damaging the water pipes, and also to notify it to discontinue the damage. The advantage of doing this is in order to prepare yourself in case action is brought in court for damages existing at the time the notification was made. It would be very difficult to secure damages from the railway company, under a number of decisions that have been rendered, unless some objections had been entered to the manner in which the railway company is operating its system. The courts have in some cases held that the franchise ordinance should be interpreted as meaning the manner in which the ordinance was interpreted at the time of the construction of the road; that is, if the ordinance did not provide for a single or double trolley system specifically, that if the railway company, under that ordinance, built a single-trolley system and operated a single-trolley system, the municipal authorities meanwhile standing by all the time and seeing them build and operate that system, without objection made on their part, then the interpretation of that contract would be that up to the time the objection was entered, at least, that the contract in the franchise ordinance provided for a single-trolley system; this makes it very necessary that some notification be given the railway company at the time the damage is found to exist, and that should be at as early a moment as possible after discovery of it.

Mr. C. Monjeau: I should like to ask one question, which I think is due right here: Mr. Anderson, would you not advise without modification a resort to an injunction whenever any company or companies are proposing the introduction of a single-trolley system?

Mr. Anderson: Well, that is a legal question. Of course, I am not—as I said before—qualified as a legal expert, but from my limited knowledge of the law I should think that that would be a very advisable thing to do, indeed.

President Pater: I would state here, in this connection, that while the destruction of our water companies' mains is a tremendous loss in money to the water companies, or to the cities operating them, there is another danger arising to life from electrolysis with these large buildings going up all over the country. Some office buildings contain from 500 to 2000 persons, and there is great danger that this electrolysis will affect these steel structures in the course of time. Many of these structures run their iron framework into the ground a considerable distance, and the trolley cars are running around the corners of these large sky-scrapers. Now, that might entail not only great loss of property and money value, but loss of life. I believe that we can get those people interested in this matter. They are at present giving no thought to it, and will not until there is an accident, and then the country will wake up! If we will enlist some of these interests in this cause and call their attention to this great danger, as I think Judge Carter called their attention to it, it may accomplish something. Judge Carter said that you must always bear in mind the possible destruction of life that may occur if you destroy the tenacity of these steel frameworks. I believe we ought



to enlist the co-operation of these interests in this subject, and they will help us in fighting these people, who are simply determined not to give us a proper remedy.

Mr. Boynton: It occurs to me, in addition to the very excellent suggestion made in regard to the form of franchise or contract requiring results without prescribing manner of securing those results, that we should also include a clause that the railway company shall be responsible in damages for any injury resulting to the waterworks system from the operation of their road; embody that right in the franchise itself.

Mr. Anderson: One thought occurs to me with regard to Mr. Boynton's remarks, that any clause put in the ordinance or contract providing that the railway company shall be responsible for any damages which may arise from their manner of operating the road seems to my mind to imply the idea that they may possibly so operate that road as to do damage. The thing that you need is to have them build the road in such a manner that they shall not do damage, and that you shall not in any manner or form in your ordinance give any reason for any court to suppose that it was intended that they should do damage to the pipes, provided they paid for it. Any damages that you may recover from a railway company is, of course, to your pecuniary advantage, but the thing that is important to you is to preserve those pipes to the purposes for which they were installed in the ground. The railway company might agree to replace all the pipes that are destroyed by electrolysis, but what good will that do you if at the time of a large fire a main bursts? Suppose the disaster means that \$1,000,000 worth of property is destroyed in the flames, what clause like the one suggested will cover the loss of that property in this indirect manner? Surely, none. It seems to me that the wisest thing to do in drawing up such an ordinance is not in any manner to suggest that any other system shall be adopted than such a system as will entirely protect you from this damage.

**Traffic on the Chicago Elevated Roads**

Traffic on three of the Chicago elevated roads so far this year in passengers carried is given in the following table:

METROPOLITAN ELEVATED				
Month	1902	1901	Increase	Per Cent
January	98,029	89,699	8,339	9.3
February	100,466	97,659	2,807	2.8
March	105,512	98,339	7,173	7.3
April	109,246	97,018	12,228	12.6
May	105,799	92,579	13,227	14.2
June	101,743	86,179	15,564	18.0
July	97,299	79,308	18,621	23.4
August	100,099	81,256	18,843	23.1
September	109,751	88,226	21,525	24.6

NORTHWESTERN ELEVATED				
Month	1902	1901	Increase	Per Cent
January	62,010	52,022	9,988	19.5
February	64,760	55,256	9,504	17.2
March	65,362	57,193	8,169	14.3
April	65,430	58,623	6,807	11.6
May	63,199	56,399	6,200	10.8
June	60,813	53,587	7,226	13.4
July	56,110	48,559	7,551	15.5
August	57,911	49,770	6,141	16.3
September	63,950	54,065	9,885	18.2

SOUTH SIDE ELEVATED				
Month	1902	1901	Increase	Per Cent
January	79,154	71,137	8,017	11.2
February	79,386	74,525	4,861	6.5
March	80,313	76,269	4,044	5.3
April	81,009	77,772	3,237	4.2
May	76,063	74,205	1,858	2.5
June	76,449	69,645	6,804	9.7
July	70,767	63,763	7,004	10.9
August	68,334	61,143	7,191	11.7
September	76,572	67,627	8,945	13.2

**Apparatus for the New Lines of the Union Traction Company of Indiana**

Mention has already been made in these columns of the large mileage of new interurban lines being constructed by the Union Traction Company, of Indiana, in addition to the 100 miles of interurban line already operated. The electrical apparatus to furnish power for these new lines has recently been contracted for with the Westinghouse Electric & Manufacturing Company. The whole system will be operated from the present modern and

economical power house at Anderson. The transmission voltage at which the present sub-stations are supplied is 14,000. The power house will be increased in capacity by the addition of two 1000-kw generators and seven 500-kw step-up transformers. There will be six new sub-stations in addition to the eight already operated. Each sub-station is to have two 250-kw rotary converters and four 175-kw step-down transformers, reducing from 30,000 volts to 375 volts. The order for new apparatus, therefore, includes twelve rotary converters and twenty-four step-down transformers. The Westinghouse Company will also supply all the necessary switchboards in connection with this power distribution. In addition to the portable sub-station, which the Union Traction Company of Indiana already owns, another has been ordered, which will contain a 250-kw rotary converter and three 87-kw transformers. These portable sub-stations are placed in a box car and can be run into any sub-station on the system.

**The Hudson Valley Railway Strike**

The strike of conductors and motormen on the Hudson Valley Railway, which was declared on the morning of Saturday, Aug. 30, has been resumed, although last week it was announced that it had been closed, and that the men had acknowledged their defeat, and applied for reinstatement. The causes which led up to the trouble were explained in the STREET RAILWAY JOURNAL of Sept. 20. When the strike was ordered it was announced that the former employees had taken measures to prevent any deeds of violence and intimidation, but as soon as the company attempted to operate cars the usual methods were resorted to, and in several cases very serious accidents were averted only by the extraordinary precautions that were taken by the company. At several points along the road cars were stoned and attempts made to drive the motormen and conductors from their places, and it was found necessary to call out the State militia, as well as to secure the services of a large number of deputy sheriffs to protect the company's property. About two weeks ago the company succeeded in opening its lines and resuming service, although the regular schedule was not followed for some time, but last week most of the old employees had applied for reinstatement, and the leaders of the strike acknowledged their defeat. The company selected from its former employees enough men to fill the unoccupied positions on the road, the militia was withdrawn, and arrangements made to operate on the old schedule. On Saturday night and on Sunday, however, hostilities were renewed. At Glens Falls a mob badly wrecked several cars, took some of the motormen and conductors from them, stoned the cars, fired at the military, overawed the police, and for a time was in control of the town. The rioters started for a mass meeting the labor unions were to hold. They were making a parade preliminary to the meeting, and the rear end of the line broke off and followed a car. At a switch they got the trolley off the wire, broke the rope, jeered at the crew, threw stones, breaking the windows and forcibly dragged the crew off the car. Other cars came along until there were four on the switch. A motorman was hit on top of the head with a brick and badly cut in the face. The police succeeded in getting five of the crew on the four cars to headquarters, although followed to the station by the mob, which endeavored to force an entrance into headquarters through a rear window. They were not driven away until fired upon by the police. In the meantime the sheriff had called out Company K, National Guard, again. A detail guarded the four stalled cars and another went to police headquarters after the non-union men and escorted them to the company's offices. A mob of 2000 or more was hooting, jeering and crowding upon them, and it was necessary in several instances to club muskets to get through. The crews were put back on the cars, and, guarded by the soldiers, started for the station, 2 miles south. They were thus escorted to the outskirts of the village, where the soldiers boarded the cars. Almost immediately there were several shots fired at the cars, which the guard answered with a volley. A half mile farther the cars were stalled because poles and wires had been cut down. The cars returned to the armory, and later, repairs having been made, started for the station. On the grade near Rogers Street men signalled to the first car to stop, and when no attention was paid to the summons they endeavored to stone it. The cars slowed down and the soldiers arrested the men, not, however, until after the cars had crashed together, being damaged considerably. It was then found that the rails had been greased and an attempt made to pile the four cars in a heap.

At South Glens Falls, Saratoga County, the wires have been cut and a car stoned, the conductor being hit by a brick. The service there was discontinued. Everything is reported as quiet on the other divisions of the road in Washington, Warren and Saratoga counties.



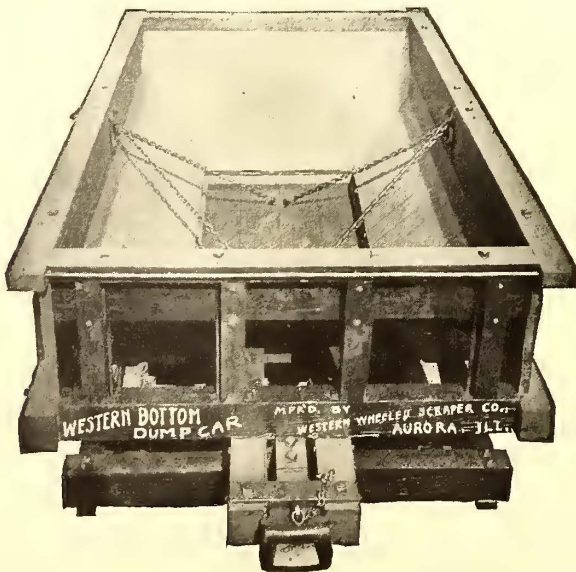
On Sunday the militia was detailed to protect the power house and other property of the Hudson Valley Electric Company in Glens Falls. A squad also guarded a bridge at Sandy Hill, having been sent there owing to a report that one of the canal bridges there was to be blown up. Thirteen persons are being held for inciting riot Saturday night. Mud is being thrown at cars and passengers in Fort Edward.

### Dick, Kerr & Co.'s Business

Dick, Kerr & Co., Ltd., of London, have made a very satisfactory showing in their annual report for the year ended June 30, which was submitted to the shareholders on Sept. 29. The profits earned during the twelve months' trading to June 30 amount to £103,757 16s. 7d. Out of this had to be paid debenture and loan interest and trustees' fees, and there has been reserved the sum required to provide for the premium payable on the redemption of the present debenture stock. These absorb £6,683 10s. 0d., leaving a balance of £97,074 6s. 7d., to which must be added the profits brought forward from last year, viz.: £27,793 9s. 0d., making a total of £124,867 15s. 7d. available for appropriation as follows: (1) To pay a dividend of 5 per cent per annum on the preference share capital (the proportion of this dividend to Dec. 31, 1901, has already been paid), £6,000. (2) To carry one-fifth of the remaining profits to reserve fund, as required by clause 24 of the trust deed securing the debentures, £18,214 17s. 4d.; further sum to this reserve, £21,785 2s. 8d. Total, £40,000. (3) To pay a dividend of 10 per cent and a bonus of 20 per cent on the ordinary share capital of £160,000, free of income tax, £48,000. (4) To carry forward the balance of £30,867 15s. 7d. Total, £124,867 15s. 7d. The dividend on the preference shares were payable on Oct. 1, as usual, and the dividends and bonus recommended on the ordinary shares will be paid when approved. The directors consider the result of the twelve months' trading satisfactory, and state that the prospects for the current year show every indication of good results. Since the last report important contracts have been carried out for the construction and equipment of several electric tramways in Great Britain and abroad; and these works have given satisfaction to the company's clients. The resolutions for acquiring the shares of the English Electric Manufacturing Company, Ltd., were duly passed, and the exchange of the shares will be carried out. Steps will be taken to acquire the few outstanding shares, and arrangements will be made with the debenture holders of both companies at an early date.

### Ballast Car for Street and Interurban Railways

The old-fashioned ballast car is rapidly giving place, on both steam and electric railway construction work, to more modern types. One of these, which was designed especially for electric railway work, is illustrated herewith. These cars are not only



BALLAST CAR FOR CONSTRUCTION WORK

in extensive use for distributing ballast, but are also very economical for filling trestles or on other work requiring the load to be dumped between the rails. The wheels are chilled hard for long wear; bronze journal bearings are used and white oak timber

is employed throughout. The doors are hung at the bottom of the bed by angle iron hinges of strong construction and are held in place by double test-proof cable chains. The load is discharged by tripping a lever, not shown in the illustration, which releases the doors. The latter are brought back to place by means of a lever and a ratchet winding the chains around a roller.

### Removal of American Correspondence School to Chicago

The American School of Correspondence, which was organized several years ago at Boston, has removed its headquarters to Chicago, and will be conducted hereafter in conjunction with Armour Institute of that city. Dr. Gunsaulus, president of the Armour Institute, has been made chairman of the advisory board of the Correspondence School, and the work of instruction by correspondence will be carried on under the regular faculty of the Armour Institute. It is worthy of note that all work under the correspondence system will be recognized in applications for degrees from Armour Institute. The Correspondence School has been particularly successful in its mechanical and engineering departments, and it has already a large list of graduates occupying responsible positions. Its present roll of students includes representatives in many foreign countries, including New Zealand, China, India, Russia and other remote quarters. The Correspondence School has also recently issued a very handsome "Reference Library of Modern Engineering Practice." These volumes are prepared for the use of the more advanced students, and contain carefully prepared articles on engineering topics by authorities in their respective lines. Under the new arrangement with the Armour Institute it is expected that the Correspondence School will enjoy even greater success than it has already met, as its facilities will be very much improved.

### Rapid Transit at the World's Fair

It will cost \$750,000 to construct and equip the rapid transit system upon the World's Fair grounds at St. Louis. The length of the road and its branches will be 8 miles, and it will enable the visitors to see the vast exposition with as little fatigue as possible. The problem in planning the intramural road has been to place it where it would not mar the beauty of the exposition. Eminent engineers have been called into consultation and all phases of the project have been studied thoroughly. It is believed the plan presented by Charles V. Weston, of Chicago, comes nearest to a perfect solution of the difficulty. Owing to the varying altitudes of the exposition grounds the road will be at times an elevated line and in other parts built at grade or below the surface. The trip on the intramural railway will undoubtedly be one of the most delightful diversions for visitors to the exposition.

### Sale of Southern Property

Interests identified with the Railways & Light Company of America, who are also the controlling owners in the North Augusta Electric & Improvement Company, of Augusta, Ga., and the Augusta-Aiken Electric Railway Company, have consummated the purchase of a majority of the stock of the Augusta Railway & Electric Company, of Augusta, which owns the entire street railway and electric lighting properties of Augusta. Its capital stock is \$1,000,000, and it has \$1,000,000 of bonds outstanding.

### Meeting of the New York Railroad Club

The next meeting of the New York Railroad Club will be held on Thursday, Oct. 16, at the rooms of the Metropolitan Street Railway Association, No. 761 Seventh Avenue, corner Fiftieth Street, New York City. The subject of the evening, "Railway Freight Claims," will be presented in a paper by R. L. Calkins, freight claim agent of the New York Central & Hudson River Railroad. A full discussion is expected, particularly on the line of the relation efficient service by the mechanical and transportation departments bears to the number and importance of claims presented. The executive committee is experiencing considerable difficulty in securing satisfactory permanent quarters for the club, and in the emergency was glad to accept the invitation extended by the Metropolitan Street Railway Association to use its quarters for the coming meeting; at that meeting the special committee on new quarters, consisting of the president and the secretary, will render its report and a permanent location will then doubtless be decided upon. The secretary of the club has removed his office to 418 Center Street, South Orange, N. J.



### Topics of the Week

In a speech in Hamilton County the other day Mayor Johnson, of Cleveland, said: "The Republicans at Akron had two big elephants in their parade. Our side have only Mr. Bigelow and myself to attract the people."

A wealthy resident of St. Louis has made a six months' contract with a street car advertising firm for the display on the cars of the St. Louis Transit Company of 200 cards on which are printed six scriptural quotations, taken from as many books of the Bible. The cards have appropriate headings, and since their appearance they have attracted unusual attention.

The Supreme Court of Washington has decided that a street railway company is responsible for mistakes made by its conductors in the matter of issuing transfers to branch lines, and that a person who may be ejected from a street car because he does not possess a proper transfer is entitled to recover damages against the company if the fault of the mistake lies with the conductor who issued the transfer.

The Lord Mayor of Liverpool, England, visited Cleveland a few days ago "to meet Mayor Tom L. Johnson and inspect his low-fare tramways," regarding which the Lord Mayor is said to have heard very much. Mayor Johnson was away on his circus campaign, and it took some tall explanations to convince the worthy Briton that the 3-cent fare lines exist only in the minds of the jovial Mayor and his followers.

According to last year's census, Paris had 96,698 horses which could be utilized in case of war, this having been the average figure for many years; but this year the number has suddenly fallen to 90,796. This considerable diminution is said to be due to mechanical traction. The Paris Omnibus Company had last year 16,579 horses in its service; now it employs nearly 2000 less. In all the companies which compete with the tramways and the Metropolitan Railway, the diminution of horses has been 2727. The remaining 3175 horses which, since last year's census, have passed out of service have, therefore, it is said, been replaced by automobiles.

The Wall Street Journal quotes a director of the New York, New Haven & Hartford Railroad as saying: "The operations of the New York, New Haven & Hartford Railroad for the year ended June 30 last were certainly very favorable and indeed gratifying to the directors. The annual report is certainly noteworthy when consideration is taken of the fact that the system is networked with electric car lines, more so than any railroad in the country. As I stated some time ago, I still maintain that the electric railway, as now operated, is a help rather than a detriment to the steam roads. The electric railway is bringing people to the centers of population, and encouraging travel by the general public. It is possible that the through electric lines may hurt the steam roads somewhat, but until these through electric lines have demonstrated their usefulness to the public, and their ability to earn dividends, it is impossible to say just to what extent their competition will affect the earnings of the steam roads." There are many persons who would like to have this director explain why the company equipped some of its branch lines with electricity, why the company always opposes the construction of an electric railway that enters its territory, and why that memorable fight was made against the New York & Port Chester Railroad.

### Street Railway Patents

[This department is conducted by W. A. Rosenbaum, patent attorney, Room No. 1203-7 Nassau-Beekman Building, New York.]

UNITED STATES PATENTS ISSUED SEPT. 23, 1902

709,484. Magnetic Wheel; J. O. Heinze, Jr., Revere, Mass. App. filed Feb. 24, 1902. A number of electromagnets are formed in the structure of the wheel and energized for the purpose of increasing the traction of the wheel.

709,516. End Panel and Seat Post for Open Cars; J. Seeberger, Watervliet, N. Y. App. filed April 24, 1902. An improved construction for connecting the metal end panel with the base of the post.

709,517. End Panel for Open Car Seats and the Seat Post with which it Connects; J. Seeberger, Watervliet, N. Y. App. filed April 24, 1902. Modification of the preceding patent.

709,564. Pivoted Rocker Bearing Center Plate for Railway Cars; C. M. Thompson, Newark, Ohio. App. filed May 12, 1902. A truck center plate secured to the bolster and provided with an annular channel to receive a number of radially disposed rockers

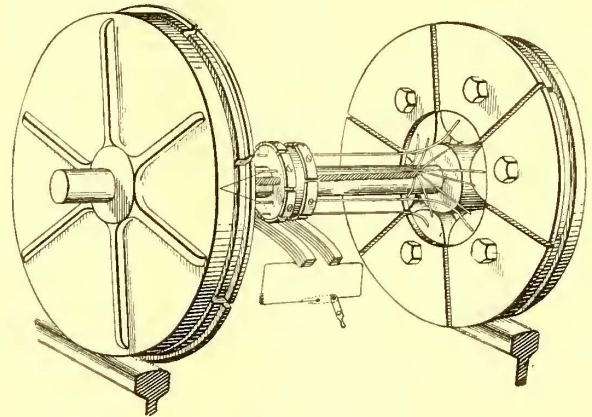
and with a central opening to receive the pivot portion of the body center plate.

709,590. Trolley Track Switch; P. F. Werner, Williamansett, Mass. App. filed April 7, 1902. Details.

709,675. Electrically Operated Railway Switch; J. Loney, Detroit, Mich. App. filed June 21, 1902. The switch point is raised and lowered by a cam surface on the rod which connects the cores of two solenoids.

709,743. Track Brake; T. S. Butler, Vandergrift, Pa. App. filed April 15, 1902. Two levers carrying roughened wheels are pivoted in a position so that when moved by the brake chain the wheels will be thrown against the rails.

709,755. Center Bearing for Railway Cars; F. Ditchfield, Avalon, Pa. App. filed July 1, 1902. A center bearing plate having a projecting member of any desired height and conformation and a base shrunk thereon.



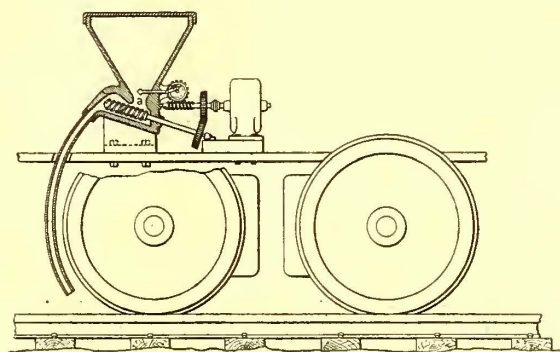
PATENT NO. 709,484

709,865. Railway Switch Operating Device; J. C. Booth, Monesson, Pa. App. filed May 14, 1902. A plow adapted to engage a switch-throwing lever in the roadbed is thrown downward by operating a push button which closes the circuit through a magnet whose armature moves the plow.

709,878. Manufacture of Rail-Bonds; F. H. Daniels and H. W. Wyman, Worcester, Mass. App. filed Feb. 7, 1902. The end of the bond is provided with a socket into which a hard metal plug is driven to spread the bond in the orifice of the rail.

709,884. Car Brake; J. H. De May and F. Hoyland, Jr., Jackson, Mich. App. filed Jan. 29, 1902. A combination of worm and spur gearing between the brake staff and the rigging.

709,923. Momentum Car Brake; T. E. McCollum, Toronto, Can. App. filed Jan. 2, 1902. Wedging discs are forced between a pair of discs loosely mounted on the axle, said pair of discs being located between two other fixed discs with which they engage to retard the car.



PATENT NO. 710,072

709,975. Railway Track Structure; E. B. Entwisle, Johnstown, Pa. App. filed Feb. 8, 1902. A hard metal in-set plate to be used at switches and crossings.

709,981. Car Brake; G. M. Griggs, Scottsdale, Pa. App. filed Sept. 3, 1901. Details of construction of a track brake.

709,991. Car Fender; J. H. Lutter, Covington, Ky. App. filed June 23, 1902. The fender consists of a buffer and a scoop; when the former is hit it trips the latter, allowing it to fall and pick up the obstacle.

710,072. Electric Railway System; W. B. Potter, Schenectady, N. Y. App. filed Feb. 28, 1901. A conveyor for feeding out the sand from the box is driven at will by an electric motor.

710,134. Sand Distributor for Railroads; W. H. Bell, Brooklyn, N. Y. App. filed May 7, 1902. The spout of the sand box is automatically moved by the truck when the car passes around a curve, to deliver the sand to the proper point at all times.



## PERSONAL MENTION

MR. H. F. PARSHALL, who has been visiting in this country for several weeks, sailed last Tuesday for England.

MR. FREDERICK WILSON has resigned his position as manager of the Brantford Street Railway Company, of Brantford, Ont.

MR. A. B. DOLBY, who recently resigned his position with Mr. Francis Granger, is now in charge of the street railway department of the General Supply Company, of New York.

MR. WILLIAM F. MULKEY, one of the owners of the Toledo & Monroe Electric Railway, died at his home in Detroit a few days ago. He was identified with a number of prominent Detroit enterprises.

MR. ROBERT C. BROWN, formerly general manager of the Sao Paulo Tramway, Light & Power Company, Ltd., of Brazil, has been appointed electrical expert of the Toronto Railway Company.

MR. J. B. ROHRER, chief engineer of the Honolulu Rapid Transit & Land Company, Honolulu, H. I., has resigned his position to return to the United States. Prior to his connection with the Honolulu Rapid Transit & Land Company Mr. Rohrer was for three years connected with the Chicago Drainage Canal.

MR. A. B. SANDERS, who has for several years been connected with the engineering department of the American Telephone & Telegraph Company at New York, has resigned to take a position as sales engineer with the Electric Storage Battery Company, of Philadelphia.

LIEUTENANT-COLONEL HORATIO A. YORKE, chief inspecting officer of railroads for the Board of Trade, of London, who has been commissioned to prepare a report on the workings of American railroads, especially electric railways, is now in this country. Mr. Yorke proposes to spend about a month here, and will make a special study of the underground conduit system.

MR. THOMAS HAWKEN, who has been superintendent of the Rockland, Thomaston & Camden Street Railway, of Rockland, Me., for several years, has been appointed general manager of the company. Mr. Valentine Chisholm, who has been chief electrician of the company, has been appointed superintendent to succeed Mr. Hawken.

MR. LOUIS F. HYDE and MR. CHARLES S. BAXTER, who have had charge of the legal and claims department of the Boston Elevated Railway during the past five years, and who acted in like capacity for the West End Street Railway, of Boston, which was succeeded by the Boston Elevated, have resigned.

MR. ALEXANDER MCKENZIE, formerly of the Toronto Railway Company, has accepted the position of vice-president and general manager for the Sao Paulo Tramway, Light & Power Company, Ltd., of Sao Paulo, Brazil, and is now on his way to Sao Paulo to take up the work. The Sao Paulo Tramway, Light & Power Company has just added a new turbine to its plant, making four machines in all, as well as thirty new cars, and it is extending its operations in every directions.

MR. E. W. GOSS has resigned as president of the Middletown Street Railway Company of Middletown, Conn., and Mr. Oliver Gildersleeve, of Portland, has been elected as his successor. Mr. Goss retired from the company in order to devote his entire attention to the Milford, Holliston & Framingham Street Railway Company, of which he is treasurer, purchasing agent and superintendent.

MR. CHARLES S. KIMBALL, designer of structural steel and track work for the Interurban Street Railway Company, of New York, was married at St. Nicholas' Episcopal Church, New York, on Wednesday, Oct. 8, to Miss Margaret E. Ireland. Mr. Farley G. Clark, electrical superintendent of the Ninety-Sixth Street power station of the company, was best man. After a short trip to Niagara and the Thousand Islands, Mr. and Mrs. Kimball will reside temporarily with the parents of the bride.

MR. A. W. DETWILER has resigned as treasurer of the Toledo & Indiana Railway Company and the Toledo & Indiana Construction Company, of Toledo, Ohio, although he retains his interests in both companies. Mr. G. G. Metzger has been elected to succeed Mr. Detwiler as treasurer of the Toledo & Indiana Railway Company, and Mr. George B. Boone has been elected to

the position of treasurer of the Toledo & Indiana Construction Company.

MR. W. B. YEREANCE has resigned his position with the Brooklyn Heights Railroad Company. Mr. Yereance has been connected with the Brooklyn Rapid Transit Company for three years, having been closely associated with Mr. W. W. Wheatly, superintendent of surface lines. He is an engineer of large experience, and was for many years mechanical assistant to the general manager of the old Brooklyn L road. He left that position to accept a more responsible one with the West Shore Railroad, and was there at the same time as Mr. Wheatly. Mr. Yereance is well known to all local steam and street railway men as secretary of the New York Railroad Club, a position which he has filled with most satisfactory results.

MR. JOHN FRITZ, the distinguished ironmaster and inventor, of Bethlehem, will be entertained at a dinner given in his honor at the Waldorf-Astoria on Friday, Oct. 31, the occasion being his eightieth birthday. This banquet will also signalize the successful founding of the John Fritz Gold Medal, for achievement in the industrial sciences. The medal will be awarded annually by a committee of members of the American Society of Civil Engineers, the American Society of Mechanical Engineers, the American Institute of Mining Engineers and the American Institute of Electrical Engineers. The committee representing the several societies has already raised \$6,000 in contributions from 500 of the leading members of the engineering profession in this country and in Europe. The medal itself has been entrusted to the American sculptor, Mr. Victor D. Brenner. It is understood that this is the first time upon which the four great engineering societies have got together for the accomplishment of any such purpose, and there can be no doubt that the award of the medal each year will be considered a distinction of the highest honor. No award of the medal is to be made unless the candidate's name has been under consideration by the board of award for at least one year, and it is proposed that this board shall consist of sixteen members, four from each society, selected by the governing council of each, to hold office for one, two, three and four years. In case of the non-participation in any year of one of the societies, the award is to be made by the representatives of the remaining societies.

MR. W. W. WHEATLY, superintendent of the surface division of the Brooklyn Heights Railroad Company, resigned his position with that company on Oct. 1, and will enjoy a couple of months' vacation before engaging in active work again. Mr. Wheatly has had valuable experience in practical railway work, supplementing



W. W. WHEATLY

his training as a steam railroad man by several years' service on the street railway system of Brooklyn. His railroad career began in 1875 as clerk and telegraph operator on the Paducah & Elizabethtown Railroad in Kentucky. He passed through the several positions of ticket and freight agent and despatcher's operator until he became a train despatcher. In that capacity he served the Louisville & Nashville and the Chicago & Northwestern railroads up to 1884. When the West Shore Railroad was completed and opened to Buffalo for business he became chief train despatcher and afterward assistant superintendent of the Buffalo division, and later car accountant of the entire road. In 1896, after C. L. Rossiter became president of the Brooklyn Rapid Transit Company, Mr. Wheatly accepted the position of superintendent of one of the largest divisions of the system, and one year later was made assistant general superintendent of the system. Upon the retirement in 1899 of Mr. Ira McCormack, superintendent of all the surface lines, Mr. Wheatly was promoted to his place. In 1895 Mr. Wheatly, on account of his wide acquaintance with railroad men and railway problems, was elected secretary of the New York Railroad Club, a technical organization of steam and street railway men having over 1100 members. He remained secretary of the club until 1900, when he was elected first vice-president, a position he still holds. Mr. Wheatly has said that inasmuch as he has not had a vacation in six years, he proposes to enjoy himself and take a good rest for the next few months.



## FINANCIAL INTELLIGENCE

### THE MARKETS

WALL STREET, Oct. 8, 1902.

#### The Money Market

Review of the money developments of the last fortnight can hardly be as important as consideration of their effects upon the present position in the domestic markets. An acute money stringency, threatening serious consequences to business and a financial panic, induced the Secretary of the Treasury to adopt relief measures more radical in character than any heretofore ventured upon by his predecessors in office. He ruled that security against United States deposits in the national banks should not be restricted any longer to government bonds, but should include State and municipal bonds as well. These latter bonds, however, could only be accepted as a partial substitute for the United States bonds now held against public deposits, and could not be used to take out any new deposits; moreover, they could only be accepted on condition that the government bonds released by the substitution should be used immediately as a basis for additional note circulation. That this privilege will be utilized by the banks to any considerable extent is doubted for three reasons; first, because State and municipal bonds are hard to get and their price is high; second, because there is no assurance of an attractive profit in extra note circulation for more than a brief interval, and third, because the statutory provision that bank notes can be retired no faster than \$3,000,000 a month would pretty surely compel the banks, if they issued any large quantity of new notes, to keep them out for a considerable period during which there was little or no profit in the issue. The order of the Treasury dispensing with the 25 per cent reserve hitherto required against government deposits, is of much more practical importance. It places at the disposal of the banks a cash sum of between \$20,000,000 and \$30,000,000, against which four times that amount of credits can be issued in case of need. It is clear, however, from the action of the New York Clearing House Association that these additional authorized credits are to be held as an emergency reserve, only to be availed of in case the business needs of the country were to become really acute. For the present the New York banks are not counting, as they might, the \$10,000,000 or so thus released locally, as part of their surplus reserve, but have announced to their customers that the \$1,800,000 surplus reported last Saturday above the legal minimum, is all that there will be available. Inasmuch as sterling exchange is more than a cent in the pound above the gold import level, the Treasury receipts are still in excess of disbursements, and currency is still going out to the interior, there has been no recourse but to cause wholesale liquidation among Stock Exchange speculators to the end that deposit liabilities may be reduced and surplus reserves indirectly strengthened. A stiff money rate is the natural accompaniment of this situation. Call money, which broke from an extreme 35 per cent to an average 8 per cent at the time of the Treasury's offer, advanced again on Monday to 12 per cent. Time loans are only obtainable at 6 per cent, with a small commission added on.

#### The Stock Market

The necessity for compelling extensive Stock Exchange liquidation in order to strengthen the resources of the local banks has been and still is the preponderant influence in the security market. On the part both of buyers and sellers there has been tacit agreement that until this liquidation has been carried far enough to afford substantial relief, the ordinary influences in the financial situation must be disregarded and market quotations lose account of real values. Consequently the decline in prices, rapid, and at times violent, as it has been during the last fortnight, has gone on without any attempts to check it. It stands to reason, of course, that the securities which, under pressure, have been thrown over hastily by speculators, have gone into stronger hands, but nobody can ever tell when this transfer will have gone far enough to satisfy the demands of the money conditions and place the market on a thoroughly solid footing. All that can be said at all definitely is that, barring the coal strike, nothing unfavorable has developed in the situation at large, from the time a month or six weeks ago when everything was confidence in Wall Street. The real test of the strike is about to be made now that the Governor of Pennsylvania has issued the call for the whole of the State militia. It must soon be discovered whether or not the mine owners are right in their contention that plenty of coal can be mined if all the men who want to return to work are assured of protection. The market awaits the conclusion of this uncertainty with much

anxiety, realizing that should this strongest hope of an early resumption of mining be disappointed, a serious coal famine, with all its grave possibilities, will be inevitable. Should the operators' claims be justified, however, the financial outlook will be clear again, awaiting only the ending of the temporary money market difficulties to find expression in the security dealings.

The local traction stocks during the fortnight have moved so nearly in the path of the general market that there is little need for any special comment. Manhattan showed relatively more strength than the others. It has been bid up from time to time by a pool which was formed in the expectation that with the installation of the electric service on the West Side lines, earnings of the property will at once begin to show large gains. This pool, however, has not tried to hold up the stock in face of the general market weakness. Liquidation has gone on uninterruptedly in Brooklyn Rapid Transit and Metropolitan, friends of the properties showing no inclination whatever to extend support.

#### Philadelphia

The local traction stocks have responded only partially to the depressed spirit of the general speculation. Doubtless, because comparatively little of the stock has been distributed in the hands of the public, the pool in Philadelphia Rapid Transit has been successful in sustaining and even advancing the price. The quotation touched the highest record, 18½, last Thursday, afterwards losing only 1½ points to 17. Union Traction, moving sympathetically, went as high as 48¼, and held all but a fraction of its gain. American Railways has also been conspicuously strong, establishing a new record price at 54, and later losing only a point. Talk of an increased dividend the coming winter accounts for most of the buying. Philadelphia Traction is steady, with the usual investment purchases in evidence, around 98. This is equal to par with the recently declared semi-annual dividend taken into account. The "deal," whatever it may have been, in Fairmount Park Transportation is off for the present, and the stock has yielded to 28½, against 34, the high price a month ago. Other sales include Consolidated of New Jersey at 69½, Easton Electric at 20, and Railways General at 4¾ up to 5. Bond sales include American Railway 5s at 109, Electric-People's Traction 4s around 98 and 98¼, People's Passenger 4s at 105, Union Traction of Indiana 5s at 100 to 101, Indianapolis Railway 4s at 87½, Newark Passenger 5s at 117, United Railways 4s at 87 and 88, and Atlantic City Railroad 5s at 112.

#### Chicago

Chicago traction stocks have moved, on the whole, pretty independently of general market conditions. People close to the inside say that Metropolitan traffic this month will approximate 109,000 passengers daily. For the fiscal year ending in February the daily average should be 118,000. This would make earnings of the company enough to pay all dividend on preferred shares and leave a balance of 1 per cent for the common. Doubtless it is this situation which has been chiefly reflected in the firmness of the Metropolitan stocks, the common selling freely between 41 and 41½, which is a somewhat higher range than it has held for some time past. Northwestern has also been fairly steady, between 36½ and 36, but Lake Street Elevated is off to 10, and South Side to 110. Surface line stocks have been extremely dull, a few sales only being noted in City Railway at 216½, and in Union Traction at 17½ and 17. September earnings on both these properties are expected to show inferior results as compared with former months.

#### Other Traction Securities

Boston dealings have not reflected very greatly the general tendency toward liquidation. Boston Elevated is off on light trading from 156 to 155, with sales of the subscription rights at 75 cents. Massachusetts Electric common after reaching 36¼ reacted later at 34½, the preferred going down to 96. West End common, on small offerings, yielded to 93. Baltimore has felt the force of the general depression more keenly. United Railways securities have all sold down to the lowest figures recorded in some time, the common as low as 13½, the income bonds at 66¼, and the general 4s at 94½. On the other hand, Nashville securities were better supported, the shares selling up to 67½, and the 5 per cent certificates from 75 to 78¼, receding later to 75¼. Other transactions include Newport News and Old Point Comfort 5s at 109¼, City and Suburban (Baltimore) 5s at 115, Anacostia and Potomac 5s at 100, and Atlanta Street Railway 5s at 106¼ down to 105½. The announcement of the consolidation of New Jersey traction properties came as expected. It did not have much effect on North Jersey stock, the



previous price of 34 being about what the issue is to be taken over at in the consolidation. Camden and Trenton, on the idea that it may form a connecting link, has been dealt in rather actively on the New York curb between  $4\frac{1}{2}$  and  $4\frac{3}{4}$ . Other New York sales comprise American Light and Traction at 41 up to  $42\frac{1}{2}$ , the preferred at  $92\frac{1}{2}$ , Brooklyn City at  $248\frac{1}{2}$ , New Orleans common at 16 up to  $16\frac{3}{8}$ , the preferred at  $54\frac{1}{2}$ , Washington Railway and Electric preferred at 52, San Francisco common between  $21\frac{1}{2}$  and  $22\frac{5}{8}$ , the preferred between 60 and  $62\frac{5}{8}$  and the 4 per cent bonds at 91.

As a result of the tight money market in the East, there was a natural reaction in the trolley stocks on the Cleveland exchange. However, the general tone is good and prices have been well maintained. This is regarded as an indication of the strength of these securities, as under present conditions a heavy line of liquidation and consequent declining prices would have occasioned little surprise. Sales of traction stocks numbered only 2955, as against 10,089 for the week before. Lake Shore common was the most active, 900 shares selling at about 19. During the previous week this sold as high as  $22\frac{1}{2}$ . The preferred sold at 57 and 58 on sale of 210 shares, the high mark of the previous week being 61. Western Ohio receipts held at 32 during the week. During the previous upward movement they sold as high as 35. Sales were 450 shares. Northern Ohio common and preferred showed little decline in view of the announcement of the reorganization plan outlined in another column. Four hundred and eighty-three shares of the preferred sold at around 98, and 332 shares of common at between 68 and 70. Cincinnati, Dayton & Toledo was quiet, 300 shares going at 40 and 41. On the Cincinnati exchange it was in greater demand and stronger. Aurora, Elgin & Chicago sold at 41 for 20 shares. The range of the previous week was from 38 to 44. Elgin, Aurora & Southern sold for 60 on 100 shares. During the week before it sold as high as 65 and declined to  $56\frac{3}{4}$ . Miami & Erie Canal Transportation Company sold at 29 and dropped to 25 for a small lot. At closing 29 was asked with no bids. Monday the entire list was weaker with sales limited to 200 Western Ohio receipts at  $30\frac{1}{2}$  and 30; 110 Lake Shore Electric at 19 and  $18\frac{7}{8}$ , and 5 Northern Ohio common at 67.

#### Security Quotations

The following table shows the present bid quotations for the leading traction stocks, and the active bonds, as compared with last week:

	Closing Bid	
	Sept. 23	Oct. 7
American Railways Company .....	$54\frac{1}{2}$	$52\frac{1}{2}$
Aurora, Elgin & Chicago .....	42	38
Boston Elevated .....	158	154
Brooklyn R. T. ....	$65\frac{1}{2}$	$61\frac{1}{2}$
Chicago City .....	215	214
Chicago Union Tr. (common) .....	$18\frac{7}{8}$	17
Chicago Union Tr. (preferred) .....	54	50
Cleveland Electric .....	$90\frac{1}{2}$	88
Columbus (common) .....	56	60
Columbus (preferred) .....	$105\frac{1}{2}$	108
Consolidated Traction of N. J. ....	70	$69\frac{1}{2}$
Consolidated Traction of N. J. 5s .....	$110\frac{1}{2}$	$110\frac{3}{4}$
Detroit United .....	95	$84\frac{3}{4}$
Electric People's Traction (Philadelphia) 4s .....	$98\frac{5}{8}$	$98\frac{1}{4}$
Elgin, Aurora & Southern .....	$62\frac{1}{2}$	54
Indianapolis Street Railway 4s .....	—	87
Lake Shore Electric .....	—	$16\frac{3}{8}$
Lake Street Elevated .....	—	10
Manhattan Railway .....	$134\frac{5}{8}$	$132\frac{3}{4}$
Massachusetts Elec. Cos. (common) .....	$37\frac{3}{4}$	$34\frac{1}{8}$
Massachusetts Elec. Cos. (preferred) .....	96	$95\frac{1}{2}$
Metropolitan Elevated, Chicago (common) .....	41	$40\frac{1}{2}$
Metropolitan Elevated, Chicago .....	90	$88\frac{1}{2}$
Metropolitan Street .....	—	$136\frac{1}{2}$
New Orleans Railways (common) .....	$17\frac{1}{2}$	16
New Orleans Railways (preferred) .....	$56\frac{1}{2}$	54
North American .....	125	122
Northern Ohio Traction (common) .....	70	66
Northern Ohio Traction (preferred) .....	98	$96\frac{3}{4}$
North Jersey .....	$34\frac{3}{4}$	$33\frac{3}{4}$
Northwestern Elevated, Chicago (common) .....	36	36
Philadelphia Rapid Transit .....	$15\frac{1}{2}$	$17\frac{1}{8}$
Philadelphia Traction .....	$98\frac{1}{4}$	98
St. Louis Transit Co. (common) .....	29	$29\frac{1}{2}$
South Side Elevated (Chicago) .....	111	110
Syracuse Rapid Transit .....	$28\frac{1}{2}$	30
Syracuse Rapid Transit (preferred) .....	73	76
Third Avenue .....	129	—
Toledo Railway & Light .....	37	$a35\frac{3}{4}$
Twin City Minneapolis (common) .....	125	$116\frac{1}{2}$
United Railways, St. Louis (preferred) .....	—	—
United Railways, St. Louis, 4s .....	$86\frac{3}{4}$	—
Union Traction (Philadelphia) .....	$47\frac{1}{2}$	$47\frac{5}{8}$
Western Ohio Railway .....	30	28

(a) Asked.

#### Iron and Steel

Importation of foreign iron and steel continues in increasing quantity all along the line. Not only in foundry iron but in Bessemer also, the imports are heavy, while orders are constantly being filled abroad for steel billets, rails and structural shapes. The "Iron Age" thinks these importations would have had to be made in any event, even had the coal strike not cut down domestic iron production. It is, however, a fact that the shortage of coke and coal is becoming more and more embarrassing, and that if it continues much longer will seriously check consumption of the baser products. Quotations are unchanged, on the basis of \$21.50 to \$21.75 for Bessemer pig, \$31.50 for steel billets and \$28.00 for rails.

#### Metals

Quotations for the leading metals are as follows: Copper  $115\frac{1}{2}$  cents, tin  $24\frac{7}{8}$  cents; lead  $4\frac{1}{8}$  cents, spelter  $5\frac{1}{2}$  cents.

COLORADO SPRINGS, COL.—The Colorado Springs & Interurban Railway Company has filed for record a mortgage for \$1,500,000, given in favor of the Central Trust Company, of New York, to secure an issue of \$1,000,000 5 per cent thirty-year first mortgage bonds.

LA SALLE, ILL.—The Illinois Valley Traction Company has filed for record a mortgage for \$600,000, given in favor of the Portland Trust Company, of Maine. The mortgage secures an issue of first mortgage 5 per cent gold bonds.

ROCKFORD, ILL.—The consolidation of the Rockford & Belvidere Railway, the Rockford Railway, Light & Power Company and the Rockford & Freeport Electric Railway as the Rockford & Interurban Railway Company has been perfected. The Rockford & Interurban Railway Company is capitalized at \$1,000,000.

CHICAGO, ILL.—A special meeting of the stockholders in the Metropolitan West Side Elevated Railway Company has been called for Nov. 5, at which time the question of enlarging the objects of the corporation, enabling it to build a terminal spur and depot between Jackson and Van Buren Streets, between Market Street and Fifth Avenue, will be voted upon.

WATERLOO, IA.—The outstanding bonds of the Waterloo & Cedar Falls Rapid Transit Company have been called for payment at 103, interest to cease Dec. 1. A new issue of \$600,000 5 per cent gold bonds dated Oct. 1, has been made and is taken by the First National Bank, of Chicago. Of the amount, \$460,000 were subscribed by holders of the old bonds, the remaining \$140,000 being offered for public subscription at par.

SIoux CITY, IA.—The property of the Sioux City Traction Company, including franchises, rolling stock, tracks and power plants and car houses, has been transferred to the new owners, Swift & Company and Armour & Company. Mention of the sale was made in these columns a few weeks ago. The street railway system will be used in connection with the packing houses, and there is also a move on foot to purchase the stock yards and unite all these interests under one management. The street railway system consists of 50 miles of lines which comprise all the lines which were originally owned by the Sioux City Traction Company, Sioux City & Leeds Electric Railway Company, Central Traction Company, Sioux City Rapid Transit Company and South Sioux City Traction Company. The present capital stock of \$1,200,000 will probably be increased in the near future. The new owners of the property have not yet elected a new board of directors and a new set of officers.

ATLANTA, GA.—A quarterly dividend of  $1\frac{1}{4}$  per cent has been declared on the preferred stock of the Georgia Railway & Electric Company, payable Oct. 15.

MACON, GA.—The Macon Consolidated Street Railway Company and the Macon Electric Light & Railway Company have accepted the ordinance which provides for the consolidation of the companies as the Macon Consolidated Street Railway Company.

BALTIMORE, MD.—The United Railways & Electric Company announces that it has created an issue of \$600,000 car trust bonds payable in annual instalments during a period of ten years. These bonds bear interest at the rate of 5 per cent per annum, and were sold to the Mercantile Trust Company, of Baltimore, upon terms not made public.

WORCESTER, MASS.—The Railroad Commissioners have approved an issue of \$500,000 twenty-year  $4\frac{1}{2}$  per cent bonds by the Worcester & Southbridge Street Railway Company for funding floating indebtedness incurred in constructing and equipping the road.

WORCESTER, MASS.—The lease of the Webster & Dudley Street Railway Company to the Worcester & Connecticut Eastern Street Railway has been approved by the Railroad Commissioners, the terms having been amended to meet the decision of the Commissioners as to length of term, payment of taxes and maintenance and operation.

STOUGHTON, MASS.—The Stoughton & Randolph Street Railway hearing in the equity session of the United States Circuit Court has again been postponed to Oct. 22.

PITTSFIELD, MASS.—The Railroad Commissioners gave a hearing on Oct. 2 on the petition of the Berkshire Street Railway Company for authority to issue \$250,000 additional stock for the purpose of paying construction expenses and buying the pleasure park near Pittsfield which it now leases. The company has \$550,000 stock and \$550,000 bonds already issued, and it was shown that in addition to the amount covered by the outstanding stock and bonds there is \$459,000 in the company's possession, much more than enough to cover the issue desired. There was no opposition to the petition.



WORCESTER, MASS.—The directors of the Worcester Consolidated Street Railway Company have declared a dividend of 3 per cent on the \$3,550,000 of stock already issued. A dividend of 2 per cent was declared in July, making the total so far this year of 5 per cent.

BOSTON, MASS.—The Railroad Commissioners have approved the Old Colony Street Railway Company's petition for permission to issue 9487 shares of stock, aggregating at par value \$948,700, as authorized by the stockholders. The new stock is to be issued to refund floating debt and provide for the extension and improvements of the company's property.

BOSTON, MASS.—The Railroad Commissioners have approved an issue by the Boston & Northern Street Railway Company of 17,973 shares of capital stock, aggregating at par value \$1,797,300. Of the new stock to be issued \$951,300 are to be applied only to the payment of floating indebtedness and the remainder is to be applied in paying for improvements now being made.

BOSTON, MASS.—The West End Street Railway Company has awarded R. L. Day and Estabrook & Company the \$3,550,000 4 per cent thirty-year bonds recently authorized by the Railroad Commissioners.

BOSTON, MASS.—The terms of the lease of the Norfolk Suburban lines to the Boston Elevated Railway have been practically decided upon by the officials of the companies. If the directors are agreed as to the terms they must then be laid before the stockholders at special meetings, and then go to the Railroad Commissioners for their approval. In a general way the lease is drawn along the same lines as the lease of the West End Road to the Boston Elevated Railway. It is likely to be a matter of one or two months before the lease becomes operative.

DETROIT, MICH.—Russell Whitcome & Company, of New York and Baltimore, are offering for subscription at par and interest \$200,000 of the Detroit, Ypsilanti, Ann Arbor & Jackson Railway Company's first consolidated 5 per cent twenty-five-year gold bonds, dated Feb. 1, 1901, and due Feb. 1, 1926, interest payable February and August at the office of the Detroit Trust Company, trustee.

ST. LOUIS, MO.—The United Railways Company paid its quarterly dividend on Oct. 1 of 1¼ per cent.

WEBB CITY, MO.—Stone & Webster, of Boston, are reported to have secured an option on the property of the Southwest Missouri Electric Railway Company, which is controlled by Harrisburg (Pa.) interests. It is said that 8000 shares of stock are held at option at prices ranging between \$84 and \$90 per share. The system includes 41 miles of line, connecting Carthage, Joplin, Webb City, Center and Cartersville, Mo., and Galena and Empire, Kan., and 60,000 persons are served by the company's lines.

ST. LOUIS, MO.—The stockholders of the St. Louis & Meramec River Railroad Company and the St. Louis & Suburban Railroad Company held an important meeting Sept. 24 at De Hodiament as the final outcome of the recent reorganization of the St. Louis & Suburban Railway. The stockholders of the St. Louis & Meramec River have ratified the proposition to increase the capital stock from its present amount, \$2,000,000, to \$3,000,000, and to increase the bonded indebtedness by the issuance of \$3,000,000 worth of bonds. Of those bonds \$1,000,000 are to be reserved for the purpose of retiring bonds of the company to that amount outstanding. The plan to increase the capital of the St. Louis & Suburban Railway Company from \$3,000,000 to \$7,500,000 and to increase its bonded indebtedness \$7,500,000 was affirmed by the stockholders of that company. Of this \$7,500,000 issue of bonds \$2,300,000 are to be reserved for retiring the present outstanding bonds. The stockholders authorized the directors of the companies to secure the payment of the new bonds by placing a mortgage or deed of trust upon the property and franchise of the company. The plans for extensive improvements throughout the St. Louis & Suburban system were also ratified.

ROCHESTER, N. Y.—The stockholders of the Rochester & Sodus Bay Railroad Company have authorized the lease of the property to the Rochester Railway Company.

BUFFALO, N. Y.—In the STREET RAILWAY JOURNAL of Sept. 27, 1902, under the caption "Buffalo, N. Y.," was printed the statement that the Central Crosstown Railroad Company had issued a mortgage for \$3,000,000. This statement should have appeared under the caption "New York, N. Y."

SYRACUSE, N. Y.—An agreement of consolidation of the Auburn City Railroad Company with the Auburn Interurban Electric Railroad Company, forming the Auburn & Syracuse Electric Railroad Company, has been filed with the Secretary of State. The company has a capital of \$1,300,000. The directors are: Hendrick S. Holden, William Nottingham, Lyman C. Smith, Albert K. Hiscock, Clifford D. Beebe, Frank C. Soule, Willis A. Holden and Horace H. Pierson, of Syracuse, and George B. Longstreet, of Auburn.

NEW YORK, N. Y.—Although E. F. C. Young, president of the North Jersey Street Railway Company, emphatically denies that a consolidation of the North Jersey Street Railway Company, Jersey City, Hoboken & Paterson Street Railway Company, Orange & Passaic Valley Traction Company and Elizabeth, Plainfield & Central Jersey Traction Company is proposed, the rumor will not down.

BROOKLYN, N. Y.—The Brooklyn Rapid Transit Company reports earnings as follows:

	1902	1901
Gross receipts	\$1,226,954	\$1,132,385
Operating expenses	632,087	684,021
Net earnings	\$594,867	\$448,363
Two months ending August		
Gross receipts	\$2,463,355	\$2,330,942
Operating expenses	1,274,192	1,367,634
Net earnings from operation	\$1,189,163	\$963,307

Includes leased railroad of New York & Brooklyn Bridge, 2.6 miles, and trackage rights over Coney Island & Brooklyn Railroad, 2.4 miles.

NEW YORK, N. Y.—Application has been made to the Stock Exchange to list \$15,000,000 preferred and \$10,000,000 common stock of the United Railways Company, of San Francisco.

NEW YORK, N. Y.—The statement of the Interurban Street Railway Company, covering the old Metropolitan system, from April 1, 1902, to June 30, 1902, and the Interurban Street Railway Company, from Dec. 9, 1901, to June 30, 1902, compares as follows:

	1902	1901
Gross receipts	\$2,259,176	\$2,206,489
Operating expenses	1,416,429	1,095,538
Earnings from operation	\$842,747	\$1,110,951
Receipts from other sources	692,026	449,235
Gross income	\$1,534,773	\$1,560,186
Fixed charges	1,758,309	1,763,296
Deficiency for year	\$223,536	\$203,119
Total deficit June 30.	\$74,390	650,854

ZANESVILLE, OHIO.—It is reported that the property of the Zanesville Electric Railway has been sold to the Appleyard Syndicate, which is extending its lines from Newark to Zanesville. Officials of the Zanesville Company deny that the road has been sold.

TOLEDO, OHIO.—The negotiations with the Detroit United Railway relative to the sale of the Toledo & Monroe Railway have been declared off, and the Toledo & Monroe Company will proceed at once with the work of extending the line to Detroit.

CINCINNATI, OHIO.—The Cincinnati, Newport & Covington Light & Traction Company reports earnings as follows:

	1902	1901
August		
Gross receipts	\$96,118	\$74,525
Operating expenses	53,295	45,741
Earnings from operation	\$42,823	\$28,784
Fixed charges	22,238	15,807
Net earnings	\$20,585	\$12,977
To date		
Gross receipts	\$707,432	\$535,783
Operating expenses	396,430	327,614
Earnings from operation	\$311,002	\$208,169
Fixed charges	175,343	125,328
Net earnings	\$135,659	\$82,841

SPRINGFIELD, OHIO.—The directors of the Urbana, Bellefontaine & Northern Traction Company will meet Oct. 30 to vote on increasing the capital stock of the company to \$500,000 and to complete traffic arrangements with the Dayton, Springfield & Urbana Railway. Both roads are controlled by the same interests.

CLEVELAND, OHIO.—Holders of certificates of deposit of preferred stock of the Aurora, Elgin & Chicago Railway have been notified that their certificates will be cashed on presentation, to the amount of ten-thirteenths of their holdings, and a receipt issued for the remaining three-thirteenths. The settlement represents the payment for the 10,000 shares of the stock recently purchased by Claude Ashbrook and associates, of Cincinnati. The price was \$90.48 per share, which is considered remarkable for a road not fully in operation.

CLEVELAND, OHIO.—The Lake Shore Electric Railway Company has paid the balance on the purchase price of the Toledo, Fremont & Norwalk Railway, now a part of the Lake Shore Electric, the amount being \$383,000. This removes one of the chief obstacles to taking the road out of the hands of the receiver. Remarkable gains in earnings are being made by the company.

SPRINGFIELD, OHIO.—The directors of the Dayton, Springfield & Urbana Railway will meet Oct. 15 to consider the advisability of increasing the capital stock of the company to \$1,500,000.

PHILADELPHIA, PA.—There has been listed on the Philadelphia Stock Exchange \$100,000 additional capital stock of the American Railways Company.

TACOMA, WASH.—Suit to restrain the Tacoma Railway & Power Company from absorbing the Seattle & Tacoma Interurban Railway Company, both New Jersey corporations, has been begun in the Court of Chancery at Newark, N. J. The suit is based on the contention that the Tacoma Railway & Power Company has no right to absorb the Seattle & Tacoma Interurban Railway Company by paying therefor a portion of its capital stock, inasmuch as the latter corporation is not a going concern, and that its franchises do not warrant a profitable business for many years to come.

WHEELING, W. VA.—It is announced that a four months' option at par has been given on the majority of the capital stock of the Wheeling Traction Company to T. H. Conderman, president of the company. The company is capitalized at \$4,500,000, made up of \$2,500,000 5 per cent bonds and \$2,000,000 common stock. The property includes the majority of the city lines in Wheeling, the Steubenville, Mingoe & Ohio Valley Traction Company, the Bridgeport, Bellaire & Martin's Ferry Railway and several lines under construction.

NIAGARA FALLS, ONT.—The Niagara, St. Catharines & Toronto Electric Railway, through the Dominion Securities Corporation, is offering for sale at 101 and interest \$150,000 5 per cent first-mortgage thirty-year bonds. The road was described in detail in the STREET RAILWAY JOURNAL for Sept. 7, 1901.



TABLE OF OPERATING STATISTICS

Notice.—These statistics will be carefully revised from month to month, upon information received from the companies direct, or from official sources. The table should be used in connection with our Financial Supplement "American Street Railway Investments," which contains the annual operating reports to the ends of the various financial years. Similar statistics in regard to roads not reporting are solicited by the editors. \* Including taxes. † Deficit.

Table with columns: COMPANY, Period, Total Gross Earnings, Operating Expenses, Net Earnings, Deductions From Income, Net Income, Amount Available for Dividends. Rows include companies like AKRON, O., ALBANY, N. Y., BINGHAMTON, N. Y., BOSTON, MASS., BROOKLYN, N. Y., BUFFALO, N. Y., CHARLESTON, S. C., CHICAGO, ILL., CLEVELAND, O., COVINGTON, KY., DENVER, COL., DETROIT, MICH., and YOUNGSTOWN, O.



## NEWS OF THE WEEK

## CONSTRUCTION NOTES

**SANTA MONICA, CAL.**—The Traction Electric Railway Company has been granted all necessary franchises to construct an electric railway through Santa Monica and Ocean Park.

**STOCKTON, CAL.**—H. H. Griffiths, manager of the Tesla interests, has been granted a franchise to operate an electric railway over different county thoroughfares by the Supervisors. The statutes prohibit the granting of a franchise over a county highway within ninety days prior or seventy days after a general election.

**LOS ANGELES, CAL.**—The Los Angeles Traction Company has applied for a franchise through Santa Monica. The company has also applied for a franchise to Pasadena by way of East Los Angeles.

**SAN LEANDRO, CAL.**—The Mayor has signed the ordinance granting to the Oakland Transit Company a franchise for the extension of its lines to connect with the proposed new Emeryville Ferry system between Oakland and San Francisco. When completed the new connecting links will unite compactly the Transit Company's system in Oakland, Alameda, Berkeley and suburban towns along the line of the Oakland, San Leandro and Hayward branch, and will put all these points in direct communication with San Francisco.

**SANTA ANA, CAL.**—The Pacific Electric Railway Company has begun work on its proposed line to connect Long Beach and Santa Ana. It is expected that work on the company's line between Santa Ana and Los Angeles will be begun soon.

**SANTA MONICA, CAL.**—The trustees of the town have recommended for passage the franchise ordinance granting W. S. Hook and his associates the right to build an electric railway here.

**SANTA CRUZ, CAL.**—The Supervisors have granted a franchise to W. J. Rogers for an electric railway to extend 5 miles from Watsonville to Camp Goodall, where it is to connect with a line of steamers to run to San Francisco.

**SANTA BARBARA, CAL.**—The application of the Consolidated Electric Street Railway Company for a franchise to construct and operate a street railway on Victoria Street, from Chapala Street to Rancheria Street, and on Bath Street, from Victoria Street to Sola Street, has been granted, and bids will be opened on Oct. 18.

**HARTFORD, CONN.**—The Bristol & Plainville Tramway Company has applied to the Railroad Commissioners for the approval of a proposed line from Bristol to Terryville. The extension will parallel the Highland Division of the New York, New Haven & Hartford Railroad Company.

**NEW HAVEN, CONN.**—It is stated that it is the intention of the promoters of the proposed electric railway between New Haven and Middletown, now being surveyed, to ask the coming General Assembly for a charter from New Haven to Willimantic, practically paralleling the Air Line division of the New York, New Haven & Hartford Railroad. It is further stated that this new road will connect at Willimantic with the proposed line to Southbridge, Mass., thus opening a through trolley route to Boston by the way of Southbridge and Worcester.

**BOISE, IDAHO.**—The entire system of the Boise Rapid Transit Company is to be improved. It is possible that the power facilities will be increased.

**STERLING, ILL.**—Material to be used in constructing the Sterling, Dixon & Eastern Street Railway is arriving on the ground, and the work of building the road will be begun at once.

**CHICAGO, ILL.**—The Council committee on harbors and bridges has been considering the matter of lowering the three tunnels under the Chicago River so as to offer less obstruction to navigation. Some advocate the abandonment and destruction of the tunnels; others their temporary abandonment pending future lowering and reconstruction, and others, lowering without interfering with their present use any more than necessary.

**EVANSVILLE, IND.**—The construction of the Evansville-Princeton Electric Railway has been begun at Evansville.

**EVANSVILLE, IND.**—The contract for building the power house of the Evansville & Princeton Traction Company has been let. It is to be located at Fort Branch, half way between this city and Princeton, and will cost \$72,000. The road will probably be in operation April 1, 1903.

**SOUTH BEND, IND.**—Application has been made to the Council by the Elkhart, South Bend & Chicago Railway Company for a franchise to build an electric railway over a specified route within the city limits. The company proposes to build a bridge across the St. Joseph River to cost about \$45,000, and has submitted to the city authorities a proposition to this effect. As an alternative proposition the company has agreed to contribute \$45,000 toward the erection of a structure by the city. The company is seeking a fifty-year grant, and agrees to permit such other companies as are granted franchises by the city to enter over its tracks.

**DAVIS, I. T.**—The Chickasaw Electric Railway Company has been incorporated to build the proposed electric railway between Sulphur Springs and Davis. The company is capitalized at \$50,000, and among those interested in it are: H. W. Stark and W. H. O'Brien, of Gainesville, Tex., and J. I. Coursey, of Claremore.

**WATERLOO, IA.**—The directors of the Waterloo & Cedar Falls Rapid Transit Company have made an appropriation of \$250,000 to cover the cost of constructing the extension from Cedar Falls to a point on the Chicago Great Western Railway, near Tripoli. The company has already purchased the rails for the extension, and it is expected that they will be delivered in a few weeks. Some of the right of way has already been purchased.

**MT. AYR, IA.**—The Des Moines, Mt. Ayr & Southern Railway Company, capitalized at \$600,000, has been organized to construct an electric railway from Mt. Ayr to Creston, a distance of 30 miles. It is the intention of the incorporators of the new company to make connections with the line now being constructed from Creston to Winterset by Lyman Waterman, of Omaha, Neb., and also to connect at Winterset with the line which the Des Moines Interurban Railway Company expects to build from Des Moines to Winterset. Two routes have been surveyed for the line between Mt. Ayr and Creston, one by the way of Tingley and the other by the way of Diagonal. The route via Tingley is favored, owing to the fact that there will be very few heavy grades. The farmers have become interested in the project and have agreed to donate land and also vote taxes in aid of the company. The officers of the company are: F. E. Sheldon, president; J. F. Wall, vice-president; H. C. Beard, secretary; Clyde Dunning, treasurer. These parties, with Lyman Waterman, constitute the board of directors.

**LOUISVILLE, KY.**—A company that has just been organized has arranged to lease from the Louisville & Nashville Railroad the Louisville, Harrod's Creek & Westport Railroad, the intention being to equip the road with electricity. The road is about 30 miles long, extending from Louisville to Prospect, and runs through a section of the country that is extremely fertile, and one in which many prominent residents of Louisville have summer homes. The company that has arranged to lease the road has perfected its organization and the following officers have been elected: Lafon Allen, president; Owen Tyler, first vice-president; Bethel Veach, second vice-president; W. N. Cox, secretary and treasurer; William F. Booker, Owen Tyler, Henry A. Bell, Bethel Veach, W. N. Cox, E. T. Halsey and Lafon Allen, directors.

**NAPOLEON, LA.**—John Marks, who represents the company that proposes to build an electric railway between Donaldsonville and Napoleonville, has applied for the right to build through Napoleonville.

**ROCKLAND, MAINE.**—The Rockland, Thomaston & Camden Street Railway is to be equipped with an automatic block signal system.

**AUGUSTA, MAINE.**—The Railroad Commissioners have received the petition for articles of association for the Auburn, Mechanic Falls & Norway Street Railway. The proposed road is to be 24 miles long, and will run from Auburn through Minot, Poland, Mechanic Falls and Oxford to Norway. Compressed air or electricity will be the motive power. The capitalization is \$700,000.

**OAKLAND, MAINE.**—The Railroad Commissioners have granted a certificate of necessity to the Waterville & Oakland Street Railway, thus making it possible for the company to build its proposed road.

**MAYNARD, MASS.**—Marcus A. Coolidge, of Fitchburg, has been awarded the contract for building the Lowell, Maynard & Acton Street Railway Company's line between Maynard and South Acton. The franchise calls for the completion of 4 miles of road by Nov. 1.

**FALL RIVER, MASS.**—The Old Colony Street Railway Company has asked the Railroad Commissioners to approve the company's locations in Bedford, Fourth, Lyon and South Main Streets and Plymouth Avenue.

**LAWRENCE, MASS.**—The Lawrence & Methuen Street Railway Company has petitioned the Railroad Commissioners for approval of locations on Howe and Maple Streets and for private land locations near the same streets.

**AMHERST, MASS.**—The Amherst & Sunderland Street Railway Company has asked the Railroad Commissioners to approve locations in this town from the village toward the Pelham line; also for authority to extend its line into Pelham.

**WEST BROOKFIELD, MASS.**—The Hampshire & Worcester Street Railway Company has asked the approval of the Railroad Commissioners for private land locations near Ware and Milk Streets to avoid curves and grades; also for approval of locations on Ware, Milk, Front and Central Streets and the Ware Road.

**MILTON, MASS.**—The final hearing on the petition of the Milton Street Railway Company for the approval by the Railroad Commissioners of a location granted by the Selectmen of the town on July 23, 1902, was held on Sept. 26. Chairman Jackson, of the Railroad Commission, intimated that the Board would not go into question as to whether abutters had acquired a right of prescription in a part of the highway where a location had been granted, but would leave that to the courts preferably. Witnesses then testified as to the public convenience and necessity of the proposed locations and their general validity. The Commissioners will shortly make a trip to Milton to go over the ground, and will then decide the question.

**BOSTON, MASS.**—It is stated that the Massachusetts Electric Companies have ordered, and will soon have installed in their station at Newport, R. I., a steam turbine of 750 hp, made by the General Electric Company.

**BOSTON, MASS.**—The contract between the city and the Boston Elevated Railway for the use of the East Boston tunnel and the Washington Street subway has been signed. The term is for twenty-five years, and the rental is to be 4½ per cent of the cost of construction.

**SHARON, MASS.**—On Sept. 30 the Railroad Commissioners gave a hearing on the petition of the North & Taunton Street Railway Company for permission to extend its lines into Foxboro and Sharon. The company's counsel explained that it was now operating in Mansfield and Easton, adjoining towns, and that it was the purpose to secure, as far as possible, private land location into East Foxboro and from East Foxboro to Sharon. The new Canton, Norwood & Sharon Street Railway asked the Commissioners' position; if they learned that the company had already asked locations in Sharon from the Selectmen, and Chairman Jackson replied that as the approval of the Commissioners simply gave the petitioning company the right to ask locations the commissioners would assume that the choice between several companies simplified the task of the Selectmen.



**SAGINAW, MICH.**—Large quantities of material are being delivered at Bridgeport for the Union Traction Company, which is building a line from Saginaw to Flint.

**LANSING, MICH.**—The Council has passed the franchise for the Lansing, St. Johns & St. Louis Railway Company, restricting the route over which it may lay its tracks to Center, Saginaw and Cedar Streets.

**KANSAS CITY, MO.**—The County Commissioners of Wyandotte County have granted a franchise to the Kansas City & Bonner Springs Railway Company to operate an electric railway between Kansas City, Kan., and Bonner Springs, a distance of 17 miles. The company intends to have its western terminus at Topeka. The provisions of the franchise are that the company shall commence the building of the road within six months from the acceptance of the franchise, and shall complete it within eighteen months.

**KANSAS CITY, MO.**—The Kansas City & Olathe Electric Railway Company has completed about 10 miles of grading out of a total of 18 miles, and is now prepared to receive bids on ties and good 60-lb. relaying steel rails. The road will extend from Kansas City, Mo., to Olathe, Kan., and will later be extended to Topeka and Lawrence, Kan., about 50 miles farther west. The company may be addressed at the Century Building, Kansas City, Mo.

**CAPE GIRARDEAU, MO.**—The Cape Girardeau & Jackson Railway Company has been organized by local and St. Louis capitalists to take over the Citizens Street Railway Company, extending the lines of the company to Jackson. The company will have the contract for lighting the city. The whole length of the line will be about 18 miles. A bond has been filed by J. S. Lapsley with the Mayor in compliance with the terms of the ordinance, and work will be commenced soon.

**KANSAS CITY, MO.**—The Kansas City & Bonner Springs Railway Company, which was recently chartered under the laws of Kansas, has organized, electing the following officers: Ex-Senator Edwin Taylor, president; C. F. Hutchings, vice-president; F. W. Breidenthal, secretary and treasurer. The officers and Samuel Mayer and H. H. Anderson were made the board of directors. The company will operate in Wyandotte County under a franchise that has just been granted. The company has attained control of Bonner Springs Park with an area of 80 acres, and will equip this with golf, tennis, baseball grounds and for other games and prepare it for camping parties, erecting pavilions and cottages. The plan is to begin work at once.

**ST. LOUIS, MO.**—The prolonged contest for a fifty-year franchise for a street railway over the Olive Street road from the city limits to Creve Coeur Lake, in St. Louis County, has terminated in the award of the franchise to the St. Louis County Street Railway.

**ST. LOUIS, MO.**—The Brentwood, Clayton & St. Louis Railroad Company has been granted permission to transfer its right and franchises to the St. Louis & Kirkwood Railroad Company, which company in turn transferred the property to the St. Louis & Suburban Railway Company. The transfers were merely formal matters, as the Suburban has been operating the Brentwood line for several years.

**ST. LOUIS, MO.**—All cars of the St. Louis & Suburban Railway will be equipped with power brakes of a pattern recommended by the committee of the Board of Public Improvements. The members of the committee were notified Sept. 25 by the company of this decision, and were invited to witness a test of one of the brakes. The cars have already been fitted with the new brakes, and an order has been placed for 100 more. There are 130 cars on the system, all of which, Mr. Jenkins, the general superintendent, assures the committee, will be equipped with the brake by the time the new track work on the line is completed, about three months hence. The members of the committee are greatly gratified by this action.

**ST. LOUIS, MO.**—The cars of the St. Louis Transit Company are to be equipped with the Newell electric brake by the Westinghouse Electric Company. Experiments will be made at first with about a dozen cars representing the different styles of vehicles for which special brakes will have to be built. It will cost \$400,000, or \$400 each, to equip the cars with brakes, and at least a year will be required to complete the work.

**PORTSMOUTH, N. H.**—Another in the network of electric railways running out of this city was opened a few days ago when the Portsmouth, Greenland & Exeter Electric Street Railway was placed in operation. Now only Newcastle and Newington remain of the towns unconnected with this city, as a center for the railroads.

**DOVER, N. H.**—The Dover, Northwood & Concord Electric Railway Company, which plans to build an electric railway to connect Dover, Northwood and Concord, has perfected its organization, electing the following officers: Elisha R. Brown, president; Arthur G. Whittemore, vice-president; Wallace D. Lovell, treasurer; Thomas H. Dearborn, assistant treasurer; George D. Barrett, clerk.

**WHIPPANY, N. J.**—The Whippany & Passaic River Railroad Company, capital \$375,000, has been incorporated to build a railroad 7 miles long from Whippany to Essex Falls. The incorporators of the company are: Edward M. Shepard, of Brooklyn; Herman Behr, Robert D. Foote, W. W. Cutler, of Morristown; Richard W. McEwan, Robert B. McEwan, Jesse L. McEwan, of Whippany, N. J.

**TRENTON, N. J.**—The Trenton, Pennington & Hopewell Street Railway Company has been incorporated to construct and operate the proposed Hopewell extension of the Trenton Street Railway Company's lines. The proposed road is to be 12 miles in length and it will extend through the townships of Hopewell and Ewing and the boroughs of Hopewell and Pennington. The company has an authorized capital stock of \$250,000, divided into shares of a par value of \$50.

**TRENTON, N. J.**—The Camden & Trenton Railway Company has been granted a perpetual franchise for the construction of street railway lines on South Warren Street and other streets necessary to reach its present terminus at Broad and Stanton Streets. The gage of the track will be 5.2 ins., and the company will pave between the rails and for a distance of 1 ft. each

side, except where the streets are already paved. The company will be obliged to pay to the city 3 per cent of the gross receipts after ten years. The extension will be about 2 miles long, and it is understood that work will begin very soon. Ordinances covering these streets were passed by the Council last December, but the Trenton Street Railway Company carried the matter into the courts. The Camden Company finally confessed judgment in order to escape further delay, and this caused the introduction of the second set of ordinances. The Trenton Company also wished South Warren Street, and had an ordinance before the Council to that effect. The Camden Company was willing to allow any other company to use the street by joint arrangement, but the Trenton Company would not make the same arrangement, so the franchise was given to the Camden Company. It is understood that the Trenton Company will carry the case into the courts on the ground that the entrance of the Camden & Trenton Road is inimical to its interests. The Camden & Trenton Company has maps filed with the Secretary of State covering routes in all parts of the city.

**SANTA FE, N. MEX.**—Joseph E. Lacombe has been granted a franchise for the construction of an electric railway here. The franchise grant is for a period of fifty years.

**BUFFALO, N. Y.**—The Buffalo & Depew Railway Company has applied to the Board of Trustees of the village of Lcroy for a franchise to extend its lines through the village. A hearing will be given on the application on Oct. 16.

**NEW YORK, N. Y.**—It is said that the New York & Brooklyn Railroad Company, of which G. S. Drummond is president, is preparing to begin work on its proposed tunnel between New York and Brooklyn. Several large parcels of real estate have recently been transferred to the company, it is said, and the announcement has even been made that the tunnel will be completed by July 16, 1904. The estimated cost of building and equipping the line is placed at \$6,000,000. Officers of the company are quoted as saying that \$4,500,000 has already been subscribed.

**MEDINA, N. Y.**—The Union Traction Company, capitalized at \$600,000, has been incorporated to operate a street railway 50 miles in length, from Batavia, Genesee County, to the shore of Lake Ontario, near Olcott, Niagara County. The directors of the company are: Isidor H. Gobbelle, Fred L. Downs, Darius Fuller, Samuel Laudauer, of Medina; Joseph W. Holmes, of Batavia; Frank A. Pixley, of Alabama; Howard Hendrickson, of Albany.

**NEW YORK, N. Y.**—Plans have been filed at the Bureau of Buildings, Manhattan, for two three-story brick sub-stations for the underground rapid transit road, to be built, one at 29 to 33 City Hall Place, 58.2 ft. x 99.9 ft.; the other at 108 to 110 East Nineteenth Street, 56 ft. x 91.10 ft. They will be built of granite and limestone with terra cotta trimmings. The cost is placed at \$115,000—\$60,000 for the City Hall Place power house, and \$55,000 for the Nineteenth Street power house. Plans have also been filed for an one-story brick inspection shed, to be built on the north side of 148th Street, 120 ft. east of Seventh Avenue, being 338 ft. front by 199.10 ft. deep. This building will be used for the inspection of cars, etc., and will cost \$95,000.

**HAMILTON, OHIO.**—The County Commissioners of Butler County have granted a twenty-five year franchise to J. C. Hooven for the Cincinnati, Hamilton & Indiana Traction Company, which plans to build an electric railway from Hamilton to Oxford and College Corner; thence into Indiana. The road is to be completed July 1, 1904.

**NEW PHILADELPHIA, OHIO.**—Major C. E. Mitchner, who financed and built the Ulrichsville-New Philadelphia Railway, now a part of the Tuscarawas Traction Company's system, has asked the County Commissioners for a franchise along the highway from New Philadelphia to Newcomers-town. The proposed line will pass through Beidler, Tuscarawas, Seventeen, Port Washington and Glasgow.

**CANTON, OHIO.**—After a controversy lasting many months, the Stark Electric Railway Company has secured a franchise enabling its cars to reach the center of Canton without making a traffic arrangement with the Canton-Akron Railway Company. The line will secure entrance over Orchard, Second and Walnut Streets, with a downtown loop.

**NORWALK, OHIO.**—The Lake Shore Electric Railway is laying new turn-outs and double tracking a portion of its line through Norwalk.

**SPRINGFIELD, OHIO.**—The Springfield, Piqua & Sidney Traction Company has applied for a franchise over Bechtel Avenue into Springfield. The company claims to have secured all necessary private right of way between Springfield and Piqua.

**BELLEFONTAINE, OHIO.**—The Urbana-Bellefontaine Railway is placing poles and stringing wires in Bellefontaine. The franchise calls for the operation of cars within the city by Dec. 1. It is probable that the company will erect a temporary power house and operate city cars to comply with this provision. The road is the northern extension of the Dayton, Springfield & Urbana Railway.

**BRYAN, OHIO.**—The People's Rapid Transit Electric Railway Company, which proposes to build from Toledo to Greenville, has obtained a franchise through Bryan.

**LIMA, OHIO.**—D. J. Cable, who has promoted several electric railways in this section, is working on preliminary plans for a line to extend from Toledo to Cincinnati by way of Paulding, Defiance and Van Wert. The line would connect at the latter place with the Fort Wayne, Van Wert & Lima Railway, of which Mr. Cable was one of the promoters.

**DELAWARE, OHIO.**—Pittsburgh capitalists have become interested in the Delaware & Magnetic Springs Railway. It is proposed to erect a large hotel at Magnetic Springs, and it is claimed that work on the line will start this fall.

**TOLEDO, OHIO.**—Mayor Jones has been elected a director of the Toledo, Hicksville & Fort Wayne Railway, succeeding J. B. McAfee. George Yesbera, of Montpelier, succeeds J. B. Ransom as a director of the company, and J. Q. Files, of Wauseon, has been elected a director. This road will connect with the Toledo & Indiana Railway at Hicksville.