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EDITORIAL NOTICE

Street railway news, and all information regarding changes of officers, new equipments, extensions, financial changes and new enterprises will be greatly appreciated for use in these columns.

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Fare Collection

The Brooklyn Bridge continues to develop troubles of its own, and we now have the dictum of Commissioner Lindenthal that things cannot be materially better until there are more bridges. He might go further and admit that they are likely to grow worse, if only for the inevitable increase of traffic, for which nobody is to blame. One interesting measure of relief just adopted is to let the Manhattan to Brooklyn passengers, who travel by the Bridge trains, drop their tickets in the box at the arrival end of the trip, and we are rather curious to see how this works out. We have sometimes wondered whether movement on the Bridge would not be materially facilitated if nobody could buy tickets on it and had to get them elsewhere so that there could be absolutely no blocking at ticket barriers. Maybe this is a little too radical a change and with the limited train service possible under present conditions danger might arise from the overcrowding of the station platforms. Yet it is virtually standard street railway practice and steam commuter practice. Not a soul crossing the Bridge on a trolley car has to bother with going to a ticket office, and Long Island Railroad commuters on it have their little books of coupons all ready. If every street car passenger at the Bridge had to go to one or two wickets and buy a ticket, we should fear to contemplate the consequences. In fact, except for the excellent street car service over it, well managed despite every obstructive policy leveled at the trolley management, Bridge transportation for Brooklynites is still only a half-solved problem.

The Overworked Trolley

The service that is being obtained from trolley wheels operating under conditions which require them to conduct very heavy current would have been surprising to any electric railway man a few years ago, and it is only the fact that practice has brought us gradually up to the point where trolley wheels are in daily operation carrying currents of 200 to 800 amp. that little is thought about it. Considering the contact area between the trolley wheel and wire and the amount of contact on the journal of the wheel itself, the duty performed by the trolley wheels in some localities is wonderful. On a number of interurban roads, where heavy cars are used, the trolley is called upon to carry from 300 to 400 amp. during acceleration, and 150 amp. to maintain the car in motion a full speed. To add to the severity of the service, the speed is usually high, and calls for an enormous number of revolutions per minute on the part of the largest trolley wheels that can be used, and this, with rather indifferent lubrication. As an example of even more severe service on the trolley wheel, the Oak Park extension of the Lake Street Elevated Railroad in Chicago may be cited, where elevated trains are run over the surface for a considerable distance and draw all their current through one trolley wheel on the motor car. Here the trolley wheel is likely to be called upon to conduct as much as 700 amp. if the motorman turns on current rapidly enough. It would, perhaps, be going too far to say that the trolley is an entirely satisfactory device for such heavy currents at high speeds. The fact that the third rail has been determined upon for a number of recent interurban roads, shows that the trolley is hardly entirely satisfactory for heavy railway service. The wonder is that it is as satisfactory as it is. The wear, of course, is very rapid, not only from the burning of the groove of the wheel where contact is made with the trolley wire, but from bearing wear, which is increased by occasional burning between the axle and the wheel. The third rail offers the most practical solution, of course, in most cases where the trolley has reached its limit as a means of conducting current to cars, though possibly two or three bow trolleys in multiple, of the kind which is so commonly used in Europe, would make it possible to use overhead work for heavier service than it has been in the past, where the adoption of the third rail for some special reason might be very objectionable. A multiplication of the American form of trolley pole on top of a car would make a combination too difficult to handle for everyday service.

The Passing of the Mule

Where would the modern street railway have been but for the mule? If Christopher Columbus was the first American advance agent, surely the mule can also lay claims to having been the pioneer of the street car. This fact has been duly recognized with typical Southern generosity at El Paso, Tex., where the trolley has just gone into operation. On the first car that went over the road stood a little brown mule, and painted on a long banner at the side were the words: "Reward of thirty-five years of faithful service." The reward seems rather scant, if it consisted in one deadhead ride, but we are glad to understand that Mandy is now let out to grass, only to be called upon when the motors happen to break down. We hope that some day the grave of the first mule that ran the first American street car will be duly dignified with a monument. Less deserved memorials are in existence. The only trouble would be in locating the mule.

Injuries, Perjuries and Juries

Under any circumstances the lot of the average juror is not a happy one, but his fate is less than ever to be envied when he has to size up the actual truth in some of the actions for injury brought against the street railway companies. "It is to laugh," as one comedian sings, but it is also to weep, as the marvelous stories of physical damages sustained are told before the occupants of the jury box. We do not discredit these yarns, for accidents have been known to happen where the passenger was not to blame, but the occasional suspicion is aroused that imagination plays a very large part in human affairs. One case we noted in the daily prints the other day involved heavy damages, where the complainant, indirect descendant of a famous fiddler, could apparently no longer play the violin, because he had hurt his feet, for which the street railway company was to blame. We can only hope that the plaintiff got all he deserved. Another case reported last week concerned a ballet master, who, being dragged along some distance by a car, wanted \$20,000 because he could no longer dance or give valuable terpsichorean instruction. It was testified, however, per contra, by two witnesses, one of them actually a "prima ballerina assoluta," that only lately they had seen the sorely injured instructor engaged in the gay art of high-kicking and making "cart-wheels." We are, perhaps, not so much an authority on this brand of wheels as we ought to be, but they are obviously quite a superior rotative article. Another young lady, an unpretentious chorus girl, testified that she had seen the lame and crippled ballet master giving active lessons, and said: "He could kick just as high as any of the girls, and some of them were very high flyers." What the limping teacher could do before he got hurt must evidently have far transcended the limits of the "split," but it is natural that doubt should be stirred up in the ordinary mind as to whether in toe or ankle, flexing knee joint or supple hip, the complainant really sustained the hurt that is expressed by twenty thousand good dollars.

Double Flanges

Occasionally the car wheels on a road will develop a thin flange on one side of a car, with a double flange on the other. A case of this kind was recently brought to our attention where the superintendent had tried every remedy in his list without relief. Superficial observers had told him "one wheel is larger than the other," or "one wheel is softer than the other," or "the car is out of square," or "it runs always in one direction." Now it happened that none of these answers fitted the case. The size of the wheels nor their relative softness could not have had anything to do with it because, while turning the axle end for end reversed the wear, the thin flanged wheel began to get a double flange and the wheel with the double flange grew sharp. The superintendent then thinking that the axles were not parallel nor square, took unusual pains to square up the trucks and afterward arranged gages so as to test them daily. His comment upon the result was, "I might as well have painted the roof." The wear went on as before. The super-

intendent may, however, have the doubtful satisfaction of knowing that other companies have striven with the same problem without satisfaction. We remember that the Third Avenue line in New York, when operating with cables, had great trouble in this way. One side of a car developed the thin, and the other the double flange. This took place in spite of the fact that the cars were changed daily, end for end. They regularly turned the axles when they found cars which developed this fault.

A steam railroad man made a suggestion on this subject recently which is worth investigation. It was to the effect that the unequal space within the boxes may have something to do with the matter, by permitting some brasses to have more play than others. When a car is standing the brass would settle into a normal, or central, position. When in motion the brass might shift so as to throw the axle out of square. As this is the first possible reason that has yet been suggested, it is worth investigation. So far as we know it is the only theory which has not already been investigated and found wanting. Will some of our readers who have been puzzled and exasperated by double flanges, etc., investigate and report on this new theory?

Grounds for Ejectment

As if there were not already trouble enough in putting passengers off cars, State Senator Sullivan has revived at Albany the crazy bill providing that if a street railway company does not furnish a seat 14 ins. in width it shall not collect a fare. The behavior of the Senator himself shows what would happen, for only a few days ago he got into a prize fight with an Albany conductor over this very point. Such a law simply cannot be enforced so long as the public insists on taking "the next car," and that is just what the American public proposes to do to the end of the chapter. It is mere folly to suppose that the law would be a means of compelling a company to put on more cars, when the tracks are already so crowded that the cars can be counted by the scores every block or two. Confusion worse confounded could only follow the efforts of a conductor trying to keep tab on passengers who had been standing "free" and had then slid quietly into the first vacant seat. Senator Sullivan ought to know better, and probably does.

Another question of no seat, no fare, or contrariwise ejectment for no fare, came up recently in St. Louis, where a conductor refused to accept what purported to be a smooth nickel and put the passenger off. In this case the court has decided that a good nickel is a good nickel, and that hence the conductor was wrong. Now this involves trouble enough in itself, for there are too many coins in circulation that have seen better days, and ought to be retired on the score of difficult identification. "As thin as an Elizabethan shilling" is, we believe, not an unknown descriptive of skinny skeletons in England, and when coins get that far, a poor conductor ought to be excused from taking them, just as he ought not to be tolerated in handing them out. The amount of trash in the way of old, thin coin that one can accumulate from waiters in Europe is startling, and the reason probably is that there are so few street car systems on which guileless natives can work the stuff off. The itinerant foreigner gets it instead. A third point of view on the ejectment question is brought up in a recent New York Metropolitan suit, in which the Supreme Court has held that, if required, a passenger must change cars or go to prison. In this case, some of the numerous extra cars put on to accommodate the theater public were being taken off, and the passenger refusing to change had to be hauled in the car to the house, where he still stuck to his seat, and whence he finally went to jail. Doubtless he had a sense of fighting for justice, but here again he forgot that in trying to resume its regular schedule the company was simply doing that which was of benefit to the greater public, and that it would not maintain a speedy headway with fifty or sixty extra theater cars on its line. To quote the language of the court: "It would be a travesty on justice to say that a judgment should be found against this company in this case under the circumstances disclosed. The request of the passenger was a most unreasonable

one, and that of the railway company a perfectly reasonable one, and in refusing to move from that car into another the plaintiff was guilty of disorderly conduct."

Running Stationary Motors from Grounded Circuits

A few years ago it was a common thing to see 500-volt stationary motors run from grounded railway circuits. By this practice the electric railway was enabled to give an electric power service to many power users that would otherwise not have been able to secure electric power because of their distance from any direct-current electric light circuit. Often these customers would be too scattered to be reached profitably with special power circuits, but when run from the nearest railway feeder could be taken on with advantage to all concerned, because the trolley lines were already in existence in all the principal streets, and service wires could easily be run to stationary motors in almost any location in a town. The rule which was adopted by the underwriters, and later incorporated in the National Code, was at that time in existence, but was not enforced, owing to the lack of underwriters' electrical inspectors.

The time arrived, however, when the underwriters' inspection was more rigid and extended outside of the few large cities to the smaller towns and cities, where the running of stationary motors from railway circuits was common. Then came a day of reckoning. Street railway companies were obliged either to give up this business, or to adopt some other way of handling it. In some cases a separate power circuit, non-grounded, was put in. This, of course, meant practically abandoning the old service in its entirety, as a separate generator must be run for the power circuit. Another plan adopted, where the insurance inspector was not very rigid in his requirements, was to run a complete all-metallic power circuit, but connect it to the railway circuit bus-bars at the power house. The motors were, of course, in this case still on a grounded circuit, the main difference being that the ground was at the station instead of near the motor, as was the case with the motors run direct from the trolley wire or railway feeder.

We now come to perhaps the most interesting solution of the problem, and one which would seem to be the most feasible and least open to engineering criticism for places where it is expected to do a large amount of power work of a nature too scattered to make it profitable for a complete non-grounded power service. The plan is to enclose the motors in a brick chamber or "oven," which renders it sufficiently harmless in the eyes of the underwriters to make the use of motors, run from railway circuits, permissible, where proper provisions for grounding entirely away from the building are made. The expense may be considerable, but it is sometimes the choice of several evils. From an electrical standpoint there is room for considerable discussion as to the necessity for the rule absolutely forbidding, under any pretense, lighting or power from railway circuits. Under such circumstances it cannot by any means be called poor engineering to adopt plans for circumventing the rule if they can be made acceptable to the underwriters.

The Belgian Government "Light Railways"

Advocates of municipal and government ownership will be interested in the plan followed in Belgium in developing the light railways in that country by which State and municipal aid has been secured on a large scale in the construction of such lines, while the operation of such systems remain in private hands. Light railways designate a kind of road which has no exact parallel in this country, but as the term is used in Belgium it means local country lines nearly always of narrow (1 meter) gage, sometimes interconnected, but quite as often isolated, which are built where standard gage trunk lines with their more substantial construction and heavier rolling stock would not be considered profitable. Narrow gage steam lines, and these Belgian roads are nearly all operated by steam, are not regarded with favor by American

capitalists. Being so unpopular in this country, at first sight it may seem a little strange that an extensive system of narrow gage roads nearly 1500 miles in extent should have been built in a country so flat as Belgium, and intersected as it is by trunk lines of standard gage. Nevertheless the experience with electric inter-urban lines in this country has shown that there is a field through the country, and a large field, for lighter roads than those used in heavy trunk service, and while steam motive power would not be used for such a system of roads in this country, most of these roads were built before the practical advantages of electric power for service of this kind had been demonstrated.

In the last issue of the Annals of the American Academy of Political and Social Science, Prof. Nerinx, of the University of Louvain, of Belgium, describes the financial plan and organization of the Société Nationale des Chemins de fer Vicinaux, which owns practically all of the light railways of Belgium. This company has an option for a year on the construction of all the light railways authorized by the government, which amounts to practically a monopoly, as when the company does not accept the franchise the line is usually not worth building, and no one else will undertake it. When any such new line is built the company issues new shares of stock to pay for the construction. The new shares bear a special number and the interest on them must be paid out of the earnings of the new railroad only. The company is a somewhat curious combination of a branch of the government and a private enterprise. According to statutes, two-thirds of each new series of stock must be subscribed for jointly by the government, the provinces and the municipalities interested in the proposed road. The subscription of the national government is not allowed to exceed one-half of the capital required. The provinces and the municipalities may subscribe for as much of the remaining capital as they wish, and any left unsubscribed, but not exceeding one-third of the total amount, may be taken by private investors. The latter shares, like those of any stock company, are transferable at will, but those owned by the provinces and municipalities can only be transferred by special authority of the government. The private shares must be paid for when taken, but the government subscriptions may be paid if desired in ninety yearly instalments, calculated on the basis of 3½ per cent per annum. When this latter course is followed, which is not usually the case, the company issues 3 per cent debentures to a corresponding amount to the municipal stock subscriptions, to raise the immediate capital, and the interest and sinking fund of these bonds are provided for out of the yearly instalments of the subscribing public bodies so long as the earnings of the company are not able to cover them.

The National Company is a construction company only, and each line built by it is leased fully equipped to a contractor whose terms of lease carefully provide for the improvement of train service, rates of transportation, repairs and maintenance, and the apportionment of net earnings. These operating contracts are made for thirty years. Prof. Nerinx states that this plan of leasing the operation of the lines to local contractors works very well. It frees the National Company from running a large number of disconnected railways scattered all over the country and insures a good local service, which is generally by local business men interested by the financial success of the concern. As the necessary operating capital is not large, it is obtained easily by the contractors. The management of the company is in the hands of six directors, three elected by the stockholders, and three, including the president of the board, appointed by the government. The latter also appoints the general manager. At the end of 1900, according to Prof. Nerinx, the company had built or was engaged in the construction of 104 lines of roads covering 1490 miles, and had a capital of \$22,821,800, subscribed for as follows: State, 33.7 per cent; provinces, 28.1 per cent; municipalities, 35.7 per cent; private investors, 2.5 per cent. The average rate of profit for the year on the capital subscribed was 3.3346 per cent. Electricity is used on 47 miles of track.

Progress of the Lansing, St. Johns & St. Louis Railway

The northernmost of the network of electric interurban lines which is spreading over the State of Michigan is the Lansing, St. Johns & St. Louis Railway. Twenty miles of this road, from Lansing due north to St. Johns, is completed, and steam construction trains have been run over the route from end to end for some time.

The contract for building and equipping the road complete is with the Arnold Electric Power Station Company, of Chicago, and the line promises to have a future historic interest as being the one upon which the new alternating-current system, invented by Bion J. Arnold, president of the company, will be first tried. Little has been announced concerning the new scheme as yet, except that it will do away with rotary converter substations, take single-phase, alternating-current direct from a single trolley wire at high voltage, and have single-phase motors on the cars running continuously. Naturally much interest is felt in the engineering world over the outcome of Mr. Arnold's experiment, and it is to be hoped that it will prove a satisfactory solution of operating electric railways over long distances without the use of rotary converter substations. Mr. Arnold's standing as an engineer lends confidence to the belief that it will. It is understood, however, that Mr. Arnold regards the plan as to a large extent experimental until its success has been demonstrated by practical operation.

The road affords the only direct inlet to Lansing, the capital of the State, from the north, and when completed to St. Louis and Alma will afford to a considerable territory a direct way of reaching Lansing, where only an indirect route has existed before.

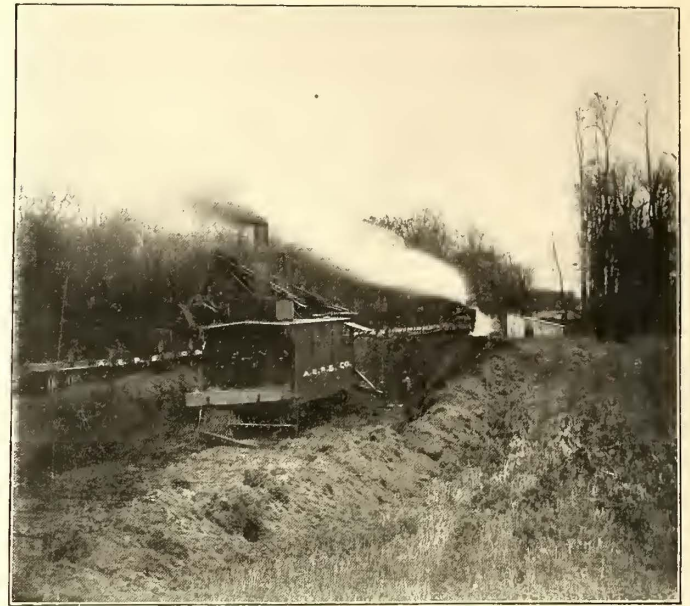
The accompanying engravings are from photographs taken by the Arnold Electric Power Station Company during construction, and show the character of the work, and also how well equipped the contracting company is for carrying out railway construction of this kind. The contract included the engineering as well as the actual construction. The surveying location was carried out under the direction of H. L. Cleverdon, civil engineer of the Arnold Com-

pany, and H. B. Quick was superintendent of construction. E. B. Arnold has had charge of the material yard.

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The road is in a good farming country, and one in which it is expected to raise large quantities of sugar beets upon the comple-

tion of the road. There are beet sugar factories at Lansing, and the electric road will handle beets from the farms along the way in carload lots. The building of the road has also settled another



STEAM SHOVEL AT WORK

important question for the farmers, viz., how to dispose of surplus milk. The Michigan Condensed Milk Works at Lansing, and the electric road to haul milk there, solves the surplus milk problem.



VIEW AT DE WITT, SHOWING BIG FILL

The construction follows closely that of a substantial steam road. Indeed, it is expected to haul steam road freight cars over it when completed. Although the country is in general level, there are some considerable cuts and fills, and in

one case many carloads of dirt had to be dumped in the right of way to fill up a sink hole, caused by an underground lake or quicksand. The largest cut on the line is 2000 ft. long and 13 ft. deep,

Progress on East Boston Tunnel

Plans for Section "C" of the East Boston Tunnel have been completed by the Boston Transit Commission, and are now on exhibition for the benefit of contractors bidding on the new work. Proposals are to be opened on Feb. 25 so that the contract may be awarded a few days later and work begun by March 10.

Section "C" is 740 feet long, and begins at the terminal of the harbor section, near the corner of State Street and Atlantic Avenue, ending about at the junction of India and State Streets, between the Custom House and the proposed Board of Trade building. Work will begin at the upper end of the section and proceed toward the harbor. A shaft will be sunk in State Street opposite India Street, and when the tunnel is completed, this shaft will be changed into an air chamber, the first ventilation arrangement on the Boston side of the harbor, excepting the station at the foot of State Street, which will be equipped with apparatus for introducing fresh air into the tunnel and carrying foul air out of it.

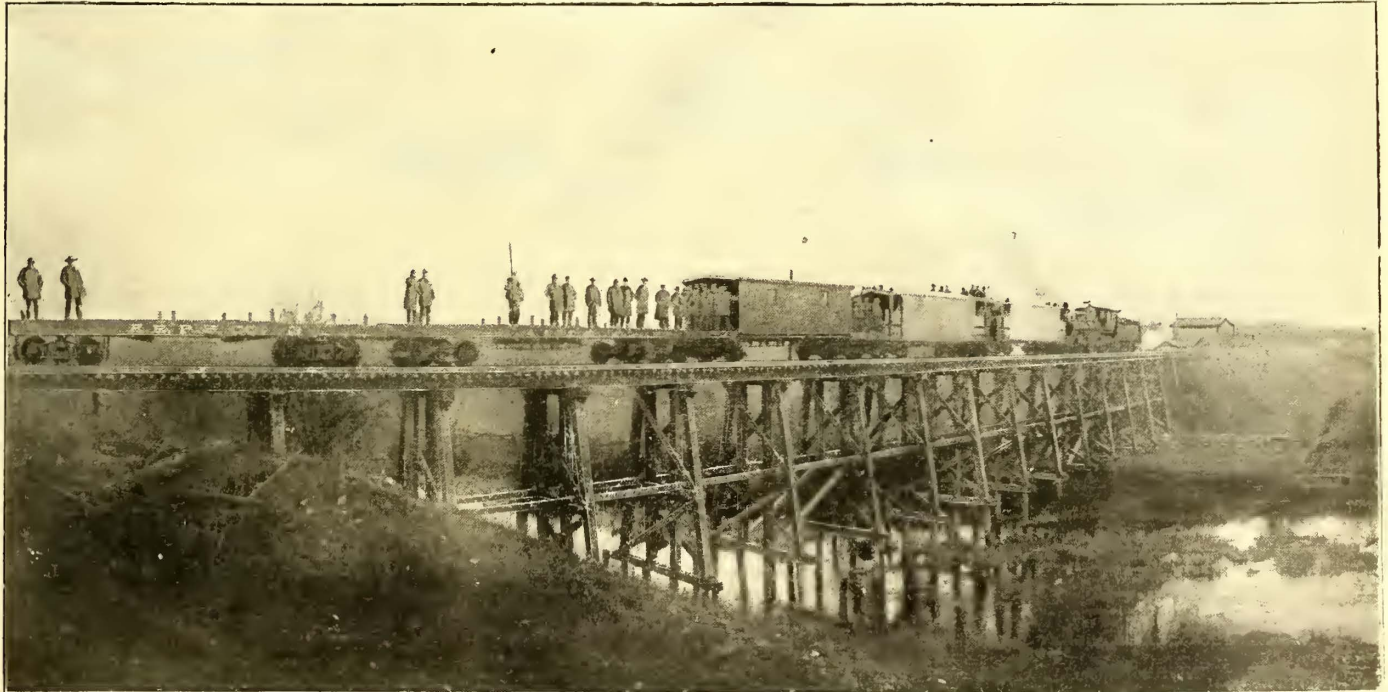
Six borings were made in State Street along this section to determine the character of the soil, and the material was found to be similar to that which the tunnel will traverse under Boston Harbor. At the shaft opposite the Custom House there are about 17 feet of filling, including woodwork, probably some wharf; then there are 10 feet of hard yellow clay, and below that a strata of hard blue clay to a point at least 70 feet below the surface. The tunnel foundations required no deeper boring. At this shaft the rails will be 35 feet below the surface, and the track will descend on a 4 per cent grade to meet the harbor section at the foot of State Street, where the level is 21 feet deeper. About 150 feet of the new station platforms where the sections meet will be included in the new section. The platforms are to be built at the sides with both tracks passing between them at the same level. There will be no loop at this station.

Conduits, gas pipes and sewers in State Street are now being relocated to make room for the shaft. Beyond the shaft no underground structures will be disturbed as the shaft passes below them, and there is no knowledge of any larger rocks in the route. Air pressure will be introduced as soon as practicable for supporting buildings, the foundations being also strengthened by masonry and



VIEW OF TRACK

and through a very tough soil to handle. At Look-Glass River is a bridge 33 ft. high and 300 ft. long. Twenty-five thousand yards of material were used in bringing the 500 ft. next to the bridge up to



DE WITT TRESTLE AND CONSTRUCTION TRAIN

grade. A number of marshes have been encountered on the right of way which required an immense amount of filling. Italian labor has been employed on the construction, and one of the sights along the road is the Italian village.

At a meeting of the directors of the Brooklyn Rapid Transit Company, held Feb. 11, it was decided to ask the stockholders' authority for an issue of \$150,000,000, 4 per cent bonds. The bonds will be used to retire outstanding loans, and for improvements.

steel rods before tunnel construction begins. State Street is so narrow at the shaft that its entire width is taken up, including portions below each sidewalk. The distance between the building lines is but 7 feet greater than the exterior diameter of the tunnel.

The shortness of this section is here in part to the commission's uncertainty in regard to the Legislature's action upon the Washington Street subway. The decision in regard to the latter does not affect the tunnel location east of the Custom House on State Street. Borings have also been made during the last few weeks on Washington Street in the vicinity of State Street.

A New Boltless Rail-Joint

On the electric street and mountain railway at Linz, Upper Austria, there has been in use since November, 1900, a rail-joint which differs from most other detachable bonds by being constructed without any bolts, making use of the well-known wedge principle. This boltless joint, which grasps the base of the rail at the joint, and is therefore called "rail-shoe" by the inventors, is equally well adapted for rails in paved streets as well as for exposed track. It consists of only three parts, a piece B, Fig. 1, which fits into one side of the rail-base; of a second, larger piece A, which fits around the opposite side of the rail-base, and extends be-

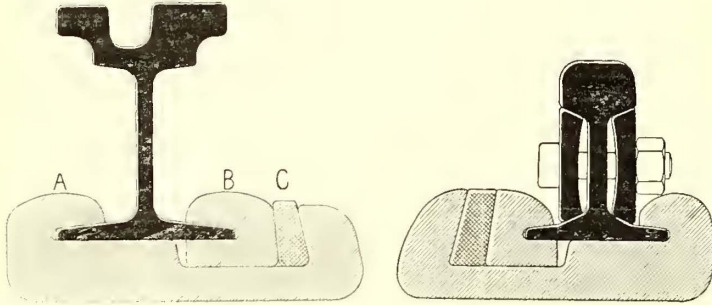


FIG. 1.—SECTIONS OF BOLTLESS RAIL JOINT

neath the latter and around the smaller piece B, where it is so shaped as to permit a wedge C to be driven in.

The joint can be put down by four men. They require, besides a portable blast furnace, very few tools. The shoes are constructed in the following manner:

One man brings the large pieces A to a red heat in the furnace, Fig. 2; a second man fastens the piece B by striking it from the side, inserting a piece of sheet zinc 0.2 mm in thickness between the contact surfaces; the same man assists in inserting the wedge by holding a heavy hammer against the surface. A third man takes the glowing piece A out of the furnace and places it in position directly opposite the smaller piece B. He then strikes it with a heavy hammer and inserts the wedge C. Before this act, however, the second man has placed a piece of sheet zinc 0.4 mm in thick-

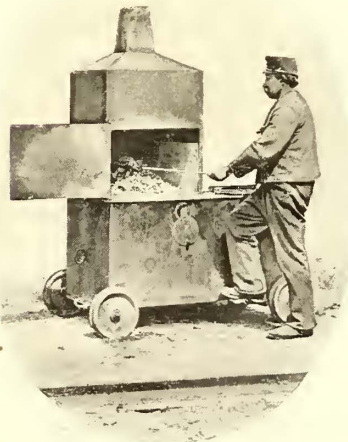


FIG. 2.—HEATING FURNACE

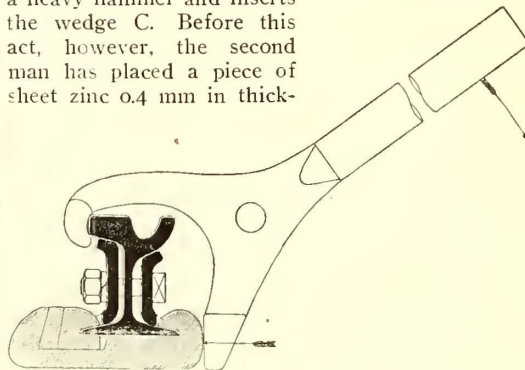


FIG. 3.—LEVER USED IN MAKING JOINT

ness between the rail surfaces and those of the large piece A. A fourth man presses the large piece A against the rail by means of a heavy lever, Fig. 3, while the wedge is being driven in. In this way twelve shoes can be constructed in one hour. The sheet zinc 0.4 mm thick melts at once when the heated piece A comes in contact with it and fills out the cavities between the contact surfaces. The 0.2 mm piece of sheet zinc between piece B and the rail-base will not melt, but will serve a similar purpose, as the 0.4 mm piece, in being subjected to an enormous pressure during the cooling of piece A. If the rail ends are thoroughly cleaned at the contact surfaces by means of steel brushes and emery paper before the shoe is constructed, a lasting and excellent electrical contact is obtained. Zinc and iron have similar electrical properties, which is a good quality in connection with an electrical joint.

The wedge has such a cross section that the piece A is pressed closely against the lower face of the rail-base and the piece B, at the same time firmly pressing the two pieces into the sides of the base. It is furthermore of such shape that it cannot recede and cause a loosening of the shoe. The joint can be applied by itself in the case of new rails and in connection with fish-plates, when such are present on old rails, as shown in Fig. 4. If rails

are to be removed the shoe can be taken off without very much difficulty, and can be used again. The shoes, which have been used on six street railways, two mountain roads and one heavy steam road in Austria, are said to have stood severe tests most successfully during the past year in all sorts of weather. Not a single shoe has become loose, and the electrical contact was reported to have been as good after a year's usage as it was at the beginning.

Measurements made by the K. K. Railway department at Linz have shown that while the tracks moved formerly about 45 mm each year, this had been decreased to 9 mm when the boltless shoe was used. It was further shown that the expansion of the rails was in no way interfered with, and that the cars could pass over these rails without any jars or jolts. The shoe is made in lengths



FIG. 4.—COMPLETED JOINT

varying from 16 cm to 24 cm, weighs about 16 kg to 24 kg, and costs, inclusive of royalty payments, at the present price of cast steel, about 14 to 20 kronen (\$3 to \$4). The equipment, when long lines are being equipped, including charcoal for the furnace and depreciation of tools, costs about 25 heller per joint. The pieces A and B are made of crucible cast steel, having a tensile strength of about 55 kg per square millimeter, and a flexibility of from 10 per cent to 12 per cent. The wedge is made of Martin steel.

Annual Meeting of J. G. White & Company

The second ordinary general meeting of the above company was held at the registered offices of the company, 22A College-hill, Cannon Street, E. C., on Monday, O. H. Baldwin (managing director), in the absence of J. G. White (the chairman of the company), presiding.

The directors' report and accounts presented showed a profit equal to more than 6 per cent on the total paid-up preference and ordinary capital. The report and accounts were adopted and a dividend on the preference shares at the rate of 6 per cent per annum to Aug. 31, 1901, was declared. The chairman congratulated the shareholders on the prosperous results of the working of the company to Aug. 31, 1901, and stated that the contracts obtained to date amounted to £784,475.

Atlanta Consolidation Approval

Mayor Mims, of Atlanta, has approved an ordinance granting the consolidation of the Atlanta Railway & Power Company, the Atlanta Rapid Transit Company, the Georgia Electric Light Company and the Atlanta Steam Heating Company. The companies will be taken over by the Georgia Railway & Electric Company, which applied for incorporation in December, 1901. The authorized capital stock of the company is \$3,000,000. Briefly stated, the terms upon which the city has agreed to allow the companies to consolidate require a cash payment of \$50,000 and an annual percentage of the gross receipts. For the first year 1 per cent of the gross receipts will be charged. After that time, for a period of twenty years, 2 per cent will be the rate. This is in lieu of all taxes not included in the *ad valorem* tax. The question of the terms on which the companies should be allowed to consolidate has agitated the Council for many weeks.

The Compagnie des Tramways a Vapeur de Saint Etienne, France, which is at present a steam line, is reported to be contemplating a change to electric traction. The road now operates 140 cars.

The Everett-Moore Situation

The first tangible information that the bankers' committee in charge of Everett-Moore affairs proposes to dispose of certain of the properties owned by the syndicate, came in the form of a circular letter under date of Feb. 5, to the stockholders of the Detroit United Railway. It was an unsigned agreement pledging the stockholders to turn in their stock certificates to the Guardian Trust Company, and abide by the decision of a sub-committee appointed by the bankers' committee to have charge of the sale of the property. The circular was accompanied by the following letter: "Overtures for the purchase of the majority of the stock of the Detroit United Railway have been made to the bankers' committee of eight, which committee has appointed a sub-committee to consider these overtures and to conduct negotiations for the sale of said majority. In order to enable said sub-committee to conduct such negotiations promptly and vigorously, this committee deems it advisable that the agreement enclosed herewith be executed at once by the owners and pledgees of said stock. If you agree with us, kindly have said agreement signed by yourself and your pledgees and return to the Guardian Trust Company with the stock covered by it." The letter was signed by H. P. McIntosh, E. V. Hale, J. R. Nutt and H. A. Everett, as the sub-committee.

The agreement authorizes the committee to negotiate for the sale of the stock and to sell the entire amount so deposited at a price which shall net to the pledgees not less than \$70 per share, after deducting the expenses incidental to carrying out the agreement. The agreement is to remain in force until Aug. 5, 1902.

Although the figure named in the contract is \$70, it is believed that at least \$75 or \$76 will be obtained for the controlling interest in the stock. It is understood that \$71 has already been declined, and it is known that at least four syndicates are now in the field to secure control of the Detroit property.

One of them is headed by Feder, Holzman & Company, of Cincinnati; another by Hutton & Company, also of Cincinnati; Baltimore people head a third syndicate, while Detroit and Chicago people compose another. With four live bidders in the field, it is believed that if the property is sold at all, it will go at a good figure.

The Everett-Moore syndicate and its immediate friends are said to control 63,000 shares out of \$12,500,000 capital stock, but the total Cleveland holding amounts to considerably more than this. A number of large blocks of the stock have already been turned over to the Guardian Trust Company.

Report of Massachusetts Railroad Commissioners

The thirty-third annual report of the Board of Railroad Commissioners, of the State of Massachusetts, for the year ending Sept. 30, 1901, has just been published. An abstract of the report, so far as it relates to street railways, follows:

MASSACHUSETTS STREET RAILWAY COMPANIES

Annual reports for the year ending Sept. 30, 1901, have been received from 119 street railway companies. Twenty of the 119 companies reporting having been consolidated with other companies, so that at the end of the year there were really 99 companies. Of these 99, 66 were operating their railways; the railways of 17 were operated by other companies under lease or contract; 14 had organized and were constructing their railways; 2 had organized and paid in a portion of their capital stock, but had not commenced the construction of their railways. The total miles of main track operated is 2,215.459, an increase of 242.905 over the previous year. All cars are now operated by electricity, the use of horses as a motive power having been discontinued during the year on the last two roads which had used them.

All of the track owned is surface street railway track, with the exception of 6.644 miles of elevated railway line, and 6.468 miles of elevated second track. Of the sidings, all are surface track, with the exception of 2.431 miles of elevated track. All the elevated track is confined to Boston.

CAPITAL INVESTMENT AND COST PER MILE OF TRACK

The total capital investment (capital stock and net debt) of the street railway companies of the State advanced the last year from \$84,715,097 to \$99,611,185, or \$45,757 per mile of track. Thirteen years ago, in 1888, the total was \$17,237,100.

The average cost of the street railways of the State per mile of main track (including the cost, but not the length of side track), as it stood on the books of the companies Sept. 30, 1901, was \$23,953.44 for construction; \$8,677.62 for equipment; and \$11,666.22 for lands, buildings (including power plants) and other permanent property, making a total average cost of \$44,297.28 per mile of main track.

ASSETS AND LIABILITIES

The gross assets of the companies Sept. 30, 1901, were \$107,250,655.63. The gross liabilities at the same date, including capital stock, were \$103,598,042.36.

INCOME AND EXPENDITURES

The total income of the companies from all sources, for the year ending Sept. 30, 1901, was \$23,179,304.20, and the total expenditures (including dividends) were \$23,198,237.99, leaving a net balance of \$18,933.79 to be deducted from the surplus of previous years.

The sources of total income, and the amount derived from each source as compared with 1900, were as follows:

TOTAL INCOME, 1900 AND 1901

INCOME	1900	1901	Increase
Gross earnings from operation.....	\$19,999,641	\$21,766,340	\$1,766,699
Rentals from lease of railway.....	1,221,897	1,236,824	14,927
Income from other sources.....	166,103	176,140	10,037
Total income.....	\$21,387,641	\$23,179,304	\$1,791,663

The items of total expenditure, with the increase in each item over the previous year, are shown in the following table:

TOTAL EXPENDITURES, 1900 AND 1901

EXPENDITURES	1900	1901	Increase
Expenses of operation.....	\$13,159,947	\$14,465,141	\$1,405,194
Interest on debt and loans.....	1,782,597	1,893,668	110,871
Taxes.....	1,347,119	1,555,757	208,668
Rentals of leased railways.....	1,229,170	1,301,033	4,863
Other charges on income.....	761,106	462,492	298,614*
Dividends paid.....	2,400,874	3,417,117	1,007,243
Total expenditures.....	\$20,760,013	\$23,198,238	\$2,438,225
Surplus for the year.....	627,628	18,934 ^d	646,562*

^d Deficit. * Decrease.

EARNINGS AND EXPENSES OF OPERATION

The gross earnings and expenses of operation the last year are classified and compared with those of the previous year, in the following table:

GROSS EARNINGS AND EXPENSES OF OPERATION, 1900 AND 1901

EARNINGS AND EXPENSES	1900	1901	Increase
Revenue from passengers.....	\$19,602,902	\$21,339,480	\$1,736,574
Revenue from mails and merchandise.....	49,157	51,897	2,640
Revenue from tolls, rents, advertising, etc.....	347,478	374,963	27,485
Gross earnings from operations.....	\$19,999,641	\$21,766,340	\$1,766,699
Operating expenses.....	13,159,947	14,565,141	1,405,194
Net earnings from operation.....	\$6,839,694	\$7,201,199	\$361,505

CAPITAL STOCK AND DIVIDENDS

The aggregate capital stock of the 119 companies, Sept. 30, 1901, was \$54,069,932.50, a net increase of \$5,098,765 over the preceding year.

DIVIDENDS

The total amount of dividends declared the last year was \$3,417,117, an increase of \$1,007,243 over the preceding year. Forty-three out of the 119 companies paid dividends ranging from 2 to 10 per cent, and 76 companies, new and old, declared and paid no dividends.

Two companies paid 10 per cent; 12 paid 8 per cent; 1 paid 8 per cent on preferred and 7 per cent on common; 1 paid 7.2 per cent; 1 paid 7 per cent; 1 paid 6½ per cent on one and 3 per cent on another part; 13 paid 6 per cent; 1 paid 5¾ per cent; 4 paid 5 per cent; 2 paid 4 per cent; 1 paid 3¾ per cent; 1 paid 3½ per cent; 2 paid 3 per cent, and 1 paid 2 per cent.

The amount of the capital stock upon which dividends were paid of the 43 dividend-paying companies was \$48,467,502, on which the average rate of dividend was 7.05 per cent, as against a corresponding rate of 6.19 per cent the preceding year. The amount of the capital stock of the 76 companies paying no dividends, including also the capital stock of the dividend-paying companies upon which no dividends were paid, was \$5,602,430.50. Including the latter, the average dividend rate on the whole amount of capital stock outstanding at the end of the year was 6.32 per cent, as against 4.92 per cent in 1900. Computed (as it more properly might be) on the mean amount of capital outstanding at the beginning and end of the year, this rate would be 6.63 per cent, as against 5.33 per cent in 1900.

The following table gives the total capital stock outstanding at the end of the year; the net divisible income after paying all expenses, taxes, interest, rentals and other charges; the amount of cash divi-

dends declared; and the average percentage of dividends on total capital stock, for each of the last ten years:

CAPITAL STOCK, NET INCOME AND DIVIDENDS, 1892-1901

YEARS	Capital Stock	Net Divisible Income	Dividends Declared	Percentage on Total Capital Stock
1892	\$23,590,536	\$1,905,680	\$1,582,697	6.71
1893	25,883,575	1,993,399	1,716,637	6.63
1894	26,971,275	1,812,668	1,610,886	5.97
1895	27,906,685	2,257,355	1,606,196	5.76
1896	30,727,818	2,280,776	1,802,847	5.87
1897	32,670,273	2,593,147	1,965,243	6.02
1898	38,933,917	2,534,002	2,076,233	5.33
1899	41,380,143	2,562,942	2,318,398	5.60
1900	48,971,168	3,087,502	2,409,874	4.92
1901	54,069,933	3,308,183	3,417,117	6.32

VOLUME OF TRAFFIC

The total number of passengers carried during the last year on the railways of the 119 companies making returns to the board was 433,526,935, an increase of 38,499,737 passengers over the previous year.

The total number of miles run by street cars was 93,005,225, an increase of 11,254,457 miles over the previous year.

The following table gives the total volume of traffic, itemized as above, for each of the last ten years:

VOLUME OF TRAFFIC FOR TEN YEARS, 1892-1901

YEARS	Total Passengers Carried	Average Number per Mile of Main Track Operated	Total Car Miles Run
1892	194,171,942	-----	29,678,036
1893	213,552,000	-----	34,507,282
1894	230,164,089	-----	36,722,978
1895	259,794,308	238,963	48,655,500
1896	292,258,943	226,452	53,613,685
1897	308,684,224	212,403	61,577,917
1898	330,889,629	207,982	68,206,418
1899	356,724,213	205,068	73,367,235
1900	385,027,198	200,262	81,750,768
1901	433,526,935	195,683	93,005,225

It appears that while the railway mileage has increased 188 per cent, or nearly trebled in the last nine years, there has been a gain of only 123 per cent in the number of passengers carried.

EARNINGS AND EXPENSES OF OPERATION

The following table gives the gross earnings from operation, the operating expenses, the ratio of operating expenses to gross earnings, and the net earnings for each of the last ten years:

PERCENTAGE OF OPERATING EXPENSES TO GROSS EARNINGS, 1892-1901

YEARS	Gross Earnings from Operation	Operating Expenses	Percentage of Expenses to Earnings	Net Earnings
1892	\$9,798,060	\$7,029,479	71.74	\$2,768,581
1893	10,832,174	7,591,845	69.26	3,330,329
1894	11,119,846	7,729,059	69.51	3,390,787
1895	13,184,242	9,088,086	68.93	4,096,256
1896	14,844,262	10,563,371	71.16	4,280,891
1897	15,815,267	10,904,040	68.95	4,911,227
1898	16,915,405	11,672,731	69.01	5,242,674
1899	18,151,550	12,378,488	68.20	5,773,062
1900	19,969,649	13,159,947	65.80	6,809,693
1901	21,766,349	14,505,141	66.92	7,261,199

The following table gives for each of the last ten years the average gross earnings, operating expenses, and net earnings from operation, (1) per total mile of main track owned, (2) per car mile run, and (3) per passenger carried, thus showing more in detail the changes from year to year in the earnings, cost, and net results of operation.

GROSS AND NET EARNINGS FROM OPERATION PER MILE OF MAIN TRACK OWNED, 1892-1901

YEARS	AVERAGE PER MILE OF TRACK		
	Gross Earnings	Expenses of Operation	Net Earnings
1892	\$12,980	\$9,312	\$3,668
1893	12,392	8,582	3,810
1894	11,972	8,321	3,651
1895	12,127	8,359	3,768
1896	11,627	8,274	3,353
1897	11,187	7,713	3,474
1898	10,998	7,589	3,409
1899	10,459	7,132	3,327
1900	10,452	6,878	3,574
1901	9,898	6,690	3,308

GROSS AND NET EARNINGS FROM OPERATION PER CAR MILE RUN AND PER PASSENGER CARRIED, 1892-1901

YEARS	AVERAGE PER CAR MILE			AVERAGE PER PASSENGER		
	Gross Earnings	Expenses of Operation	Net Earnings	Gross Earnings	Expenses of Operation	Net Earnings
1892	33.01	23.69	9.32	5.05	3.62	1.43
1893	31.39	21.74	9.65	5.07	3.51	1.56
1894	30.28	21.05	9.23	5.04	3.50	1.54
1895	30.20	20.82	9.38	5.07	3.50	1.57
1896	27.69	19.70	7.99	5.08	3.61	1.47
1897	25.68	17.71	7.97	5.12	3.53	1.59
1898	24.80	17.11	7.69	5.11	3.52	1.59
1899	24.74	16.87	7.87	5.09	3.47	1.62
1900	24.46	16.10	8.36	5.06	3.33	1.73
1901	23.10	15.66	7.74	5.02	3.36	1.66

STREET RAILWAY DEVELOPMENT

In 1892 there were 755 miles of street railway in Massachusetts. There are now 2177 miles. In 1892 the number of passengers carried was 194,171,942. In 1901 the number was 433,526,935.

An examination of the conditions and restrictions under which street railway locations have been granted shows a range of grant from that in the nature of a gift to that upon conditions calling for extraordinary expenditures by the company. Grants to the same railway are often radically unlike in the different towns through which it passes. In one, the local board, relying upon the right to demand future returns in accommodations and low fares, may give the use of the street upon liberal terms; in another, the local board, distrustful of the future, and thinking it best to secure at once full compensation for all that it gives, imposes upon the same company heavy expenditures as a condition of the right to use its streets. As railways have become more interurban in character, the need of greater uniformity in respect to conditions and restrictions attached to grants of location is apparent, in order to secure just treatment as between the several communities which they serve and the observance of rules of State policy. The effect of the diversity of opinion among local boards reaches beyond matters of purely local interest.

The growth of street railways has been in large part the wholesome development of new and desirable facilities for travel. Prior to the passage of laws restricting the issue of stocks and bonds, and while grants of location were hurriedly made in the haste to enjoy this new and cheap method of travel, an attractive field was offered for exploiting ventures in which the public interest received scant, if any, attention. The opportunity thus afforded was not neglected. While the street railway service in many communities is excellent, in others the evils of over-capitalization, of the building of roads with no good reason for existence, and of the practice of paying dividends at the expense of proper maintenance, are to-day apparent in impaired properties, lack of proper car equipment, insufficient power plants and poor track and roadbed. Where these conditions exist a prompt remedy should be applied through the immediate expenditure of the money necessary to bring the railway property to a proper standard. Financial inconvenience or temporary embarrassment to dividend-paying power offers no reasonable excuse for delay. The recent consolidation of companies has been productive of lower fares and larger transfer privileges. It has brought to more than one weak system the advantages of financial strength and able management, from which may be expected action that will secure the needed additional equipment and better service. Generally speaking, there is little reason to doubt that in the coming year the standard of equipment and service will be decidedly improved in cities and towns where there is now abundant reason for complaint. Meanwhile, attention is being given to methods of operation that will increase security of travel, through the introduction of additional safeguards and the establishment of suitable regulations.

Three-Cent Fares in Cleveland

A special press despatch from Cleveland, dated Feb. 10, states John B. Hoefgen, of Brooklyn, N. Y., was the single bidder for a franchise to build and operate a system of three-cent fare electric railways at Cleveland, and that the Board of Control has adopted a resolution recommending that the City Council accept the Hoefgen bid. The proposed system covers seventeen routes, and the bid was accompanied by a cash deposit of \$50,000, which is given to secure compliance with the terms of the contract. Mayor Johnson is quoted as stating that only the indifference of residents can defeat the plan.

Now there is every reason to believe Mr. Johnson in this respect, for John B. Hoefgen, to whom the franchise will undoubtedly go, has been associated with Johnson enterprises for

some time past. Mr. Hoefgen, whose address is variously stated as Brooklyn, N. Y., Allentown, Pa., etc., is prominently identified with many Johnson projects at this time, being a director in a number of Johnson projects both in Pennsylvania and New Jersey. And he was prominently connected with the Nassau Railroad, of Brooklyn, a few years ago when the company was under the control of the Johnsons.

Some weeks ago it was announced that Mr. Hoefgen would bid for the franchise, but the mere announcement that a bidder had been obtained did not excite the public. The franchise has to be passed by the Council, and an extremely exciting session is expected when they are brought before that body.

The New York and Philadelphia Traction Deals

It is generally admitted that there is now in process of organization a new proprietary company that will lease the Metropolitan Street Railway, of New York. The reports regarding the deal are as various as they are numerous, but the general opinion is that the new company is to be capitalized at \$30,000,000. It is currently stated that 7 per cent is to be guaranteed on Metropolitan stock. Officials of the Rapid Transit Subway Company positively deny that their company will be taken over, but the prevalent belief is that the Brooklyn Rapid Transit, Manhattan Elevated Railway and Rapid Transit Subway will eventually be included. It is all speculation. Stockholders of the Metropolitan, it is said, will be entitled to subscribe to the stock of the new proprietary company to the extent of 45 per cent of their present holdings of Metropolitan shares.

The plan for the consolidation of the Philadelphia companies is reported to be assuming shape, and the prevalent belief is that Union Traction stockholders will be guaranteed 3 per cent for the first two years, 4 per cent for the next two years, 5 per cent for the next two years, and 6 per cent for the remainder of the lease. The capitalization of the company that will take over the Philadelphia interests is currently reported at \$20,000,000 of common stock and \$15,000,000 of bonds.

CORRESPONDENCE

Vanity and Street Car Signs

Brooklyn, Feb. 10, 1902.

EDITORS STREET RAILWAY JOURNAL:

Self esteem and personal vanity are among the leading weaknesses of the American business man. From an inventor of an insect powder to the head of a great trust one may see personal vanity and its effects. I do not mean to say that Americans of other classes are not strictly "in it." One cannot take a photograph without having half a dozen volunteer subjects in it. Try to take the picture of a new car, and half of the body will be hidden by the workmen who want to be "took." Evidences of this vanity and self-esteem are to be seen in almost every large establishment in the country. It is to be found perhaps more frequently in those devoted to manufacturing. Ask any employee how the "old man" takes suggestions for improvements or changes. The answer will be that if he thinks they are his own suggestions, of if he can claim them, they are favorably received. If they come from any one else he sits down on them, though he may bring them forward later on as his own.

One of America's largest railroads often refuses to adopt a new and good thing because some other road has used it first. "We will not follow." This in several cases has gone so far as to keep back material improvements for years.

Now when we come to the street car we find a case of collective instead of individual vanity. At least 75 per cent. of all the street railway corporations in the United States pay every year large sums of money to have the name of the company painted on the sides of their cars, usually in large ornamental letters. Now I want to say that there are a few roads which do not waste money in this way. Their practice is highly commendable. Much more than the majority, however, gratify the feeling already mentioned by making every car they own carry the name in 12-in. or 14-in. letters. The sign is made just as long as there is space for. Even in country towns where there is only one line we find the signs just as long as in the cities, where some excuse is found in two companies. The Slab City and Cordwood Electric Power, Light and Transportation Company must have its full name on both sides of its two cars just as surely as the Capital City Traction Company with its 3500 and some odd cars. All the "Consolidated" and "Limited" and "Compound" "traction" and "street

railway" companies do the same, filling one panel with a long sign.

As signs or destination signals they are utterly worthless. They are of no use as advertising. Every person in town knows to whom the cars belong. If it were necessary to claim ownership a small stencil inside the dasher or on a corner of a panel, as is occasionally done, would answer every purpose.

The cost of these signs is something to consider when 800 or 1500 of them have to be provided. The argument is that this is all in the price of the car. Of course, but some one has to pay for the day's labor, and the car builders do not do it for love.

Now what useful purpose do these signs convey? No doubt some one will attempt to defend the practice on the score of advertising. One might just as well advertise lots in the cemetery when there is only one within reach. The sign does not make people yearn to ride. It does not improve the riding of the cars by wasting the sign painter's time upon them. Twist as we will, it is only one-man exhibition of vanity. Directors, stockholders, president and general manager, all like to see the company's name. The larger the type the better. There is a little overflow of satisfaction every time they see it. It adds to their feeling of self-importance. But there are three objections to it. The money which it costs is wasted, it does not improve the appearance of the car, and valuable advertising space is occupied to no purpose.

J. D. YATES.

Automatic Sprinklers in Tunnels

Philadelphia, Pa., Jan. 31, 1902.

EDITORS STREET RAILWAY JOURNAL:

I have noticed several communications of late in the STREET RAILWAY JOURNAL discussing in one way or another the construction of underground lines in the congested city districts and the use of non-combustible cars for such service. All electrical machinery is liable to "short-circuit" suddenly and take fire. Good workmanship and design as a matter of course lessen the degree of this danger, but enough of it remains to make the possibility of fire very present. It is difficult enough to escape from a burning trolley car on the open street, but in a tunnel escape is practically impossible. The longer the tunnel the more impossible does escape become, not only on account of the restricted space around cars, but because of the lack of fresh air due to the accumulation of gas, which makes breathing impossible and causes death by suffocation if not by fire itself. This danger should be recognized in all tunnel work and provided for. I do not believe the time will ever come when motors can be made, at a cost which can be commercially borne, so that the danger of fire will be entirely eliminated. It is therefore necessary to consider the question of "fire protection" in the construction of these tunnels if life is to be safe in travelling through them.

There is a simple safeguard which would go far to minimize the danger of conflagration in such places, viz.: the equipment of all underground lines with standard automatic sprinklers. The automatic sprinkler embodies the best method of the scientific distribution water for the purpose of fighting flame. The use of sprinklers is "a rule" in almost every great factory in this country and abroad, and the fire loss has been cut down over 90 per cent in such establishments, as the records of many years will prove. All of the usual types of sprinklers are designed to distribute water over an area 10 feet in diameter and through whatever vertical space there may be. They are therefore located about 8 feet apart near the roof.

Two lines of these sprinklers located overhead through tunnels would extinguish any conflagration promptly and efficiently. As soon as fire creates a temperature of a pre-determined degree, usually 165 deg., these sprinklers open at the location of such heat alone, and absolutely fill the space protected by them with coarse drops of water. No human agency is required, as the device operates through the agency of heat itself, and is therefore absolutely automatic. The temperature of the tunnel is immaterial, as the "dry" system of automatic sprinklers may be employed in which water is prevented from freezing in the pipes.

The cost of such protection would be trifling compared with the reduction in fire risk, and would amount to only "a drop in the bucket" compared with the entire investment. I believe that it is a necessary, reasonable and adequate protection against the fire risk, and as one familiar with the general subject of fire protection, and as a traveller on lines of public transportation, I have taken the liberty of sending you this communication. It is merely a suggestion which may arouse interest on the subject, and may produce a quality and degree of discussion which will result in fire protection of some character fitted to the danger being installed along lines of subterranean travel.

POWELL EVANS.

Annual Report of the Northwestern Elevated Railroad

The Northwestern Elevated Railroad Company, of Chicago, reports the following earnings and operating expenses for the year ending Dec. 31, 1901:

INCOME	
Passenger earnings.....	\$1,016,186.73
Other earnings (including loop net earnings for four months)....	84,676.76
Total earnings	\$1,100,863.49
OPERATING EXPENSES	
Maintenance of way and structure.....	\$26,747.75
Maintenance of equipment	28,993.41
Conducting transportation.....	267,578.22
General expenses	52,820.67
	376,140.05
Total net earnings	\$724,723.44
CHARGES	
Loop account	\$101,635.05
Taxes	78,580.35
Interest on bonds.....	385,220.35
	565,435.75
Surplus for year	\$159,287.69

The balance sheet as of Dec. 31, 1901, was as follows:

ASSETS	
Cost of road and equipment.....	\$24,778,713.95
Bonds in treasury	1,122,400.00
Due from companies and individuals.....	292,390.50
Current assets	223,798.45
Total	\$26,417,302.90
LIABILITIES	
Capital stock—	
Preferred	\$5,000,000
Common	5,000,000
	\$10,000,000.00
Bonds	15,000,000.00
Mortgages	119,000.00
Current liabilities (including contracts for new equipment and additions to power house).....	739,465.06
Reserved for taxes and interest.....	261,532.11
Reserved for maintenance.....	15,000.00
Surplus	282,305.73
Total	\$26,417,302.90

The gain in passenger traffic is shown by the following comparative monthly statement for 1900 and 1901:

	1900	1901	Inc.	Per Cent of Inc.
January .....	.....	52,022	.....	.....
February .....	.....	55,256	.....	.....
March .....	.....	57,193	.....	.....
April .....	.....	58,623	.....	.....
May .....	.....	56,999	.....	.....
June	41,972	53,586	11,614	27.67
July	40,816	48,559	7,743	18.97
August	43,961	49,770	5,809	13.23
September	47,092	54,065	6,973	14.81
October	50,808	59,044	8,236	16.21
November	53,345	59,857	6,512	12.21
December	53,798	63,375	9,577	17.80
Total number of passengers carried in 1901, twelve months.....			20,327,005	
Total number of passengers carried in 1900, seven months.....			10,185,141	
Daily average passengers carried in 1901, twelve months.....			55,590	
Daily average passengers carried in 1900, seven months.....			47,594	
Average daily increase.....			8,096	
Equal to			17 per cent	

Although the earnings applicable to stock were 3.18 per cent on the preferred issue, the expenditures that are to be made will probably prevent any dividends for this year. The \$26,747 charged to maintenance of way and structures includes \$15,000 set aside in monthly instalments for betterments and maintenance of the road. The company was operated during the year for 36.26 per cent of the earnings, including the maintenance reserve. The operating expenses, plus loop rental and taxes, were 53.64 per cent of the earnings. The old directors were all re-elected at the annual meeting.

Report on the New York Tunnel Disaster

The Board of Railroad Commissioners of New York State has handed down its report regarding the recent disaster in the Park Avenue tunnel, New York, to which we have devoted much space because of the discussion it brought forth as to the possible dangers of substituting electricity for steam in the tunnel. An abstract of the report follows:

The best method of dealing with the tunnel itself would be to take off the roof and reopen it, as a cut, to both light and ventilation, using bridges at the intersecting streets. From the public point of view this change is deemed impracticable and intolerable. Electricity is the most desirable motive power for the tunnel as a tunnel—but legislation is necessary, not merely to enable its use, but also to relieve the railroad company of the present obligation that it shall use steam, and steam only.

It is not safe or advisable to light the tunnel in the sense of making a clear illumination in it, though this idea has been advocated with intensity in many quarters as "the solution of the problem." It is not deemed feasible by practical men. It was tried in 1891, under the direction of the Railroad Commission,

but the lights were removed soon afterward upon the written remonstrance and request of eighty-eight engine men employed on the tunnel run. The proposition is opposed to-day by locomotive engineers generally, who are the prime judges of the difficulties to be overcome in running trains through this particular tunnel.

There does not appear to be any feasible way of ventilating this tunnel. The most trustworthy civil engineers who have appeared before this board say they regard ventilation, either by forced draft or by suction, as impracticable.

The railroad company has felt this need (the need of increased yard facilities) for at least three years past, and it has been the subject of much public discussion, more particularly in connection with the intolerable atmospheric conditions which affect passengers in passing through the tunnel in the summer. The rejoinder of the officials to this criticism has been that the required real estate for the enlargement of the yards could not be obtained, and that as to electricity, there was then no feasible system by which the volume of traffic could be handled. Now, however, partly owing to its awakened sense of its own business necessities and partly to the recent rapid advances in electrical engineering, the company has been forced into bringing forward a plan for improvements which will embrace an increase of the yard room and the separation of the suburban traffic from the through traffic by carrying suburban trains underground from the tunnel by a loop system to an independent station, and operating the local trains by the multiple-unit electric plan.

This appears to this board to be the solution of the problem of to-day, but unfortunately it cannot be immediately carried out, nor can it be done in much less than two years. The newly acquired surface area, added to the present yard through recent purchases, will give some relief by affording more room for car storage, and the board urges emphatically upon the company the pressing necessity, as well as duty of the corporation, to put this relief into effect without delay. The board believes that this modicum of betterment should be accomplished within a few months.

Signaling experts, who have testified before the District Attorney and this board, unite in declaring this tunnel to be the most perfectly equipped as to its signals in the world; but they at the same time declare that they know of no other tunnel so difficult of operation, both by reason of the large amount of traffic going through it and its unfortunate location so close to the terminal yard. The Baltimore & Ohio Railroad tunnel at Baltimore and the Liverpool tunnel under the River Mersey bear no comparison to it in respect to the traffic.

It may be here noted that possible ways of anticipating the needs are: (a) through the extension of the company's facilities by establishing a new train-yard on the Long Island side of the East River, or (b) by increasing and improving the company's existing terminal facilities on the west side of the city, in the vicinity of Thirtieth and Thirty-Fourth Streets and the North River. By this means perhaps all or a large part of the suburban traffic might be carried to this terminal, and to that extent relieve the Grand Central Station. The surface and elevated roads would quickly extend their connections so as to make that terminus easily accessible, and in any event the probable early advent of the Pennsylvania Railroad to that part of the city would make such a terminal desirable, perhaps necessary.

Electric Refuse Cars Under Consideration in Brooklyn

A plan for removing the city refuse of Brooklyn by electric cars has been under consideration for some time by the Brooklyn Heights Railroad Company and the Commissioner of Street Cleaning. Although there has been no formal adoption of the plan by either the railway company or the city both, are said to have it under favorable consideration, and it will not be surprising if the plan is adopted.

It is proposed to have the city give a five-year contract for the removal of ashes and street sweeping at the approximate rate of 30 cents a cubic yard. Under the present system in Brooklyn the cost when the ashes and sweepings are finally disposed of is 63½ cents a cubic yard. It is estimated that 53.3 per cent will be saved the city in the haul to the dumps to be established by the new company, and that the net saving, besides the time, on the million cubic yards removed yearly in Brooklyn alone will be \$38,000.

Figures of the Street Cleaning Department show that the annual increase in the amount of matter handled is about 20 per cent. At this rate the city, during the continuance of the five-year contract, would save \$282,780 in cash alone, as well as an inestimable amount of time of its working force.

Sites for the thirteen stations to be built by the company have

already been selected and a large amount of available dump land obtained. Double story buildings, in which the refuse would be handled automatically, would be erected, all on lines of the trolley roads. Into these buildings the wagons of the Street Cleaning Department would be driven, the wagons hoisted to the second floor by an electric elevator and the contents dumped into the refuse cars. The latter would be hauled to the refuse grounds and dumped at night when the regular traffic was at a minimum, and when there would be plenty of power capacity at the stations.

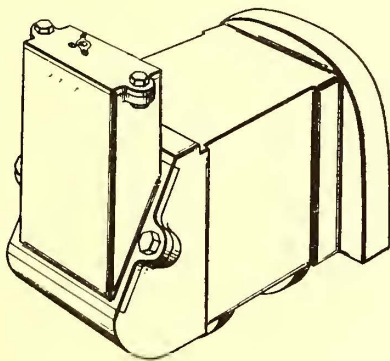
It is estimated that the Brooklyn plant alone will cost more than half a million dollars, and that it will require at least thirty-five cars to handle the sweepings and ashes.

It is said that organizers of the new scheme are at work on plans for other large cities, and the success of the Brooklyn plan will mean the establishment of the same system in Boston and Philadelphia almost immediately, and eventually in Chicago, Cleveland, St. Louis and other cities where electric traction is used. The only drawback in Manhattan at present to its utilization is the fact that the means of traction are not the same all over the city. Extension of the underground electric system to the lines along the water front and to the crosstown lines would allow of the plan being put into use, but at present a complete system cannot be installed, because the entire city could not be covered by the proposed method.

The originator of the scheme for having the trolley road handle the Street Cleaning Department's refuse is H. Milton Kennedy, who was formerly general passenger agent of the Brooklyn Rapid Transit Company. To carry out his plan he purposes to form what will be known as the American Railway Traffic Company, and it is this company that will solicit the five-year contract for the removal of ashes and sweepings from the city government, and later be extended to cover other cities.

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Automatic Journal Lubricator for Electric Cars

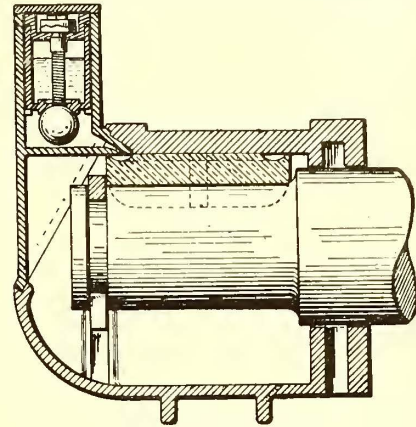
One of the problems which has long troubled the minds of railway engineers is the securing of perfect lubrication of the car journals so as to eliminate the cause of overheating the boxes. The accompanying illustrations show a novel device recently perfected which operates in a manner directly opposite to the usual way, distributing the oil to the journal. Instead of the oil being carried by the waste to the under side of the journal, the oil is fed to the top of the journal bearing, thereby securing complete and uniform lubrication, thus preventing friction and saving a large part of the lateral cut. The device is composed of a small rectangular cup or tank, with an outlet at the bottom which is controlled by a ball-valve fitted under the face of the outlet, and held thereto by the tension of a spiral spring. The spring is attached to the ball with a stud in the end of spring, which passes through the tank and is held in place at the top of the tank by a bracket having a square-shaped opening adapted to receive it, and with the upper surface of the bracket notched or indented. The stud terminates in a threaded end at the top, extending through the bracket with a nut on, the nut being used to increase or decrease the tension of the spring regulating the feed of oil.



SIDE VIEW OF BOX

The oil is fed directly above the bearing and through channels to the journal, thus distributing the oil over the entire journal. With this manner of oiling the use of waste is entirely unnecessary, unless for the simple purpose of preventing an accumulation of dust in the boxes, and for this purpose a very cheap quantity of waste can be employed. The oiler itself is dustproof, as the tank has a tightly fitting lid, which prevents any foreign substance from get-

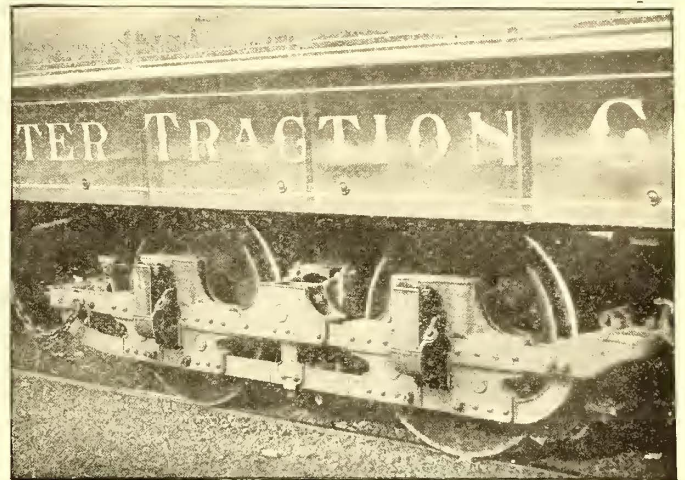
ting into it. The lubricator carries enough oil to give perfect lubrication for at least sixty days, thus saving the constant daily care and attention as at present required, the cars being at all times ready to go into service when required. There is a great saving in the amount of oil used, and in the wear and tear of the parts, besides doing away with the dirt and inconvenience attending the present mode of oiling. The valve is readily adjusted, and when once adjusted requires no further attention. The ball-valve acts entirely from the motion of the car, not feeding when the car is at rest, but immediately starting to feed when the car begins to move, and only so much oil as is actually required to give perfect



SECTION OF BOX

lubrication and no more, thus causing a great saving in the amount of oil used.

There is nothing complicated or delicate in the construction of the device, the parts are all substantially made of the best material, and will outlast a car many times. It will occupy little space, and is entirely out of the way of other parts of the truck and car. The tanks can be filled and the quantity of oil in the tanks ascertained at any time without removing the bolts or lid.



LUBRICATOR APPLIED TO TRUCK

No change is required in the construction of the car boxes, as the lubricator is readily adjusted to the ordinary box.

When it is considered what an enormous quantity of oil is used and more wasted in the ordinary mode of car lubrication, the cost of bearings and waste, the additional help required to look after the boxes, the often and expensive delays, the serious accidents, the throwing out of service of a large number of cars on account of hot or overheated journals from imperfect lubrication, the importance of this device can well be understood.

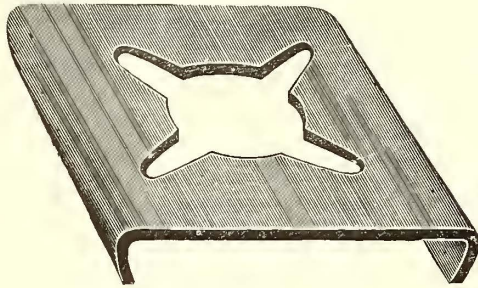
The apparatus is being manufactured and put on the market by the Standard Automatic Lubricator Company, of Philadelphia, Pa.

◆◆◆
The "Servis" Nut-Lock

Of all the devices used in electric railway construction, perhaps none has given so much trouble as an inefficient nut-lock. With the intention of making a lock that would fulfil the requirements found upon all kinds of track work, David Servis, the inventor of the Servis tie-plate, has perfected the device shown in the ac-

companying engraving. This nut-lock has already proved itself most satisfactory on the many roads where it has been installed, and claims of absolute positiveness and permanency are made for it by the manufacturers.

The nut-lock is placed over the bolt before screwing on the nut, the edges, which are turned over, being placed next to the fish-plate. The nut is then screwed down to position upon the lock, compressing its outer surface. When once screwed down in



IMPROVED NUT LOCK

this manner, no further tightening will be required, as all strain tending to loosen the nut through leverage of nut is met and resisted as by a spring buffer. The spring sections take off the vibrations that would otherwise be directly on the nut, and also take up any slack resulting from the possible wear of the parts. The corners of the nut, in rotating over the spring face of the lock in either direction, must always travel from a lower to a higher plane, which prevents the loosening of the bolt. The turned-over lips of the lock, which act as spring fulcrums, and are placed outside the path of travel of the corners of the nut, are so related to the spring sections under the nut converging toward the bolt that the spring tension of the lock can never be entirely destroyed by pressure of the nut. On the other hand, the inner path of travel of the nut enables it to be unscrewed by a wrench when desired. The device is manufactured by the Eyeless Tool Company, 26 Cortlandt Street, New York, of which Marvin F. Wood is general manager.

A New Rail Punch

In the conversion of a steam railway to electric traction, one of the important features is the punching of the old rails for the accommodation of the bonds. The accompanying engravings show a gang of trackmen on the Cincinnati & Northwestern Railroad, which runs from College Hill Junction to Mt. Healthy, Ohio, using a new rail punch, which has recently been designed by F. J. J. Sloat,



CONVEYING PUNCH ON ROAD

general manager of the Southern Ohio Traction Company, Hamilton, Ohio. This punch contains many advantageous features, and its operation during the electrification of this steam road has been most satisfactory.

The engravings show clearly the general appearance of the device and the method of punching rails while using it. The rail on the road mentioned is 60-lb T, and was punched through the web for

long bonds. The machine shown, however, is of sufficient power to punch any sized T-rail up to 85 lbs. per yd., with a hole $\frac{7}{8}$ in. in diameter. The punch is fastened securely to the track by a small set screw, as shown in the second cut, and the die is placed against the web of the rail to steady the small punch. This punch is only about $1\frac{1}{2}$ ins. long, and can be renewed readily at small expense.

The device is also applicable for punching holes through the



PUNCH IN USE

foot of the rail; in this case a beveled die is employed instead of the straight one which is used in punching through the web. Two men can easily carry the apparatus, as shown, and it is readily removed from the track, a great advantage on roads where frequent service is maintained. The punch illustrated has been operated over almost 100 miles of rail, and, as the only wearing part is the small, ready renewable punch, it is still in first-class condition. While it is absolutely necessary to employ some device of this kind on roads that are being converted from steam to electrical operation, it is not unusual practice for new roads to buy their rails without having bond holes punched at the mills and do the drilling and punching themselves after the rail is laid. As the price of punching at the mills is about \$1 per ton, and a conservative estimate of the cost of punching by the device above described is about 50 cents per ton, considerable saving can be effected. With a gang of five men, the usual day's work is about 225 holes. Three men on the lever are ordinarily sufficient to operate it. The punch has been fully covered by patents, and is now being manufactured for general service. The Long & Allstatter Company, of Hamilton, Ohio, who are large manufacturers of all kinds of punch and shearing machinery, have taken the device up and are making it for the trade.

The World's Fair at St. Louis

An advance copy of the Classification Book for the Louisiana Purchase Exposition at St. Louis in 1903 has been received. Fifty-three pages are required for a mere enumeration of the groups and classes of exhibits. The exhibits of the entire exposition are divided into fifteen departments, as follows: Education, eight groups; art, six groups; liberal arts, thirteen groups; manufactures, thirty-four groups; transportation, six groups; agriculture, twenty-seven groups; horticulture, seven groups; forestry, three groups; mining and metallurgy, five groups; fish and game, five groups; anthropology, four groups; social economy, thirteen groups; physical culture, three groups. The total shows 144 groups and 807 classes, and under each class is a possibility for a multitude of exhibits. Nothing reflects more clearly in so small a space the variety of human occupations, or more comprehensively, the broad scope of the great exposition which the people of St. Louis are preparing for next year. A place is provided for every conceivable product worthy of exhibition, and all nations of the world have been invited to take part. Acceptances have been received from many, and the work of construction is progressing earnestly. The buildings will have altogether a floor space of 200 acres, and the grounds a total area of 1000 acres. The money now available aggregates \$15,000,000, besides \$1,000,000 appropriated by the State of Missouri, and various liberal sums from other States. The classification and the rules and regulations of the exposition will be mailed free on application to the director of exhibits, World's Fair, St. Louis.

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 FEB. 3, 1902.

692,271. Railway Switch and Mechanism for Operating It; D. T. Granbery, Memphis, Tenn. App. filed April 30, 1901. By a suitable lever system a pointed rod is thrust between the tongue and the rail at the will of the motorman, the rod being yielding to avoid a shock or breakage.

692,333. Reversible Chair for Railroad Coaches; H. C. Orr & G. Mathews, Kansas City, Mo. App. filed April 25, 1901. Reversible seats, constructed so that the back of any of them may be lowered to a horizontal position to form a couch.

692,395. Rail-Bond; M. F. Whiton, Hingham, Mass. App. filed June 25, 1901. A laminated bond having flat feet secured together by a strap, which confines solder between the layers to prevent its escape in case of heating.

692,421. Take-Up Device for Trolley Cords; S. J. Buckland, Springfield, Mass. App. filed March 6, 1901. The device takes up the normal slack, and in case the wheel leaves the wire, it sets in operation a winding mechanism to draw the pole downward.

692,422. Watershed or Deflector for Trolley Poles and Ropes; S. J. Buckland, Springfield, Mass. App. filed Sept. 30, 1901. A looped wire is inserted near the pole in the cord to conduct moisture to a point where it will be shed instead of running down the cord.

692,496. Car Haul; A. M. Acklin, Pittsburgh, Pa. App. filed Oct. 4, 1901. Endless chains provided with hooks engage with the cars, several chains being used of different speeds, so that a car can be started from rest at a slow speed, and its speed increased step by step up to that of the speed of the most rapidly moving chain.

692,499. Car Truck; W. S. G. Baker, Baltimore, Md. App. filed Feb. 25, 1899. In trucks having large and small wheels the object is to so support the bolster on the truck frame so as to cause the larger part of the weight to be borne by the large wheels, and in arranging the brake mechanism so that the larger part of the braking power shall be applied to the large wheel.

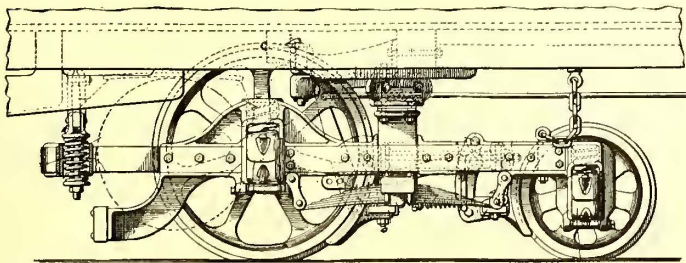
692,513. Fare Register; C. E. Gierding, Westhaven, Conn. App. filed Jan. 4, 1900. Among other things this invention provides a flash shield, which will cover the sight aperture in the face before the mechanism begins to advance the dials, and which will not be lifted until the dials have again come to rest.

692,519. Trolley Harp; A. Johnson, Quincy, Ill. App. filed Oct. 10, 1901. Contact springs resting against the hub of the wheel are held in place at the base of the harp by a plug.

692,531. Railroad Turn-Table; P. Johnson, Montreal, Canada. App. filed July 12, 1900. Consists in constructing a turn-table to rest when loaded upon a two-point bearing extending transversely thereof, which allows the table to tilt upon either bearing.

692,566. Car Transom; C. T. Westlake, Granite, Ill. App. filed June 20, 1901. A car transom cast in a single piece and having a portion forming the top converging toward each end where they unite without any transverse web, and the bottom portion extending outwardly and upwardly from the centerpiece and united with the top at the outer end of the transom.

692,567. Swinging Spring Seat for Car Bolsters; C. T. Westlake, Granite, Ill. App. filed June 20, 1901. The end of the bolster is supported upon a swinging seat, so that it may have a certain lateral movement when the car lurches.



PATENT NO. 692,499

692,568. Car Bolster; C. T. Westlake, Granite, Ill. App. filed June 20, 1901. A car bolster composed of I-beams connected by means of side-plates having the bearings fixed upon the upper I-beam between the flanges.

692,569. Car Bolster; C. T. Westlake, St. Louis, Mo. App. filed Aug. 26, 1901. An upper integral member and a lower integral member connected by intervening portions and strengthened by projecting flanges extending outwardly from their center.

692,691. Car Fender; C. M. Moore, Monroe, Maine. App. filed June 7, 1901. A fender comprising two members mounted to move

toward each other, one adapted to yield on impact with an object, and the other to receive the object.

692,747. Switch-Throwing Device; W. H. H. Welton, Akron, Ohio. App. filed May 13, 1901. A switch mechanically operated from the car platform.

692,759. Tramway Switch; L. H. Brayne, Washington, Pa. App. filed Aug. 29, 1901. The switch is moved by separating the ends of a pair of levers presented in the roadway to be engaged by a cam carried by the car.

692,790. Trolley Stand; O. F. Lidke, Ypsilanti, Mich. App. filed Aug. 14, 1901. The trolley stand is movable from one end of the roof of the car to the other on a track.

PERSONAL MENTION

MR. FREDERICK WILHELM, of Homestead, Pa., has been appointed superintendent of the Monongahela division of the Pittsburgh Railway Company's lines.

MR. C. C. SKEWES, of San Francisco, has been appointed superintendent of the Nevada County Traction Company, of Nevada City, Cal., vice Mr. George H. Fairchild, resigned.

MR. C. E. DONNATIN has been appointed superintendent of the mechanical department of the Los Angeles Railway Company, of Los Angeles, Cal. Mr. Donnatin will have charge of the company's rolling stock, car and machine shops and storeroom.

MR. HERMAN A. STRAUSS has resigned the post of assistant engineer of the Manhattan Elevated Railway Company, which he has held during the past two years, to engage in consulting electrical engineering work, with office in the Park Row Building, New York City.

MR. GEORGE W. EDWARDS, for many years superintendent of the Brooklyn Elevated Railroad, and who was in charge of the road under the management of the Brooklyn Rapid Transit Company until he resigned some months ago, has returned to the latter company as assistant in the office of General Manager Brackenridge.

MR. ROBERT DUNNING, formerly with the Consolidated Traction Company, of Pittsburgh, and who has also been prominently identified with the street railway companies of Washington and Buffalo, has been appointed general master mechanic of the Cincinnati Traction Company, of Cincinnati, O., to succeed Mr. Patrick Leen, who resigned to enter a manufacturing company.

MR. JOS. J. HEIM, who promoted and built the East Side Electric Railway, of Kansas City, Mo., now controlled by the Metropolitan Street Railway Company, has been seriously ill in a Michigan sanitarium, but is convalescing rapidly. Mr. Heim is the principal promoter of the Kansas City, Lawrence & Topeka Electric Railway, which project will receive his immediate attention. The final survey for this line is yet to be made, but construction work will be prosecuted vigorously.

MR. GUY L. FAIRBROTHER, who was superintendent of construction of the Upton Street Railway Company, of Upton, Mass., has accepted the position of superintendent of the Rutland Street Railway, People's Gas Light Company & Chittenden Power Company, of Rutland, Vt. Mr. Fairbrother, upon severing his connections at Upton, was honored by a reception. As a token of their appreciation his former associates and friends presented him with a handsome silver pitcher and a goblet, suitably inscribed.

MR. HOWARD A. CLAPP, who has been connected with the Brisbane Tramway Company, of Brisbane, Australia, for the past six years, has come to this country for the purpose of familiarizing himself with our methods of manufacturing electric apparatus. He expects to remain here about two years, and is now connected with the General Electric Company, of Schenectady, N. Y. Mr. Clapp is the son of Mr. F. B. Clapp, president of the Melbourne Tramway Company, of Melbourne City, Australia, and has had a large amount of practical experience both on the mechanical side and the operation of railways in Australia.

MR. W. H. WHITESIDE, who for the last three years has been manager of the Washington office of the Westinghouse Electric & Manufacturing Company, has been promoted to the position of manager of one of the important departments of the company at the home office in East Pittsburgh. As Washington agent of the Westinghouse Company Mr. Whiteside has been associated with a number of important electrical installations, and his engineering work in connection with the installation of electrical power in the new drydocks of the navy, especially those at Portsmouth, League Island and Boston, has been widely recognized. He is a strong advocate of the change of voltage from 80 to 125 volts in connection with electric installations on battleships and cruisers.

LEGAL NOTES

LIABILITY FOR NEGLIGENCE

WASHINGTON.—Evidence—Rebuttal—Impeachment—Admissibility—Witnesses—Competency—Trial—Instructions.

1. In an action for personal injuries caused by a street car starting while plaintiff was alighting therefrom, the conductor testified that he did not stop because of any signal from plaintiff, and denied on cross-examination that he had ever told any one that he had stopped for that reason. Held, that evidence of such statements was admissible to impeach the conductor.

2. Where a witness in an action for personal injuries testifies that she knows of her own knowledge what the plaintiff's earning capacity was before being injured, such witness may testify as to the amount, though she did not detail the sources of her knowledge.

3. Under Const. art. 4, Sec. 16, providing that judges shall not charge juries with respect to matters of fact, nor comment thereon, but shall declare the law, a charge, in an action for personal injuries caused by a street car starting while plaintiff was attempting to alight, that the jury might consider an instruction that, if the conductor had no reason to suppose plaintiff wished to leave the car, to find for defendant, in connection with the testimony as to the number of persons there was, if any, aboard the car, is not objectionable as an explanation of the evidence.

4. Where, in an action against a street railway for personal injuries, the court instructs as to the facts necessary to create a liability, and that the jury is not to decide the controversy on any principle that one of the parties is a corporation, and the other a natural person, nor from any consideration of the consequences which the verdict might have on any one of the parties, an instruction that defendant, if liable at all, is liable only by reason of facts creating a primary liability of the conductor or motorman, may be properly refused as being covered by the other instruction.—(French vs. Seattle Traction Co., 66 Pac. Rep., 404.)

WASHINGTON.—Witnesses—Surprise of Party Calling Witness—Right to Show Inconsistent Statements—Street Railroads—Collision with Vehicles—Contributory Negligence—Same.

1. A party who has been surprised by the testimony of one of his own witnesses upon a material fact may be permitted by the court, in its discretion, to show that the witness had made a different statement previous to the trial, not for the purpose of impeaching the witness generally, but for the party's own protection, by showing why the witness was called, and counteracting his adverse testimony.

2. The rule that the failure of a person to stop, look, and listen before driving upon a railroad track constitutes negligence as a matter of law is not inflexible, even in case of steam railroads, and is only applicable to street railroads on a public street, where the attending conditions are such that reasonable care and prudence would require such precautions.

3. Plaintiff was driving with a covered wagon along a street in a city upon which was an electric railway track. He looked back along the track, which could be seen for a quarter of a mile, and no car was in sight. He drove along the street for 400 feet at a moderate speed, and then turned to cross the track, without again looking back, not having heard any warning signal, when his wagon was struck by a car approaching from that direction, and he was injured. A municipal ordinance limited the speed of cars to 12 miles an hour, and there was evidence tending to show that the car which struck plaintiff was running at double that rate of speed, and that, if the speed had conformed to the ordinance, no collision would have occurred. Held, that the question of contributory negligence was properly submitted to the jury. Ross, Circuit Court Judge dissenting.—(Tacoma Ry. & Power Co. vs. Hay, 110 Fed. Rep., 496.)

WASHINGTON.—Master and Servant—Negligence—Due Care of Servant—Evidence.

Plaintiff, employed by a street railway company, was working at night on a trestle which crossed a lake, and plaintiff knew that at intervals ties had been sawed in two. He stepped on a tie, which gave way with him, and he fell through the trestle. The foreman testified that he had warned the men of the danger of the work, and he was corroborated by other witnesses. Plaintiff testified that he had not been warned. Several electric lights hung over the place where the work was being carried on, making it very light. Held, that plaintiff could not recover, inasmuch as the danger was an apparent one.—(Robare vs. Seattle Traction Co., 64 Pac. Rep., 784.)

WASHINGTON.—Collision with Vehicle—Right to Use of Streets—Duty to Look and Listen—Pleading—General and Specific Allegations—Proof—Gross and Wilful Negligence—Instructions—Contributory Negligence—Question for Jury—Motormen Expert Witnesses.

1. Where plaintiff's view of a street car coming in an opposite direction was obstructed by a truck moving in front of him, and plaintiff did not look or listen before driving on the track, whereby he was injured by colliding with the car, which the testimony tended to show was coming at an unusual rate of speed, plaintiff was not negligent as a matter of law, the doctrine of "look and listen" being inapplicable to street railways, and the obligations of plaintiff and the operator to watch for collisions being mutual.

2. Where general allegations of negligence are followed by enumeration and averment of specific acts, the plaintiff will not be confined to proof of such specific acts unless the complaint clearly indicates the intention of the pleader to limit the negligence to such acts.

3. Where the allegations of a complaint were broad enough to admit proof of gross negligence, and there was evidence from which it could be inferred, though there was no proof of any wilful act, an instruction that, if defendant's motorman wilfully allowed the car to run unimpeded up to the time when a collision with plaintiff was inevitable, then the verdict should be for plaintiff, was not prejudicial to defendant.

4. An instruction that the rights of a street railway were paramount and superior to the rights of those traveling on the streets is not correct, since their rights are equal, except when both desire to pass a given point at the same time.

5. An instruction that, the rights of plaintiff and the street car company to the use of the street being equal, plaintiff was not bound to pass to the left of a wagon in front of him, instead of to the right, over defendant's track, by pursuing which latter course he was injured, provided a man of ordinary prudence, under the circumstances, might have pursued the course he did, is not objectionable or prejudicial to defendant as assuming that there was room to pass round the wagon to the left.

6. The question of whether plaintiff went into a position of danger, by reason of which he was struck by defendant's street car, was for the jury.

7. An instruction stated that, "if you believe plaintiff might have avoided the accident by driving directly across the track instead of undertaking to turn, he would not necessarily be guilty of contributory negligence in that respect, provided an ordinarily prudent man, under the excitement and particular circumstances surrounding plaintiff at the time, might have adopted the course pursued by him." Held, not objectionable as a comment on the evidence.

8. An instruction that "if, tried by the rule as to what an ordinarily prudent and careful man would have done under circumstances of this case, you find that defendant was not guilty of the negligence which produced the injury complained of, your verdict should be for defendant," was not misleading, where other instructions fully covered contributory negligence and unavoidable accident, though the question at issue was not whether defendant's negligence "produced," but whether it "contributed to," the injury complained of.

9. An instruction that, if defendant's car was running at a prohibited rate of speed, the jury would be justified in finding defendant guilty of negligence, and if such negligence caused the injury complained of the verdict should be for plaintiff, unless he was guilty of contributory negligence, was not erroneous, as misleading the jury, when taken in connection with other instructions given, that the verdict should be for defendant, though negligent, if plaintiff could have avoided the injury.

10. An instruction that it was plaintiff's duty to look and listen, and stop if necessary, before going on or crossing the tracks of an electric street railway, was properly refused.

11. Where the testimony tended to show that the wheel of plaintiff's buggy was caught by the fender of the car, going in the opposite direction, that the crosstree broke, and that defendant was thrown out of the buggy on the side opposite the car, and not directly over the front dashboard, an instruction that defendant was not liable if plaintiff was dragged over the dashboard by holding on to the reins was properly refused.

12. Where plaintiff, an old man, was injured by collision of a street car with his buggy, and there was no evidence that he would have been any safer in jumping than by remaining in and

trying to save his buggy, an instruction that plaintiff had no right to attempt to save property at the risk of injury to his person was properly refused.

13. A witness who had operated electric motor cars, had worked in car shops for two years, had been in the car shop of defendant company two or three times, and observed the motors used by it, and had adjusted motors to cars, was competent to testify as an expert as to the distance at which a car, going at various rates of speed, should be stopped.

14. Motormen who had been employed for several years by defendant company on cars similar to the one in use at the time of the accident complained of, one of whom had received instructions as to the operation of the motor then in use, were competent to testify as experts as to the distance at which a car going at various rates of speed could be stopped.—(Traver vs. Spokane St. Ry. Co., 65 Pac. Rep., 284.)

WISCONSIN.—Crossing Accident—Care Required of Motor man—Municipal Ordinance—Sounding Gong—Rights at Crossing—Duty to Look and Listen—Contributory Negligence—Evidence—Directed Verdict.

1. Testimony of witnesses that, when approaching a street car track with a view of crossing it, they looked for an approaching car, and did not see one, though there was a car within plain sight, and so near as to render an attempt to cross dangerous, is inconsistent with all reasonable probabilities, and is not sufficient to authorize the submission of an issue as to the near approach of the car as a disputed question of fact.

2. Where plaintiff testifies that she looked as she was about to drive across a street car track, and did not see a car, though one was shown to have been in plain view, and about 100 ft. distant, and she then drove on the track, and was injured, it was error to refuse to direct a verdict for defendant on the ground of contributory negligence.

3. A motorman approaching a street crossing is required to use the care and prudence which ordinarily prudent persons would exercise under like circumstances.

4. The test of negligence in the rate of speed of a street car is the speed at which an ordinarily prudent man would have run the car under similar circumstances.

5. The violation of an ordinance requiring the continuous ringing of a bell on a street car while in motion does not render the company guilty of negligence per se in a crossing accident, even though the ordinance is a condition in the grant of a franchise to the company, since the condition is unreasonable.

6. Where a street car franchise requires the company to acquire the franchise of a former company, which contained regulations as to the manner of operating the cars, but does not refer to such old requirements, or make the provisions of the old grant part of the new one, the new franchise is not subject to the old conditions and regulations.

7. Where the question of the reasonableness of a municipal ordinance is in issue, all reasonable doubts are to be resolved in favor of the municipality.

8. Where a street car, which is in good condition, with electric headlight, approaches a crossing on a clear, still night at a time when there is not much traffic, and there is no unusual obstruction preventing a view of the car by a person approaching on a cross street, the failure of the motorman to continuously sound the gong is not negligence.

9. A street car has a right at a crossing superior to that of an ordinary traveler, and a person attempting to cross a track is guilty of contributory negligence in failing to look and listen for an approaching car.

10. The mere operation of a street car at a street crossing in such a manner as to render it dangerous for a person to cross in front thereof is not negligence.

11. Plaintiff was injured by the wagon in which he was driving being struck by a street car at a crossing, which frightened the horses, and caused them to run away. The accident did not result in any injury to the car, except a few scratches, and did not disturb the lights on the car nor the passengers, nor persons in charge of the car, other than by the jar caused by application of the brake and the reversal of the current. The car stopped substantially at the place of the accident, and did not push the wagon any distance, nor break it at the point of contact. Held, sufficient to show as a matter of law that the car was not being operated at a negligent rate of speed.—(Stafford vs. Chippewa Val. Elec. R. Co., 85 N. W. Rep., 1036.)

TEXAS.—Excessive Damages for Injuries Causing Death.

Plaintiff's husband, a deaf mute, when killed by defendant's cars was 50 years of age, had no fixed occupation, and was not shown to have ever earned over \$15 a month, and was discharged from his last place, where he earned \$8 per month, for incompetency, and was usually in debt. At the time of his death he had separated

from his wife, and was living on the charity of relatives, and was in poor health. Held, that a verdict of \$1,500 damages for negligently causing his death was excessive, and should be reduced to \$500.—(International & G. N. Ry. Co. vs. Jones, 60 S. W. Rep., 978.)

TEXAS.—Negligence—Dangerous Premises—Death—Pecuniary Interest in Deceased's Life—Independent Contractors—Duty to Warn—Electric Wires—Failure to Insulate.

1. Where decedent, whose death was alleged to have been caused by defendant's negligence, was more than fifty-seven years old, and was being supported by plaintiffs, who were his children, and it appeared that he did no work, and did not contribute to the support of the family, but only carried the dinners for his sons, etc., for which he was given his food and clothes, plaintiffs had no pecuniary interest in decedent's life, for which they would be entitled to recover.

2. Where decedent's sons were working under a contract to remove cinders from a street railway company's yard, and decedent went to the yard with their dinners, and while there was killed by a shock of electricity communicated from a trolley wire through a hoe which he placed over the wire while raking down a pile of cinders under it, the railroad company was not liable for his death on the ground that it should have warned decedent of the danger, since that duty devolved on the sons as independent contractors, if on any one, and not on defendant.

3. Such facts established that decedent was guilty of contributory negligence.

On Rehearing.

A city ordinance declaring that no switch, lamp, motor, dynamo, or other electrical conductor, having exposed uninsulated parts, shall be erected where any person unacquainted with the dangers of the same could easily come in contact therewith, does not apply to a suspended trolley wire, so as to render a street railway company liable for the death of a person caused by an electric shock which he received by catching a hoe onto the wire suspended above his head while in the act of hoeing down a pile of cinders in the yard of the street car company.—(Proctor et al. vs. San Antonio St. Ry Co., 62 S. W. Rep., 939.)

TEXAS.—Death—Excessive Damages.

Where deceased, a man forty-one years of age, and earning \$37.50 per month, was killed through the negligence of defendant railway company, a verdict of \$8,600 was excessive, and will be reversed, unless plaintiff shall stipulate to remit \$3,600.—(Trinity Val. R. Co. vs. Stewart et al., 62 S. W. Rep., 1085.)

COLORADO. — Appeal — Instructions — Exceptions — Sufficiency—Same—Refusal to Give Instructions—Street Railroads—Negligence—Evidence—Admissibility—Appeal—Misconduct of Counsel—Same.

1. Where instructions given at plaintiff's request embrace several distinct propositions, a general exception to the giving of the instructions, and to each and every part thereof, is not sufficient to support an assignment of error which only relates to one proposition included therein.

2. A general exception to the refusal to give instructions, including several distinct points, is not sufficient to support an assignment of error.

3. Where the receiver of a street railroad defends an action for the negligent killing of an alleged passenger on the ground that she was not a passenger on the car, and did not receive any injuries through defendant's negligence, the clothing worn by deceased at the time of the accident is admissible for the purpose of her identification, and as tending to show the nature and extent of her injuries.

4. Where an assignment of errors, on the ground of misconduct of counsel in his argument to the jury, does not contain a reference to the record showing an exception to the remark when made, and the ruling of the court thereon, as required by a rule of court, it will not be considered on appeal.

5. Where objection to misconduct of counsel in his argument to the jury is first made on the motion for new trial, it will not be considered on exceptions to the action of the court in overruling the motion, since exceptions should have been taken thereto at the time of the making of the improper argument.—(Baggs vs. Martin et al., 108 Fed. Rep., 33.)

NEW YORK.—Personal Injuries—Pleading—Same—Evidence.

1. Injury to eyesight may be proved under a complaint alleging that plaintiff was hurled forward with such force as to bruise her knee, wrench her arm, and "otherwise seriously and grievously injure her."

2. The question of whether plaintiff's impairment of eyesight was attributable to the accident, where she received blows on other parts of the body, and a nervous shock, should not be left to the jury, there being no testimony or proof that such blows might be

expected to produce such impairment.—(Brooklyn Heights R. Co. vs. MacLaury, 107 Fed. Rep., 644.)

WASHINGTON.—Collision with Team—Witness—Impeachment.

1. Where plaintiff was driving a team of horses with a covered wagon in a city, and crossed an electric railway track, and looked up the street, of which he had an uninterrupted view for about 1400 ft., and saw no car, and, after proceeding a distance of 400 ft., turned on the track to drive into a livery stable, and was struck by an electric car running 24 miles an hour in violation of the city ordinance, he could recover, though he failed to look before so crossing the track; it being in evidence that, if the car had been running at the rate of speed required by the ordinance, there would have been no collision.

2. Where plaintiff called a witness to prove the rate of speed at which a street car was running prior to a collision, and he testified that it was going 12 miles an hour, plaintiff's counsel, upon plea that he had been taken by surprise, could show that before going upon the stand the witness had stated that the car was going at a speed of 20 miles an hour.—(Hays vs. Tacoma Ry. & Power Co.,

NEW YORK.—Injury at Crossing—Contributory Negligence—Question for Jury—Same—Direction of Verdict—Same—Look and Listen Rule—Same—Street Railroad—Same—Negligence of Railroad Company.

1. Plaintiff testified that he was walking alone about 1:30 a. m., and while passing over the crosswalk of an avenue he was struck by a street car; that he looked up and down the avenue before stepping from the curb, and again just as he stepped on the parallel double track; that he saw no headlight or other indication of an approaching car until it struck him, though his eyesight was "pretty fair"; and that he heard no gong or bell. There was no obstruction to his view up the avenue, and, though the night was dark, the street was lighted by gas, and there was an arc electric light at the corner. A passenger who was looking out of the front window testified that the motorman did not ring the bell, and that the headlight must have been very dim; that the car was going very fast, and ran at least a block before stopping; that he first saw plaintiff on the track when the car was 10 ft. or 12 ft. from him; and that a person could not see any distance. Held, that the question of plaintiff's contributory negligence was for the jury.

2. In any case where the right to trial by jury exists, whenever the plaintiff raises a question of fact which would justify a finding in his favor, such issue must be determined by the jury, and not by the court on motion to direct a verdict; and, if the verdict is against the weight of evidence, it may be set aside, but a new trial must still be granted before another jury.

3. While courts have taken judicial notice of the fact that ordinarily careful people look and listen before crossing a steam railroad track, it is not the province of the court to say that a person looking must see, or listening must hear, at his peril; the traveler being bound only to make reasonable efforts to see and hear.

4. The mandatory duty to look and listen is not applied with the same rigidity to pedestrians crossing street railroad tracks at intersecting streets, it being the duty of the railroad company to have its cars under control as they approach such crossings.

5. Evidence that a street car was propelled at a very rapid rate over an intersecting street, without any signal or warning, and without a bright headlight, and that the motorman had his face turned toward the rear of the car when it struck plaintiff, who was crossing the street, was sufficient to warrant a finding of negligence on the part of the defendant.—(Mitchell vs. Third Ave. R. Co., 70 N. Y. Suppl., 1118.)

NEW YORK.—Injury to Passenger—Verdict—Evidence—Sufficiency—Same—Damages—Instructions.

1. In an action against a street railroad for injuries, plaintiff, who was corroborated by two others, testified that, just as she was stepping from the car, it started with a jerk, and threw her down, and the conductor, motorman, and three others gave testimony that plaintiff alighted while the car was in motion, but some of the latter witnesses did not see all the transactions. Held, that a verdict for plaintiff was not against the evidence.

2. Where, in an action for personal injuries, the court instructed that, if plaintiff was entitled to recover at all, she might, in addition to her physician's bill, recover damages in any amount from one penny to \$2,000—the latter sum being the court's jurisdictional limit—and then charged that he would qualify his statement by saying, if any damage were found, it might be between the two limits, the instructions were not erroneous, or liable to be construed by the jury as a charge on what the evidence warranted.—(Nash vs. Yonkers R. Co., 71 N. Y. Suppl., 594.)

NEW YORK.—Damages—Personal Injuries.

Where plaintiff sues for personal injuries, a judgment on a verdict allowing him the amount of his necessary medical expenses, but nothing for his injuries, will be reversed.—Katz vs. Brooklyn Heights R. Co., 71 N. Y. Suppl., 744.)

NEW YORK.—Personal Injuries—Damages—Evidence.

Where plaintiff, in an action to recover for injuries received, alleges that she was prevented from attending to her duties as a manufactory employee, evidence as to the amount of wages earned by her was admissible.—(Russell vs. Metropolitan St. Ry. Co., 71 N. Y. Suppl., 765.)

NEW YORK.—New Trial—Surprise as to Evidence.

A woman was injured in a railroad accident, and examined twelve days thereafter by the company's surgeon. No reference was then made to an injury in her groin. More than eighteen months thereafter, on a trial of an action for injuries received in the accident, she testified as to a hernia caused by the accident, which had continued to increase up to the time of the trial. The complaint alleged serious and lasting bodily injuries. Held, that the verdict in her favor would be set aside on the ground of surprise to defendant at the first proof of such a serious injury.—(Dixon vs. Brooklyn Heights R. Co., 71 N. Y. Suppl., 969.)

NEW YORK.—Collision—Contributory Negligence.

Where the driver of a wagon crosses a street car track at right angles, he is guilty of contributory negligence if he fails to look for cars coming from either direction.—(Vonelling vs. Metropolitan St. Ry. Co., 71 N. Y. Suppl., 751.)

NEW YORK.—Action for Negligence—Instructions.

The evidence showed that plaintiff, a street sweeper, was injured by jumping back from a carriage against the shaft of the defendant's cart. The court charged that plaintiff must show freedom from any negligence and any contributory negligence, and that the negligence was entirely that of the defendant. Held, erroneous, in that plaintiff was only required to show freedom from negligence which contributed proximately to the result.—(Brick vs. Metropolitan St. Ry. Co., 71 N. Y. Suppl., 314.)

VERMONT.—Specific Performance—Contracts Enforceable—Railroads—Receivership—Sale of Property.

An oral agreement with the receivers of an unfinished railroad to furnish the money required to complete the same for receivers' certificates and other securities as collateral is not such a definite and precise contract as to warrant a decree or order for its specific performance.

A court will not order the sale of railroad property in the hands of receivers, where the purpose of the receivership was to secure the completion of the road, to save to the company certain subsidies and subscriptions, the right to which has been pledged by the receivers to raise funds, until the road has been so completed as to assure their collection.—(Bibber-White Co. vs. White River Val. Electric R. Co., 110 Fed. Rep., 472-473.)

WISCONSIN.—Sales—Warranty—Breach—Second-hand Dynamo—Action on Breach—Instructions—Agents—Authority.

1. In an action by a street railway company for a breach of warranty of quality on the sale of a second-hand dynamo, it was error to permit a witness to testify that it is not prudent to run a street railway with a second-hand dynamo, and that there are difficulties in operating a new electric line, which are especially trying on a dynamo.

2. Where, in an action for breach of warranty of quality of a second-hand dynamo, plaintiff's evidence showed that it is customary, in selling second-hand electrical machinery, to sell the same with a warranty, and the question was controverted whether the one who represented the seller had authority to make the warranty, it was error to instruct that any buyer who takes a warranty beyond the scope of the selling agent's authority does it at the risk of being able to prove the agent had express authority, and that the law will not infer the same, since, if in the sale of a particular class of property it is customary to accompany the sale with a warranty, an agent selling such property has implied authority to make the warranty.

3. In an action for breach of warranty of quality and fitness on the sale of a dynamo, the defects complained of being latent, it was error to instruct that, if the purchaser failed within a reasonable time after discovering the defects to notify the seller, and continued to use the machine, the warranty was waived, since, the defects being latent, delay in notifying the seller of the machine's condition was immaterial as to the purchaser's right to recover damages.

4. In an action to recover damages for breach of warranty of quality and fitness on the sale of a second-hand electric dynamo, it was error for the court to define a second-hand machine, and tell the jury that such a machine was not as good as a new one.—(Wau-paca Electric Light & Ry. Co. vs. Milwaukee Electric Ry. & Light Co., 88 N. W. Rep., 308.)

FINANCIAL INTELLIGENCE

THE MARKETS

The Money Market

WALL STREET, Feb. 11, 1902.

The money market has come to the foreground of financial discussion again this week, in consequence of the further heavy increase in local bank loans. Last Saturday's reported increase of \$29,000,000 was the largest with one exception, ever reported in a single week in the history of the New York Clearing House. It shows plainly that the market is subjected to precisely the same influence which a year ago was looked upon as a menace to future security—namely, the appeal of the promoting syndicates for huge advances of capital. The recent extension of credits is connected with the several large bond issues recently announced to the public, of which the \$30,000,000 tender of Atchison debentures and the \$10,000,000 additional Pennsylvania Railroad bonds are the chief. It also, no doubt, reflects preparations for the financing of the new Metropolitan stockholding company, which is soon to be carried out. So far as the immediate future of money is concerned, everything hinges upon the extent to which these special appeals for credit are likely to be carried. The local loan account has already about reached the high record of last March, and it must be evident that with scarcely any addition to cash reserves, as compared with a year ago, the danger limit is fast being approached. Apart from the uncertainty of the loan movement, the money position continues highly favorable. Receipts of currency from the West and South, although past the season's maximum, are still decidedly large. The Treasury reserve surplus has scarcely risen at all for several weeks, owing to the reduced purchases of internal revenue stamps in expectation of the abolition of the war taxes. What balance there is, moreover, against the banks is fully offset by bond redemptions. Gold exports to Europe are not likely to cut an important figure, and should money rates here go up, they would, without doubt, cease instantly. As matters stand the same signs of hardening are visible, rates on time loans having been marked up to a uniform 4 per cent during the week. Call money remains very easy, however. Bankers' balances on the Stock Exchange are not, as a rule, bringing above 2½ per cent.

The Stock Market

The outlines of the project to change the present financial organization of the Metropolitan Street Railway Company have not been received at all cordially in Wall Street. It would be improper to comment very freely upon the subject until the details are known. But the information, so far as given out, has caused a distrust, which we are inclined to say is quite natural, that the promoters of the plan are seeking a way to borrow capital for the contemplated improvements and changes of equipment, which will have a better appearance and more chances of success than if the Metropolitan Company were simply to increase its present issue of securities. Attention has perforce been redirected to the very slender margin of earnings—practically nothing at all—which is now being shown in excess of dividend requirements. If the proposed new company guarantees 7 per cent dividends on the present stock, and uses the present earnings for the purpose, the stockholders will be as well off under the new as under the old organization. But if the entire earning power of the road is needed for these dividends what support will there be for any new issue of securities, and is it possible for the new concern to create new foundations for security value which the existing company does not have? These are leading questions which have to be asked, while further details of the enterprise are still awaited. Metropolitan stock has been conspicuously heavy in the week's market, and so have the other local tractions, more particularly Manhattan. The Appellate Division of the Supreme Court has reversed the former decision upholding the company against certain property owners who were pleading for the right to sue for alleged injury to their property, through the building of the third track on the elevated structure. Undoubtedly the case will be carried to the higher Court of Appeals, and be brought up there for several years, but in the meantime the effects of the decision have been rather severely felt upon the market for Manhattan shares.

The general stock list has emerged from the rut in which it had been moving up to a week ago. Evidences that the pools and banking syndicates have thought the occasion favorable to a campaign for higher prices, and have begun active operations to that end, are perfectly plain. Hitherto the movement has been concentrated in a few stocks, notably Southern Pacific, where the belief prevails

that quotations have not fairly measured the present earnings and future dividend-paying ability of the road. Union Pacific, as the principal holder of Southern Pacific stock, has shared in its strength, and St. Paul, Atchison, Missouri Pacific, among the leading Western railway issues, have enjoyed some rise. Heavy buying in the Reading stocks, for which the reason is not yet apparent, has carried their quotations to the highest yet recorded. The market in general bears the unmistakable sign of manipulation, without the co-operation of the outside buying which is essential to a prolonged rise. But it is manipulation founded on conditions which inspire confidence, and the reluctance of outside operators may yet be overcome. Everything is favorable to the maintenance of present values, so far as the outside situation is concerned. The low surplus reserve, and the fear of the bank loan expansion becoming excessive, are the main deterrents, but these are not yet being weighed over-seriously against the arguments for an advance elsewhere.

Philadelphia

Another week has gone by without any definite announcement concerning the new financial plans of the Union Traction. The stock has risen under heavy buying, however, from 35½ to 38, and the speculative community is interested in the rumor that a grand scheme is under way for financing the Union Traction and the Metropolitan Street Railway of New York undertakings at one and the same time. One idea is that the new investment company to be organized in New York, will eventually take over the Philadelphia properties. But the more common impression continues to be that the two deals will be separate, although taken up together, and that the one in Philadelphia will merely involve the formation of a new concern to lease Union Traction and take over the rapid transit franchises. Philadelphia Traction, moving as usual with the lesser company's shares, is up a point on the week to 99½. Pittsburgh Traction, the preferred stock especially, has been active and strong, this preferred up to 64½, and the common to 23¾. The nature of these purchases, which must be of stock outside the recent deal, is rather puzzling. Consolidated of New Jersey has been dealt in moderately at an advance to 68½. Transactions elsewhere have been of slight importance. They comprise only Railways General at 4¼, and American Railways at 44. In bonds Electric Peoples Traction 4s have once again been active and buoyant, selling at the new high figure of 99¾. Other sales of the week were, New Jersey 5s at 110½, Peoples Passenger 4s at 106¼ and 106, Citizens' of Indianapolis 5s at 110, Indianapolis Railway 4s at 85½, and Newark Passenger 5s at 117½.

Chicago

The feature of the week in Chicago has been the very sharp advance in the securities of the surface lines. Union Traction common had risen to 13 at last Saturday's close; on Monday it went up 2 points further to 15, and the preferred rose 2 points to 49½. Meanwhile City Railway, which sold at 190 a week ago, advanced yesterday to 220. The reasons for this sudden upturn are not at all definite. In some quarters it is interpreted as foreshadowing some modification in the application of the new franchise tax law; in other quarters it is connected with rumors that the long-talked-of consolidation among Chicago street railways is to be taken up simultaneously, if not in connection with the "trolley deal" in New York. West Chicago Street Railway shares have moved with the others, and are 3 points up on the week, at 93, ex-dividend. North Chicago is also higher at 190 bid. It is now assumed that the surface lines will have no more trouble about getting their franchises extended, but concessions must be made in return which will satisfy the city that it is not giving something for nothing. The cut in the Metropolitan Elevated semi-annual preferred dividend, from 2 to 1½ per cent, caused the stock to sell off to 86¼ on Friday, but it has since recovered half its loss. The reduction of the dividend was due to the heavy taxes recently levied, and to the large payments upon damage suits incurred by the company by the accident in November last. There is no slackening of the traffic upon the system, which continues to gain considerably over a year ago. Metropolitan common, after going as low as 37 on Friday, rallied to 39 yesterday. Other elevated shares have undergone comparatively little change. Northwestern common has been dealt in freely at 38½, and a few odd lots of the preferred have brought 87. South Side and Lake Street are dull but higher at 107½ and 110 respectively.

Other Traction Securities

Boston Elevated, on a few scattered sales, reached yesterday the lowest point of the current decline, 162. Massachusetts Electric preferred, after showing some weakness and selling down to 92

on Saturday, rallied easily to 94½, a slight gain on the week. The common was strong in sympathy, rising as high as 36¼ yesterday, and closing at 35½. Odd investment lots of West End have gone at 95 to 95¼ for the common, and 114½ to 113 for the preferred. In Baltimore, the United Railway issues have continued to hold the advantage secured during the previous week, but have made no further appreciable gain. The common stock reached its high point on Wednesday last, when it touched 15¾. At the same time the income bonds sold at 70. Subsequently, however, both securities have reflected profit-taking, and the common is back to 15¾, with the bonds at 69. United Railway 4s were exceptionally strong, going up to 97½ and bidding nearly all the gain. Other Baltimore transactions of less importance comprised Knoxville Traction stock at 15, City and Suburban (Baltimore) 5s at 115¾, Knoxville Traction 5s at 99; Charleston Consolidated Electric 5s at 91, and City and Suburban (Washington) 5s at 92. Dealings in St. Louis Transit have been extremely moderate, both in the home market and on the New York curb. The last sales were made at 32 for the common, and 84¾ for United Railways preferred, which are a trifle below the final quotations a week ago. Columbus Street Railway common is up from 47 to 48 on the bid price, without attracting any offers. There has been nothing doing in New Orleans City Railroad shares during the week. Business on the Cleveland Stock Exchange last week was rather quiet, the total sales numbering 3862, compared with 6345 for the week previous. Detroit United continues to lead, 1100 shares changing hands, the stock closing at 65, a net loss of 2¾ points from the week previous. Cleveland Electric scored a 2-point advance, the sales amounting to 528 shares for the week; the closing figure was 77. Aurora, Elgin & Southern was practically stationary, 300 shares going at 35½ and 36. Two hundred shares of Northern Ohio Traction common sold at 28, an advance of 3 points. On Monday a small block of Cleveland Electric sold at 77, and 100 Detroit United at 65½. Conflicting rumors relative to the probable sale or leasing of Everett-Moore properties is making purchasers wary.

Security Quotations

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

	1902	
	Closing Feb. 4	Bid Feb. 10
American Railways Company.....	44	44
Boston Elevated	163	162
Brooklyn R. T.....	65%	66%
Chicago City	193	219
Chicago Union Tr. (common).....	12	15
Chicago Union Tr. (preferred)	47	49½
Cleveland City .....	..	..
Cleveland & Eastern.....	31	30
Cleveland Electric	74½	75
Columbus (common)	45	47
Columbus (preferred)	101	101
Consolidated Traction of N. J.....	67½	68¼
Consolidated Traction of N. J. 5s.....	110¼	110¼
Consolidated Traction of Pittsburgh (common).....	23	23½
Consolidated Traction of Pittsburgh (preferred).....	..	64¼
Detroit United	67¾	65
Detroit United Certificates.....	66½	66½
Electric-People's Traction (Philadelphia) 4s.....	98¼	98½
Elgin, Aurora & Southern.....	37	35
Indianapolis Street Railway.....	160	160
Indianapolis Street Railway 4s.....	85	85½
Lake Street Elevated.....	10%	10¼
Manhattan Ry.	135%	133%
Massachusetts Elec. Cos. (common).....	34	35
Massachusetts Elec. Cos. (preferred).....	94	94
Metropolitan Elevated, Chicago (common).....	39	38
Metropolitan Elevated, Chicago.....	91	88¾
Metropolitan Street	172%	171%
New Orleans (common)	30	30
New Orleans (preferred).....	105	105
North American	93½	93
Northern Ohio Traction (common).....	25	28
Northern Ohio Traction (preferred).....	88¼	88¼
North Jersey	24	25½
Northwestern Elevated, Chicago (common).....	38	38¼
Northwestern Elevated, Chicago (preferred).....	86½	86½
Philadelphia Traction	98	99½
Rochester (common)	42	44
St. Louis Transit Co. (common).....	32	32
South Side Elevated (Chicago).....	106½	107¼
Southern Ohio Traction.....	78½	78½
Syracuse (common)	21	21
Syracuse (preferred)	52	61
Third Ave.	124	131
Twin City, Minneapolis (common).....	111	109%
United Railways, St. Louis (preferred).....	84%	84%
United Railways, St. Louis, 4s.....	89½	89¼
Union Traction (Philadelphia).....	35½	37¾

* Ex-dividend. (a) Asked. † Last sale.

Iron and Steel

The scarcity of steel continues to grow more and more apparent. Talk of the necessity of fruitless imports is heard more freely, and some authorities even go so far as to say that unless relief is obtained through foreign supplies there will be an actual famine in this country. Tonnage of pig iron is now fully taken up for the first half of 1902, and business is only booked for the second half. Large orders for delivery during this period have been reported during the past week. The inability to secure accommodation at home has driven the Southern Railroad to consider the advisability of importing 10,000 tons of steel rails, needed for early use, from abroad. Prices are still being held in check, but by main force only. Nominal quotations are, for Bessemer pig, \$16.75; for steel billets \$28.50 to \$29, and for rails, \$28.

Metals.

Copper is quoted at 12¾ cents bid, tin at 24½ cents, lead at 4¾ cents, and spelter at 4.10 cents.

CHICAGO, ILL.—The Metropolitan West Side Elevated Railway Company declared a semi-annual dividend of 1 per cent on its preferred stock at the directors' meeting. This makes a total of 3 per cent for the year ending Feb. 28, as against 3½ per cent the year before. The decrease in dividend was due to the increase in taxes of \$74,000, making the total tax about \$126,000, and the collisions in the fog in November last, which cost the company \$37,500. All claims arising from those accidents have been settled.

NEW ORLEANS, LA.—The New Orleans Railway Company, capitalized at \$5,000,000, the corporation to which H. H. Pearson, Jr., has assigned his contract for the lease of the New Orleans City Railroad, was incorporated Jan. 28 under the laws of New Jersey. The date of the meeting of the stockholders of the New Orleans City Railroad to vote on the proposition to lease the property has been fixed as March 24.

MENOMINEE, MICH.—Public announcement of the consolidation of the Menominee Electric Light, Railway & Power Company and the Marinette Gas, Electric Light & Street Railway Company was made Feb. 3. The stockholders of the new company are: S. K. Stephenson, A. Spies, H. O. Carpenter, Ed. Daniels, F. A. Spies, John Hens, G. M. Blesch, of Menominee; Isaac Stephenson, A. C. Merriman, of Marinette; Jesse Spalding, of Chicago.

BROOKLYN, N. Y.—The Brooklyn Rapid Transit system, all companies, reports for December:

	1901	1900
Gross earnings	\$1,035,525	\$978,025
Operating expenses, including taxes.....	753,512	672,567
Net earnings	\$282,013	\$305,459
For the six months ending Dec. 31		
Gross earnings	\$6,534,045	\$6,137,956
Operating expenses, including taxes.....	4,515,871	3,902,051
Net earnings	\$2,018,174	\$2,235,905

FOSTORIA, OHIO.—The Ohio Northwestern Railway, which is building an electric railway from Fostoria to Mungen, has filed a trust deed for \$350,000, furnishing funds for the building of the road. Contracts have been let to the Consolidated Railway & Light Company, of Philadelphia, for the construction of car houses, offices, construction cars and a 15-ton electric locomotive for construction work.

MT. VERNON, OHIO.—The Mt. Vernon Street Railway Company and the Mt. Vernon Electric Light Company have passed into the hands of the Jackson-O'Neill syndicate. The sale also includes Lake Hiawatha Park, a fine pleasure resort. Hereafter all three properties will be operated under one management. J. W. O'Neill, of Topeka, Kan., is president of the new company, and C. E. Johnson, secretary-treasurer and general manager. D. K. Bird, the former general manager, retains stock in the company, but retires from active management. The street car lines and lighting plant will be improved.

YOUNGSTOWN, OHIO.—To provide for an issue of 5 per cent bonds, not to exceed \$1,000,000, the Youngstown & Sharon Railway & Light Company has given a second mortgage in that amount to the New York Security & Trust Company, of New York. The mortgage applies to the following properties controlled by the company: Youngstown Consolidated Gas & Electric Company, Youngstown & Sharon Street Railway, Sharon Gas & Water Company, Shenango Valley Electric Light Company, Sharon & Wheatland Street Railway, Valley Street Railway, Sharpsville Electric Light Company, Merchants' Light, Heat & Power Company, and the New Castle & Sharon Street Railway. The bonds were authorized to be issued at a meeting of the company held Jan. 7.

DAYTON, OHIO.—The Dayton, Covington & Piqua Traction Company, originally promoted by Judge Dennis Dwyer, has been sold to Cleveland people who are represented by J. A. Garfield, a son of former President Garfield. The road is under construction.

CLEVELAND, OHIO.—The Savings & Trust Company has sold to E. H. Rollins & Son, Boston bankers, \$326,000 of Canton-Massillon Railway Company's bonds. The money thus received will be used in paying off \$200,000 of floating indebtedness, in making improvements to overhead service, and in buying new cars. The road is now owned by the Northern Ohio Traction Company, an Everett-Moore property.

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.

COMPANY	Period	Total Gross Earnings	Operating Expenses	Net Earnings	Deductions From Income	Net Income, Amount Avail-able for Dividends	COMPANY	Period	Total Gross Earnings	Operating Expenses	Net Earnings	Deductions From Income	Net Income, Amount Avail-able for Dividends
AKRON, O.							DULUTH, MINN.						
Northern Ohio Tr. Co.	1 m., Dec. '01	53,384	*30,968	22,516	13,259	9,257	Duluth-Superior Tr.	1 m., Dec. '01	40,541	25,042	15,499	9,219	6,287
	1 " " '00	38,395	*22,089	16,306	5,148	11,158		1 " " '00	37,211	23,239	13,973	8,929	5,044
	9 " " '01	462,800	263,361	199,439	98,973	100,466		12 " " '00	453,704	251,315	202,389	109,967	92,422
	9 " " '00	387,972	241,782	146,190	109,786	36,404	ELGIN, ILL.						
	12 " Dec. '01	617,011	*350,845	266,166	136,162	130,004	Elgin, Aurora &	1 m., Dec. '01	17,779	12,421	10,550	1,871	-----
	12 " " '00	513,725	*317,475	196,249	141,133	55,117	Southern Tr.	1 " " '00	26,439	18,122	8,317	-----	-----
								6 " " '01	193,723	98,181	95,542	63,300	32,242
ALBANY, N. Y.								6 " " '00	163,630	103,644	59,986	-----	-----
United Traction Co.	1 m., Jan. '02	118,979	89,126	29,853	21,963	7,890	HAMILTON, O.						
	1 " " '01	107,045	79,196	28,849	19,901	7,948	Southern Ohio Tr. Co.	1 m., Dec. '01	25,309	14,781	10,528	7,500	3,028
	7 " " '02	870,342	587,539	282,803	144,980	137,823		12 " " '00	24,744	14,339	10,405	7,500	2,905
	7 " " '01	820,808	553,279	267,529	139,731	127,798		12 " " '01	337,741	182,954	154,787	90,000	64,787
								12 " " '00	294,907	154,465	140,542	90,000	50,542
AUGUSTA, GA.							LONDON, ONT.						
Augusta Ry. & Elec. Co.	1 m., Oct. '01	18,031	10,012	8,019	-----	-----	London St. Ry. Co.	1 m., Dec. '01	12,947	6,280	6,667	1,859	4,808
	1 " " '00	15,772	9,668	6,104	-----	-----		1 " " '00	11,043	5,324	5,719	1,682	4,037
	10 " " '01	169,950	102,279	67,671	-----	-----		12 " " '01	141,446	84,557	57,289	23,835	33,454
	10 " " '00	157,049	91,785	65,264	-----	-----		12 " " '00	119,109	78,501	40,608	21,624	18,985
BINGHAMTON, N. Y.							MILWAUKEE, WIS.						
Binghamton St. Ry. Co.	1 m., Jan. '02	15,169	10,599	4,570	-----	-----	Milwaukee El. Ry. &	1 m., Dec. '01	243,927	105,659	138,267	67,162	71,105
	1 " " '01	13,367	9,065	4,302	-----	-----	Lt.	1 " " '00	209,887	97,987	111,900	69,742	42,158
	7 " " '02	128,560	96,521	62,029	-----	-----		12 " " '01	2,442,342	1,185,534	1,256,808	753,139	501,669
	7 " " '01	113,589	58,518	55,071	-----	-----		12 " " '00	2,220,698	1,129,787	1,090,911	824,665	266,247
BOSTON, MASS.							MINNEAPOLIS, MINN.						
Boston Elev. Ry. Co.	12 m., Sept. '01	10,869,496	7,336,597	3,532,899	2,896,359	636,539	Twin City R. T. Co.	1 m., Dec. '01	294,341	114,106	180,235	46,850	133,385
	12 " " '00	10,236,994	6,828,110	3,408,884	2,932,839	470,044		1 " " '00	256,830	104,704	152,115	36,701	105,414
								12 " " '01	3,173,975	1,415,451	1,758,524	666,628	1,091,886
Massachusetts Elec. Cos	12 m., Sept. '01	5,778,133	3,915,486	1,862,648	937,206	925,442		12 " " '00	2,839,355	1,304,689	1,534,666	624,326	910,340
	12 " " '00	5,518,837	3,659,337	1,859,500	994,294	865,206	MONTREAL, CAN.						
							Montreal St. Ry. Co.	1 m., Dec. '01	158,196	105,667	52,589	15,185	37,404
BROOKLYN, N. Y.								1 " " '00	148,637	96,736	51,901	9,220	42,681
Brooklyn R. T. Co.	1 m., Dec. '01	1,035,525	*753,512	282,013	-----	-----		3 " " '01	479,169	287,307	191,862	44,536	147,326
	1 " " '00	978,026	*672,568	305,459	-----	-----		3 " " '00	455,530	278,805	176,724	28,018	148,707
	6 " " '01	6,534,045	*4513871	2,018,174	-----	-----	NEW YORK CITY.						
	6 " " '00	6,137,956	*3902052	2,235,905	-----	-----	Manhattan Ry. Co.	3 m., Sept. '01	2,284,565	1,312,130	972,434	632,350	340,084
	12 " June '01	12,135,559	*7216008	4,919,551	4,341,748	577,803		1 " " '00	2,081,964	1,236,711	845,253	626,925	328,328
	12 " " '00	11,768,550	*7106373	4,602,177	4,135,405	526,772		12 " " '01	10,455,872	5,328,649	5,127,223	2,482,132	2,444,091
								12 " " '00	9,950,735	5,195,312	4,755,423	2,688,644	2,066,779
BUFFALO, N. Y.							Metropolitan St. Ry.	3 m., Sept. '01	3,750,285	1,563,260	2,187,025	1,148,714	1,038,311
Buffalo International Tr. Co.	1 m., Nov. '01	283,710	174,195	109,515	93,399	16,116		1 " " '00	3,608,306	1,555,036	2,053,270	1,128,985	924,285
	1 " " '00	239,439	124,599	114,841	80,941	33,900		12 " June '01	14,720,767	6,755,131	7,965,636	4,531,068	3,431,567
	5 " " '01	2,761,503	1,203,882	1,557,621	501,533	1,056,088		12 " " '01	14,437,134	6,631,254	7,805,880	4,445,720	3,360,160
	5 " " '00	1,271,327	593,798	677,529	405,492	272,038	OLEAN, N. Y.						
CHICAGO, ILL.							Olean St. Ry. Co.	1 m., Nov. '01	4,200	2,044	2,156	1,146	1,010
Chicago & Milwaukee	1 m., Jan. '02	10,954	5,873	5,081	-----	-----		1 " " '00	3,934	2,392	1,541	1,597	-----
Elec. Ry. Co.	1 " " '01	8,232	5,639	2,592	-----	-----		5 " " '01	25,876	11,077	14,799	7,160	7,640
	12 " Dec. '01	171,172	74,015	97,157	-----	-----		5 " " '00	23,837	11,005	12,832	7,276	5,555
	12 " " '00	140,685	59,515	81,169	-----	-----	PITTSBURG, PA.						
Lake Street Elevated	12 m., Dec. '01	786,462	388,799	397,663	-----	-----	Consolidated Traction	1 m., Dec. '01	304,669	140,941	163,728	91,548	72,180
	12 " " '00	757,954	378,661	379,293	-----	-----		1 " " '00	277,439	109,069	168,370	89,807	78,563
CLEVELAND, O.								9 " " '01	2,649,656	1,145,651	1,503,905	807,667	694,238
Cleveland & Chagrin	1 m., Dec. '01	4,306	*2,420	1,886	1,380	506		9 " " '00	2,471,696	1,013,246	1,458,456	799,704	658,752
	1 " " '00	4,040	*2,477	1,563	1,417	146	PHILADELPHIA, PA.						
	12 " " '01	47,976	*32,002	15,974	13,023	2,951	American Railways	1 m., Jan. '02	78,752	-----	-----	-----	-----
	12 " " '00	49,646	*33,372	16,274	13,294	3,080		1 " " '01	62,746	-----	-----	-----	-----
								7 " " '02	579,962	-----	-----	-----	-----
Cleveland & Eastern.	1 m., Dec. '01	7,473	*3,565	3,908	3,545	363		7 " " '01	503,936	-----	-----	-----	-----
	1 " " '00	5,171	*3,731	1,440	3,232	†1,792	RICHMOND, VA.						
	12 " " '01	90,390	52,022	38,368	43,678	†4,310	Richmond Trac. Co.	1 m., Sept. '01	20,991	15,669	5,322	3,196	2,126
	12 " " '00	62,893	36,672	26,221	36,148	†9,927		1 " " '00	20,727	10,770	9,957	3,843	6,115
								12 " " '01	218,569	139,542	79,027	38,618	40,410
Cleveland El. Ry. Co.	1 m., Dec. '01	199,688	107,170	91,918	21,705	70,213		12 " " '00	203,057	108,198	94,859	37,608	57,250
	1 " " '00	185,455	101,437	84,018	19,475	64,543	ROCHESTER, N. Y.						
	12 " " '01	2,296,898	1,265,953	1,030,945	244,331	786,714	Rochester Ry.	1 m., Nov. '01	85,925	41,963	40,962	25,062	15,900
	12 " " '00	2,061,505	1,121,037	940,467	258,483	681,984		1 " " '00	82,325	48,997	33,328	24,229	8,999
Cleveland, Elyria & Western.	1 m., Dec. '01	19,406	11,098	8,309	7,770	538		5 " " '01	428,781	232,399	196,382	124,846	71,536
	1 " " '00	16,023	9,401	6,622	3,228	3,395		5 " " '00	405,911	244,182	161,736	120,770	40,975
	12 " " '01	249,250	136,865	112,394	57,023	55,371	SCRANTON, PA.						
	12 " " '00	179,698	102,393	77,304	34,562	42,742	Scranton Ry. Co.	1 m., Oct. '01	2,638	29,300	df26661	-----	-----
Cleveland, Painesville & Eastern.	1 m., Dec. '01	11,920	*6,681	5,239	6,042	†803		1 " " '00	48,781	34,787	13,993	-----	-----
	1 " " '00	9,926	*7,084	2,842	†3,960	-----		10 " " '01	507,989	295,079	212,910	-----	-----
	12 " " '01	164,971	*87,102	77,869	72,500	5,369		10 " " '00	504,852	298,122	206,730	-----	-----
	12 " " '00	141,112	*89,592	71,520	72,500	†980	SYRACUSE, N. Y.						
DENVER, COL.							Syracuse R. T. Co.	1 m., Dec. '01	63,471	34,374	29,097	19,025	10,072
Denver City Tramway	1 m., Dec. '01	132,509	67,478	65,031	32,431	32,600		1 " " '00	58,365	31,122	27,243	18,606	8,636
	1 " " '00	114,562	58,444	56,118	31,072	25,047		6 " " '01	346,670	188,286	158,384	114,096	44,288
	12 " " '01	1,597,293	818,325	688,965	383,180	305,785		6 " " '00	304,930	166,236	138,693	111,754	26,939
	12 " " '00	1,302,290											

NEWS OF THE WEEK

CONSTRUCTION NOTES

BAKERSFIELD, CAL.—Work is to begin at once on the Bakersfield & Kern Street Railway. The road will be completed by July 1, it is expected.

MONROVIA, CAL.—The electric road between Los Angeles and Monrovia will probably now be complete in a short time. Difficulties in securing rights of way over the remaining eight miles of uncompleted track have prevented an earlier consummation, but these are now practically overcome and the road is expected to be in operation before June 1.

LOS ANGELES, CAL.—The Hellman-Huntington syndicate's Los Angeles-Long Beach Electric Railway will be graded by Contractor Robert Sherer. The 17-mile road will extend south from Washington Street to the Long Beach city limits at American Avenue, passing through Compton en route. There is a private right of way for the entire distance. The contract for the steel bridge spanning the San Gabriel River has been awarded to J. D. Mercereau. The grading must be completed by April 1 next. The road will be in operation about Jan. 1, 1903. It will be laid with 60-pound steel rails. The cost of construction is estimated at \$1,000,000.

AIKEN, GA.—The Aiken-Augusta Electric Railway has been completed to Coldwater. James U. Jackson, who is interested in the development of Aiken, and who is planning to erect there a large hotel, is the general manager of the company.

DAHLONEGA, GA.—More than eight miles of the route of the Gainesville & Dahlonega Electric Railway have been graded and the work of erecting poles for the line is to be begun at once. The work on the large dam and power house on the Chestatee River, which will furnish power for the road, is being pushed to completion. The road will follow the valley and river banks to Dahlonega, a distance of 25 miles, through one of the richest farming and mining sections in the South, and from it can be viewed some of the finest natural scenery that north Georgia affords.

DES MOINES, IA.—The recent cold weather, together with the recent heavy fall of snow, have put a stop to the work of grading the extension of the Interurban Railway Company from Des Moines to Colfax. The work of grading will be resumed as soon as the weather permits, and will be rushed until it is completed. It is the intention of the company to have the line completed by July 1.

DES MOINES, IA.—A bill granting the Des Moines City Railway Company the right to extend its Fair Grounds line into the Fair Grounds will undoubtedly be introduced and passed at the present session of the Legislature. Terminals will be built on the grounds, for which special permission will be granted by the local authorities.

GLASGOW, KY.—The Glasgow & Burksville & Cumberland Valley Traction Company has been incorporated, with a capital stock of \$10,000, with the right to increase the same to \$500,000. The purpose of the company is to build an electric railway from Glasgow to Burksville by way of Sumner Shade and Edmonston, a distance of 40 miles, and also to furnish heat, lights and power to towns along its route at its terminus. J. S. Leech, J. W. Jones, of Glasgow; W. P. Dickerson, of Newport, Ky.; J. A. Dixon, C. W. Alexander, J. E. McMurtry, of Burksville; James I. Alexander, of Marrowbone, are among those interested in the company. A meeting of the stockholders will be held in Glasgow Feb. 10 next to elect officers and begin to perfect organization.

BANGOR, ME.—The entire issue of bonds to the amount of \$250,000 has been placed by the Penobscot Central Railway with Montgomery, Rollins & Co., and the work of extending the road to Charleston will be begun at once. Both this branch and the one to Pershaw Lake are expected to be in operation by July 1.

BIDDEFORD, ME.—The Biddeford Pool Electric Railway Company has applied to the Railroad Commissioners for a charter. The plan of the company is to build an electric railway from Biddeford to the Pool, a distance of nine miles. The capital stock is to be \$80,000. Charles M. Moses, William J. Maybury, Charles E. Atwood, Charles B. Harmon and Edward A. Hubbard are among those interested in the company.

SPRINGFIELD, MASS.—A corporation is being organized to build and operate an electric railway from Ludlow, through Indian Orchard, by Bircham Bend, to Chicopee Falls. George N. Merrill, of Springfield, is promoting the enterprise.

NORTHFIELD, MASS.—Several meetings of those interested in the plan to build an electric railway from East Northfield to Millers Falls, a distance of 10 miles, have been held here recently. Estimates of the cost of building the line have been placed at so low a figure as \$150,000, to raise which amount it is planned to issue \$75,000 in stock and \$75,000 in bonds. J. A. Taggart, C. W. Clapp and D. T. Abercrombie, Jr., are among those interested.

GRAND RAPIDS, MICH.—The Grand Rapids Railway Company has in contemplation the extension of its tracks down South Ionia Street to Wealthy or First Avenues, thence to South Division Street, and route one of its South Division Street lines through that way. Another extension that will be built, providing the proposed electric railway at Belding is not built, will be to Mill Creek.

LITTLE FALLS, MINN.—The Minnesota Midland Electric Railway Company, capitalized at \$100,000, has been incorporated to carry out the plan for constructing an electric railway here. In fact, two lines will be built—one to extend from Little Falls to the south line of Morrison County; the other from Little Falls to the east line of Morrison County. The incorporators of the company are: B. H. Warren, of Pittsburgh, Pa.; George Hebard, J. A. Woods, of New York; Milton Williams, R. E. Lester, T. C. Gordon, of

Little Falls. These same interests have also incorporated the Morrison County Electric Heat & Power Company, capitalized at \$50,000.

COLUMBUS, MISS.—Raymond Johnson, of Buffalo, N. Y., has been here for some days figuring with local men on the construction of a street railway. Judge Newman Cayce is interested in the enterprise.

LACONIA, N. H.—The Laconia Street Railway Company has decided to apply to the Supreme Court for permission to extend its lines to Tilton and Franklin and from Franklin to Penacook. Such portions of the road as are not now standard gage will be converted.

TRENTON, N. J.—The New Jersey Subway Company has been incorporated by Robert A. Montgomery, local agent of the asphalt trust, and Alfred M. Worstall and Frank H. Leonard. The purpose of the company, it is said, is to bid on the contract for tunneling under the Hudson River from Jersey City to New York.

PATERSON, N. J.—The promoters of an electric railway which will connect Paterson with Ridgewood have applied for a franchise at Ridgewood. The road will extend through Hawthorne, North Paterson and Midland Park, and at a later date will be still further extended to Suffern, on the State line. Connections will be made at Paterson with roads to Passaic, Newark and Hoboken.

BUFFALO, N. Y.—The Buffalo, Springfield & Cattaraugus Railway Company was incorporated Feb. 8. The purpose of the company is to build an electric railway from Cattaraugus, Cattaraugus County, to Hamburg, Erie County, a distance of 38 miles. The capital of the company is \$1,000,000.

TROY, N. Y.—Plans for the construction of the Troy Terminal Railroad have been perfected, and application for permission to build the road will be made to the Railroad Commissioners at once. The road will extend from Adams Street through Front Street to the State Dam, a distance of 2 miles. The road will be used for passenger and freight service. The officers of the company are: Joseph A. Leggett, president; Edward F. Murray, vice-president; Frank S. Davis, secretary and treasurer. Former Governor Frank S. Black is interested in the company.

HAMLET, N. C.—A company has secured from the Secretary of State a charter to build an electric railway to Hamlet and to Ellerbe Springs via Roberdell.

TOLEDO, OHIO.—President J. C. Hutchins, of the Detroit United Railway, has held several conferences recently with the owners of the Toledo & Monroe Railway, with a view to affecting a temporary arrangement whereby through traffic between Toledo and Detroit may be resumed. Nothing definite has been accomplished, but it appears certain that through traffic will be arranged for, since it would benefit both companies. It will be remembered that the Toledo & Monroe was held under lease and option by the Everett-Moore syndicate, but since the syndicate's embarrassment, both have been permitted to lapse. It is understood that the owners of the Toledo & Monroe are planning to extend the road to Detroit as originally intended. They still own a private right of way from Monroe almost to Detroit, and it is claimed that route between the two big cities would be shorter than that of the Detroit & Toledo Shore line.

TOLEDO, OHIO.—The Toledo & Indiana Railway has placed a contract with the Toledo & Indiana Construction Company, the terms of which call for the completion of the road to Wauseon by Oct. 1, 1902, and to Byran by Sept. 1, 1903. The railway company has secured all right of way, graded about sixteen miles of road, and erected abutments for a number of bridges. Work of laying rails will start as soon as possible.

SANDUSKY, OHIO.—J. C. Parker, promotor of the Sandusky, Clyde, Tiffin & Southern Railway, has been unable to agree with the Everett-Moore syndicate regarding terms for entrance to the city, and has asked the Council for a franchise.

AKRON, OHIO.—The Northern Ohio Traction Company has refused to accept the franchise recently granted for a line to South Akron. The company said it would accept if the "eight tickets for a quarter" clause and other features requiring the widening of streets and universal transfer system were eliminated.

KENTON, OHIO.—The Dayton & Kenton Traction Company has secured a private right of way from Dayton to New Carlisle, and right of way men are working all along the proposed route with good success.

EAST LIVERPOOL, OHIO.—H. G. Foltz, promotor of the line to connect Salem, Lisbon, East Liverpool and Youngstown, says that on account of the depressing effect on business of the Everett-Moore embarrassment, nothing will be done on his project for the present at least. He believes that later in the year it will be possible to carry out the project.

MARION, OHIO.—Franchises through town have been granted to the Columbus, Marion, Tiffin & Toledo Railway and the Findlay & Marion Electric Railway. The first mentioned company was given permission to build a double track through the town.

CINCINNATI, OHIO.—Earl Hoovens and others interested in the Cincinnati, Lawrenceburg & Aurora Railway are figuring on building an electric railway from Brookville to Cincinnati, extending through Mt. Carmel, Seipio, Venice and Georgetown.

LANCASTER, OHIO.—The Lancaster Traction Company held its annual meeting a few days ago. The directors of the company are: H. B. Peters, A. Bauman, E. K. Stewart and George Matt. The officers are: H. B. Peters, president; A. Bauman, vice-president; E. K. Stewart, secretary-treasurer. The company is building a new power station, and when it is completed two new cars will be placed in operation.