

INDEXED

Street Railway Journal

Vol. XXVII.

NEW YORK, SATURDAY, APRIL 21, 1906.

No. 16.

PUBLISHED EVERY SATURDAY BY THE
McGraw Publishing Company

MAIN OFFICE:

NEW YORK, ENGINEERING BUILDING, 114 LIBERTY STREET.

BRANCH OFFICES:

Chicago: Monadnock Block.

Philadelphia: Real Estate Trust Building.

Cleveland: Cuyahoga Building.

London: Hastings House, Norfolk Street, Strand.

Cable Address, "Stryjourn, New York"; "Stryjourn, London"—Lieber's Code used.

Copyright, 1906, McGraw Publishing Co.

TERMS OF SUBSCRIPTION

In the United States, Hawaii, Puerto Rico, Philippines, Cuba, Canada, Mexico and the Canal Zone.

Street Railway Journal (52 issues).....	\$3.00 per annum
Single copies	10 cents
Combination Rate, with Electric Railway Directory and Buyer's Manual (3 issues—February, August & November).....	\$4.00 per annum
Both of the above, in connection with American Street Railway Investments (The "Red Book"—Published annually in May; regular price, \$5.00 per copy).....	\$6.50 per annum

To All Countries Other Than Those Mentioned Above:

Street Railway Journal (52 issues), postage prepaid.....	\$6.00
25 shillings. 25 marks. 31 francs.	
Single copies	20 cents

Remittances for foreign subscriptions may be made through our European office.

NOTICE TO SUBSCRIBERS

REMITTANCES.—Remittances should be made by check, New York draft, or money order, in favor of the STREET RAILWAY JOURNAL.

CHANGE OF ADDRESS.—The old address should be given, as well as the new, and notice should be received a week in advance of the desired change.

BACK COPIES.—No copies are kept on sale beyond fifteen months from date of issue, except in bound volumes.

DATE ON WRAPPER shows the month at the end of which the subscription expires.

NOTICE TO ADVERTISERS

Changes of advertising copy should reach this office by 10 a. m. Monday preceding the date of publication, except the first issue of the month, for which changes of copy should be received two weeks prior to publication date. New advertisements for any issue will be accepted up to noon of Tuesday for the paper dated the following Saturday.

Of this issue of the Street Railway Journal, 8000 copies are printed. Total circulation for 1906 to date, 130,800 copies, an average of 8175 copies per week.

The Summer Road

It is nearly time for our annual diatribe concerning the management of summer traffic on the long list of electric roads that reach summer resorts along shore and in the hills. And the burden of our remarks will be, as usual, the missed opportunities for excursion and long-distance riding. There are literally dozens of roads so situated that, with a little co

operation and attention to details, they could very materially increase their summer earnings. It is not only the ball park and the amusement park that can pile up fares, but the regular riding for pleasure. Thousands of town dwellers depend very largely on the electric for their outings, but in spite of this, summer traffic has not been by any means worked to its legitimate conclusions. The main point, as it seems to us, is to increase the facilities for long-distance riding by a proper arrangement of through cars. We could mention not a few roads that are so situated as naturally to get a great deal of this business, but which, by failing to make proper connections, or neglecting to run through cars, forfeit a considerable amount of it. No one likes to make a trolley trip to a distant beach, however attractive, if the journey involves several changes of cars at local points, with many doubts about getting a seat, and with a strong probability of long delays. Through cars are important at all times of the year in bringing out traffic, as many of the interurban systems have already learned, but in summer they are doubly important.

Take, for example, a continuous track that runs for twenty miles or thirty miles along the coast. If operated as a continuous line and judiciously advertised it is likely to draw very large traffic, not alone on Sundays and holidays, but every day in the week for three months. If run in the way that is too common, it is shunned by a very large number of people who would otherwise gladly use it, merely because the trip is likely to be made uncomfortable by changes and waits. There is a possibility, now beginning to be realized, of working up quite a business in special daily excursions, with seats reserved for a small extra fare, which would add materially to the income of the system for at least a couple of months in the year. But apart from this line of operations, which should be encouraged, there is always the opportunity for the continuous trip, even if it has to be constructed by traffic arrangements with connecting roads, just as in the case of steam roads. What would be the business on these if they were as much split up into disconnected units, as are electric roads at the present time? Even the consolidation of electric lines as to ownership does not always imply physical cooperation to the extent that is desirable. It is an old lesson that should have been learned long ago. A judicious planning of summer through travel will not only make profits, but friends. Everyone who enjoys a successful excursion, with quick and comfortable service, is an active, though unpaid, advertising agent of the line, just as every long-waiting and exasperated strap-hanger is an abusive enemy. How often have we heard the tale, "I went down to Sculpin Beach by trolley yesterday—don't try it while there is a roof garden in business—four hours and three changes of cars—stood up the last half of the way." This theme, with variations, can be suppressed by good management—and it should be.

Tools in Repair Shops

Prompted by economy, a few electricians limit their tool kits to a pair of pliers and a screw driver. For the same reason, probably, some railway repair shops are almost as meagerly supplied with tools. In some a few monkey wrenches, sledge hammers and crowbars are all that can be found with which to do the great variety of work usually encountered in a repair shop. In almost every case it is certainly false economy to fail to supply proper tools to carry out the repairs. To be sure the work can be performed in a way with a limited supply of tools, but the manner in which it is done is often very discouraging to the workman who takes pride in his work, and the time required to do it frequently shows the reason why it costs so much more to get out the same work in one shop than in another. On the other hand it is undeniable that a good equipment of tools is an education of itself, as well as the best incentive to do his best with the proper kind of workman.

But to return to the most common defects in equipment. An insufficient supply of wrenches is very often noticeable. The fact that a monkey wrench can be made to turn almost every nut encountered, seemingly gives to some superintendents the idea that no others are needed. But many nuts are placed in angles, where only one-twelfth of a turn can be secured with each application of a flat, or monkey wrench. By perseverance, the workman may manage to get them tight. Usually, however, the nut wears round, and the workman's hand is well skinned by repeated slipping of the wrench before it is screwed up sufficiently. A cold chisel is often resorted to before a satisfactory job can be done. The appearance of the nuts, however, after the work is done, bears very little resemblance to the originals. A liberal supply of socket wrenches should always be at hand to use on nuts in otherwise inaccessible places. Such wrenches may cost, in labor and material, one or two dollars. But when 5 minutes or 10 minutes are lost by attempting to use a monkey wrench on each nut, it will be seen that a proper wrench will usually pay a pretty good return on the money invested.

But wrenches are not the only tools lacking in some shops. A pair of bolt cutters for cutting copper cables is frequently absent. To be sure, it is possible to conduct a shop without bolt cutters. Cables can be sawn in two with a hack saw, or a cold chisel may be employed to cut them, but the time required and the attending inconvenience makes a pair of bolt cutters preferable from every standpoint. Proper cold chisels, files, blow torches or pots, and similar tools are often not to be had. Yet the men in the shop are expected to make a good showing.

The absence of a pinion puller has often been noticed in shops. Instead of applying a puller and removing the pinion without injury, it is driven off by repeated blows from a sledge. The fact that a pinion puller is not in the shop can usually be discovered by observing the battered condition of the pinions. Any good blacksmith can make a pinion puller with a few hours' work, yet in some shops, for some unaccountable reason, pinions continue to be pounded off the armature shaft.

Nothing probably demoralizes a shop force more than the absence of proper tools, and the use of makeshift methods to get along without the tools. After a workman has pounded his hands up or skinned his knuckles through trying to work with improper tools, when he knows the management is at

fault, he is not likely to care much whether or not the job is done properly. An atmosphere of looseness in doing work will usually prevail sooner or later, and the slipshod, careless manner in which the work is turned out will begin to show itself in frequent breakdowns and increased cost of maintenance.

The Ethics of Headlights in City Streets

There is just now considerable discussion in regard to the use of powerful headlights on railways. There is no question that they are very desirable from the operating standpoint, and form one of the most powerful protections against accident which can be devised. It is equally certain that such a light may at times produce a glare that is a source of great annoyance to users of a contiguous highway. That it may be serious is evident enough, for the eye cannot readily see beyond a brilliant light and sees only with difficulty dimly lighted objects in its own vicinity. So long as a road is upon its own isolated right of way nobody is likely to be adversely affected—it is only in the common case of using the highway that the trouble begins.

But the blinding effect to which we have referred is by no means confined to the headlights of electric cars. The acetylene search lights in use on many automobiles are almost equally serious in their effects, the more so as the vehicles bearing them are actually running in a highway at a rate of speed generally greater than that of an electric car, and frequently very much greater. Just why the car should be criticised more than the automobile it is difficult to discover. So far as the public using the highways is concerned, it is desirable that all vehicles should carry lights, not for illumination of long stretches of road, but as markers to show plainly their locations. Anything more than such lights are rather disadvantageous save to the occupants of the vehicle, and the only advantage of very powerful lights is to show obstacles before they come within the dangerous space pertaining to that vehicle and speed. For the usual interurban cars this space is fairly long, and a correspondingly powerful light is needed for the purpose mentioned. It has generally been claimed for automobiles that the space required for stopping is very short, but this claim is somewhat belied by the huge searchlights that have come into use, unless one supposes that they are carried purely for amusement. At all events, in this headlight matter, electric cars and automobiles are certainly tarred with the same brush, and if one is a nuisance so is the other. In either case there is available the very simple remedy of dropping an opaque or translucent shutter over the offending light whenever it becomes necessary, and at present this is insisted upon in certain cities. In some localities the people rather like the bright headlight announcing the coming of the car from afar. When, however, the kicks begin to come, and show a strong sentiment in the other direction, a screen is worth considering.

The only unfortunate feature about the screen is that frequented roads are the very place where the headlight can be most useful, and in these places a serious reduction of light is objectionable unless the speed is considerably lower. But the plan has the advantage that the unscreened headlight can then be more freely used as the community gets used to the idea, and its advantages in reducing accidents become more generally recognized. Kicking thrives on opposition and generally does not long survive a sympathetic hearing.

Car Lighting

As we have frequently remarked, there is ample room for improvement in car lighting, but the subject is such a live one we hope we shall be pardoned if we refer again to some of the more salient features in the problem. The proper method of car lighting is a case in which the technical side of the question has not yet been properly studied, not, to be sure, from any lack of interest, but because the subject of illumination is, as a rule, far "off the beat," so to speak, of the average railway man. The result is that, while there is an ample, in fact, lavish expenditure of current for car lighting, the illumination is quite often bad. As we have pointed out, a car is a particularly troublesome space to light, because of its dimensions. It is often filled with people, many of whom stand in the aisle, and the lights ought to be so distributed as to give everyone ample light without thrusting a bulb fairly under his nose. Aside from this, the voltage upon electric lines, particularly interurban lines, is of necessity variable, and is subject to the worst variation during the crowded hours, when light is often most needed. There ought to be reform, but to secure it requires the active coöperation of the railway man and the lamp maker. The former must dispose his lights so skilfully that they may produce the best possible results for the energy used, while the latter must stand ready to furnish the kind of lights best adapted to give good light under the strenuous conditions found upon a trolley road.

As to the first part of the problem, the main thing is to give a well-distributed light without needless glare. On the whole, we believe that the distribution requirement can be best met by using two series of lights at the edges of the monitor roof, or higher, if the shape of the car permits. These should be either provided with ground bulbs or should be enclosed in mild diffusing globes, and could best be arranged by providing for them in building the car roof, instead of sticking them on afterward. They certainly need not be of high candle-power, and, if furnished with proper diffusers, will give a fairly even and pleasant illumination, ample in amount without exceeding the energy now generally devoted to lighting. But even the most judiciously placed lamp will not do good work if it flickers badly with every shift or voltage. Here is where the skill of the lamp maker can come in. An ordinary carbon filament 16-cp lamp varies in light to the extent of almost a candle-power per volt, and hence of necessity the light flickers on very small provocation. But there are now lamps available, or soon to be available, in which the resistance of the filament increases with the temperature, instead of decreasing, as in the case of ordinary carbon. Hence there is a certain tendency toward self regulation which ought to be valuable in working at varying voltage, particularly if the lamps are not pushed to higher efficiency than is now usual. Both the tantalum and the "metallized" filament lamps, when worked at moderate efficiency, have something of this quality, and since the latter can be varied in temperature coefficient by its treatment, there should be opportunity to produce a lamp relatively steadier under varying voltage than the common forms. There is at least a chance for a useful improvement of this kind, and we commend the subject to the lamp makers for earnest consideration. Given a lamp of such character, and the whole matter of proper car illumination would be much simplified.

The Selection of Incandescent Lamps

While upon this subject of lamps, it might be well to refer to the subject of their scientific selection and purchase. This is a matter which until quite recently has received comparatively little attention from street railways. To a certain extent, this statement also applies to various other small supplies, such as oil, grease, paint and fittings. The tendency in many cases is to buy material of this character largely on the basis of price. To test this class of equipment costs quite a little money and time, considering the value of a given consignment, and there is no doubt that, in a good many instances, it hardly pays to follow up the matter further than to secure data bearing upon the life of the material in actual service. On a large system, however, the cost of supplies runs well up into the tens of thousands of dollars each year, and some companies find it highly profitable to maintain a laboratory where commercial, physical and chemical tests can be made to supply information to the purchasing and operating departments. There is no reason why small companies could not club together in this kind of work and share the expense of any researches which from time to time seem necessary, or else utilize the services of some established laboratory.

In buying incandescent lamps, however, service tests can be made with the greatest satisfaction only upon the particular system which is to use them, for only in this way can a correct idea be obtained of the life under the conditions of vibration prevailing on any given set of routes. It is also easily possible to make comparative life tests under specified voltage or current conditions without putting the trial lamps upon the cars, and this method gives excellent relative results when lamp specifications are drawn, to inform bidders in detail just what tests are to be imposed. Long life is a fundamental necessity in a railway lamp. A life of from 600 hours to 800 hours may satisfy the requirements of a central station on account of the gain in efficiency, but in street railway car service a life of from 1000 hours to 1500 hours, or even 1800 hours, is generally regarded as more acceptable, even though it may mean specifying 4 watts per candle power for lamp efficiency instead of 3.5 watts, or possibly 3.1 watts. With the advent of the new high-efficiency lighting units for large service, a stimulus has been imparted toward the production of lamps of about 20 cp, and when these appear on the market at efficiencies of 2.5 watts, or possibly 2.4 watts, per candle-power, it will be well worth while for the street railway manager to investigate the cost of using an improved lamp, bearing in mind first cost, life and energy consumption.

Aside from the question of life, the percentage of burnouts, maintenance of candle-power within the specified limits, self regulation with varying voltage, as discussed in the previous editorial, and rate of increase of energy consumption with life should receive attention in the selection of lamps. Tests of this kind can be pretty well tried out at the power station or shop. An impression prevails in some localities that lamps cannot well be studied with reference to their life in actual car service, but it ought to be a simple matter to mark the bases and keep a single burnout record through the coöperation of the car house foreman. The question is worth looking into at all events. The reliable maker has no cause to fear a thoroughly scientific test, and it is a matter of some consequence to an operating road to know just what it is getting.

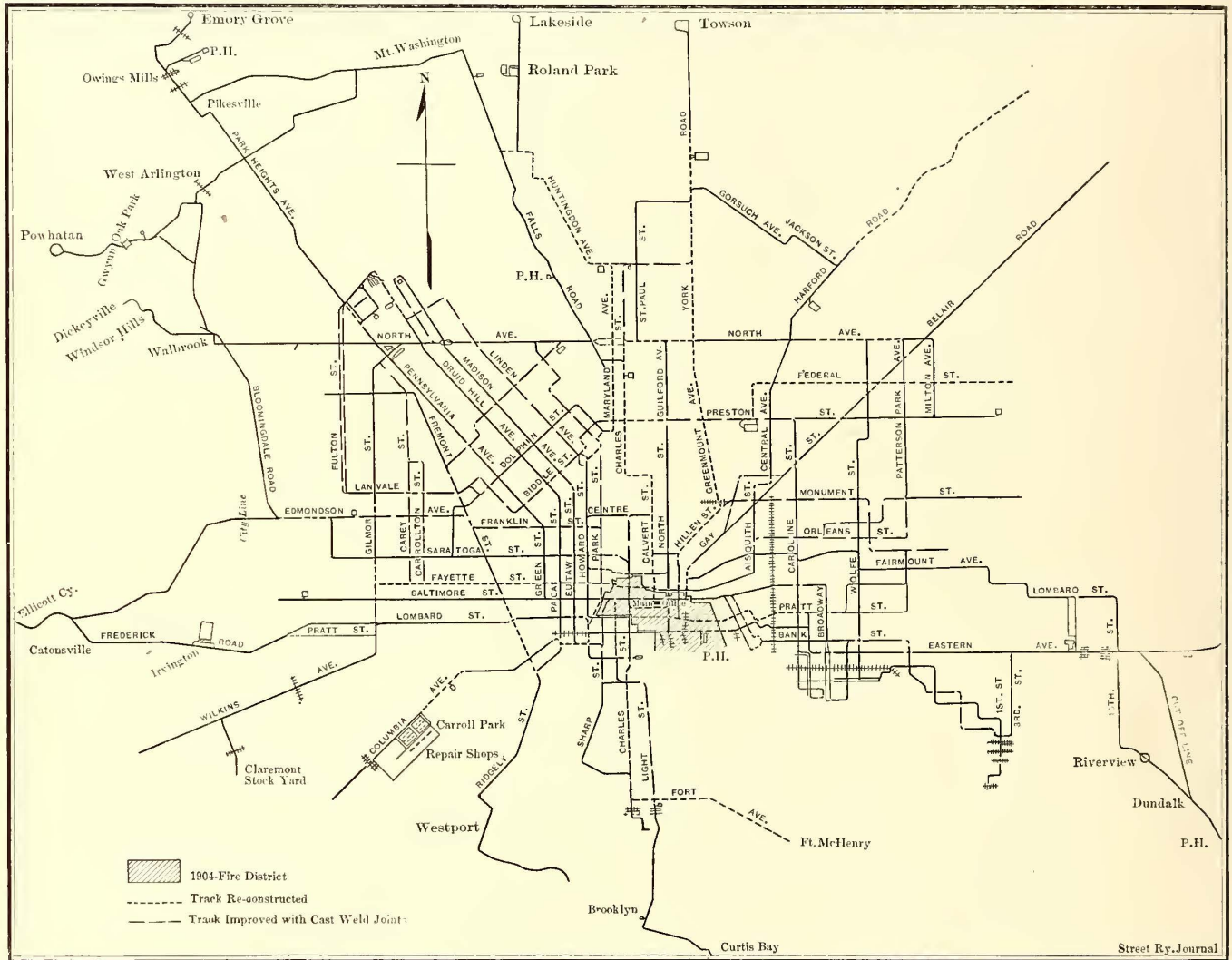
THE RECONSTRUCTED BALTIMORE SYSTEM

The United Railways & Electric Company, of Baltimore, was in February, 1904, called upon to pass through an ordeal without a parallel in electric railway experience. The great conflagration, which for two days, Feb. 7 and 8, raged through the business section of the city, embracing an area of several square miles, was so overwhelming in its magnitude as to completely paralyze for a time the company's operations. The burnt district occupied a tract of ground in the business section between the harbor and a steep hill, this section forming virtually a narrow throat through which passes the concentrated traffic between the eastern and western sections of the

ment of the havoc wrought in the operations and property of the railway company, together with the work accomplished during the past two years in bringing the property to a higher state of efficiency than it enjoyed before the destruction, will prove both interesting and instructive.

The fire started about 10:05 a. m., Feb. 7, in the wholesale dry goods establishment of John E. Hurst & Co., but did not reach the offices of the railway company in the Continental Trust Building until 10 p. m., and the Pratt Street power house of the company until about 4:50 a. m., Feb. 8.

The company's offices occupied the ninth and tenth floors of the Continental Trust Building, a thoroughly modern, supposedly fireproof office structure, located on the principal



MAP SHOWING COMPLETE SYSTEM OF THE UNITED RAILWAYS & ELECTRIC COMPANY, OF BALTIMORE

city. The closing of this throat left the railway company with virtually two isolated systems, with all connections between the two temporarily severed. That in so short a time the company was able to clear its tracks of the tons of debris, restore its entire system of poles and overhead work in the burnt district, rehabilitate its power generating and transmitting facilities, which had been badly crippled by the fire, and withal, that it could pass through the remainder of the year with operating financial results only slightly less favorable than those of the previous year, and enter the succeeding year free of floating debt, with improved motive power, tracks and car equipment is a fact that bears forcible testimony to the vigor, energy and skill of the management.

Although the fire has now passed into history, a state-

business street. It may be added, that when attacked by the flames this building proved utterly unable to resist the high temperature, the fire quickly breaking the plate glass windows on the various floors, and finding sufficient inflammable material in the wooden wainscottings and linings to completely destroyed the interior of the structure. As it became apparent for an hour or two before the offices were burnt that the fire would reach them, provision was made for protecting the records and valuable papers of the various offices, either by storing them in the supposed fireproof vaults, or by sending them by car to the Park terminus on Druid Hill Avenue. While the papers of the president's office were saved, many of the important papers and books of the general manager's, treasurer's, auditor's and claim department offices were destroyed, due to failure of the vaults.

The original portion of the main Pratt Street power house, fronting on Pratt Street and Dugan's wharf, with the exception of the boiler room, was entirely destroyed. This portion of the power station contained all of the direct-current generating units, and the machinery destroyed included three 500-kw engines and generators, two 800-kw units, one 750-hp engine without generator, one exciter engine and three boosters. The section destroyed also included three 2500-hp vertical engines, direct connected to 1800-kw railway generators, but these units were not so badly damaged as to prevent their repair. One of these was patched up sufficiently to be put into service on March 7, the second one was ready for use on March 19, and the third on April 2. The partial saving of this machinery was due to the large traveling crane having been placed immediately over it to catch the falling roof, and to the main parts of the engines being of such magnitude as to resist warping or other serious damage by fire. The generators suffered much more severely than the engines.

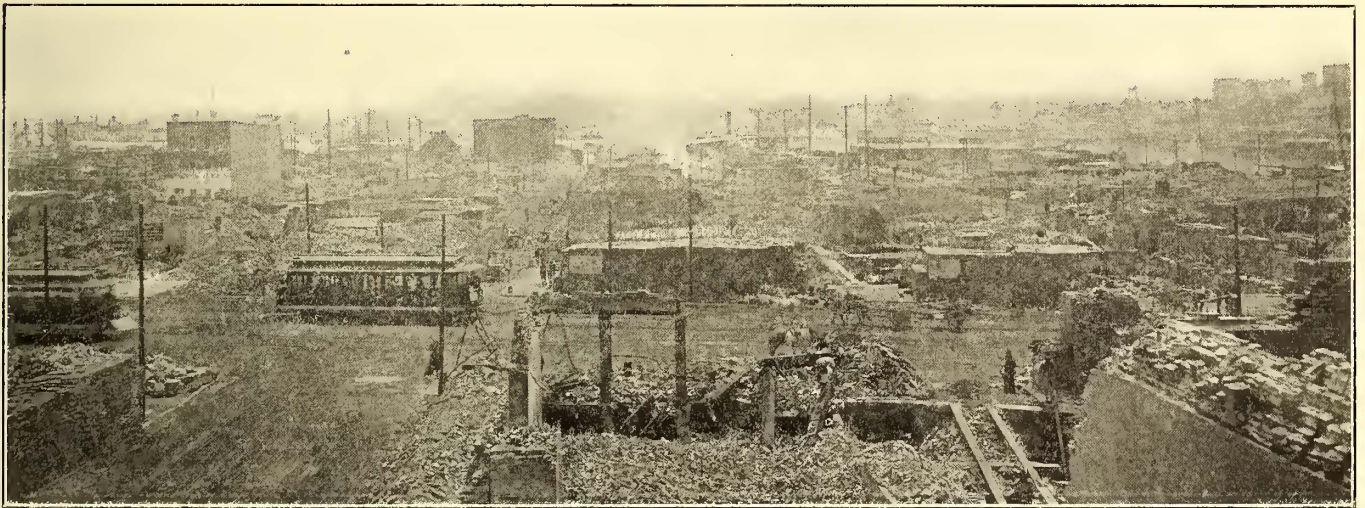
The boiler room, which is upon the west side of the building, extending its entire length, and which is separated from the engine room by a brick partition wall, escaped with very

out of commission owing to the flooding of the cable pits at the power house, and the burning off of the cable connections. Of course, many of the poles and trolley wires were destroyed by fire and falling walls, many of the wires being cut down ahead of the fire to facilitate the operations of the fire department.

As the car service was being operated upon many of the lines when their connections with the power house were broken, such cars were left stalled upon the streets until such time as temporary connections could be made, and on Feb. 8 fourteen of the company's lines outside the fire district were in operation.

The United Railways & Electric Company was one of the first institutions in the city to rally from the despondency of Blue Monday, the day following the fire, and many hours before the smoke had lifted from the stricken city, temporary offices for the various departments had been established wherever room could be obtained, and plans were under way for clearing the tracks of debris, restoring the overhead construction and repairing the damage to the power system.

Of prime importance in this connection are the lessons



GENERAL VIEW OF THE BALTIMORE BURNT DISTRICT, TAKEN SHORTLY AFTER THE DISASTER, IN FEBRUARY, 1904, SHOWING QUICK WORK ACCOMPLISHED BY THE UNITED RAILWAYS & ELECTRIC COMPANY IN RESTORING ITS SERVICE WHILE THE DISTRICT WAS STILL IN RUINS

slight injury, such as damage to doors and windows and to the coal hoisting apparatus on the wharf. The main contents of the building consisted of ten boilers, none of which were injured. In addition to the damage to this building and contents, the remnant of an old sugar refinery, at the corner of Dugan's wharf and Wood Street, south of the new engine house, which was partially occupied by the company as a storeroom, was completely burnt out with the exception of the brick walls, which remained in fair condition, and were soon afterward roofed in to serve as a temporary sub-station.

The contents of boiler house No. 2 were practically uninjured with the exception of the elevator and machinery appurtenant to it, and to the coal hoist. The contents of the new engine house, which house proved to be entirely fireproof, escaped without injury.

As the burnt district was almost coincident with the district in which all wires were carried in subways, the fire damage to transmission lines was largely confined to trolley wires and poles, the feeders and cables themselves, including the main cables connecting the power house with the sub-stations, entirely escaping injury on account of their being in the subways, although many of the cables were put

that were learned as a result of the conflagration. First and foremost, it was found that any wood was fatal in any structure intended to be fireproof. Not only was this demonstrated in the instance of many of the tall office buildings, several of which were gutted owing to the burning of the wooden floors and linings, but it was also shown in the destruction of a portion of the Pratt Street power house. This station was built of brick and steel, but it had a wooden roof. The brick walls withstood the attack remarkably well, but as soon as the roof caught from the outside, all efforts to save the building had to be abandoned. Incidentally, the heavy crane spanning the engine room in this station did excellent service not only in strengthening the walls and keeping them from total collapse, but also in catching a considerable portion of the roof and roof girders when they fell, thus protecting much of the machinery underneath from being completely buried in debris.

The two materials that, almost without exception, passed through the fire ordeal unscathed, were reinforced concrete and wire glass. The latter material in particular demonstrated its fire-resisting qualities, and in many places in the burnt district, plates of wire glass were left intact although subjected to direct contact with flames, as shown by their

blackened surfaces. Brick walls, where there were no wooden window frames and trimmings, also made an excellent showing, and it would appear from the Baltimore disaster that brick construction with metal doors, metal sills and trimmings, and wire glass in all the ventilators and windows will give a construction that will resist fire from the outside almost as well as concrete, providing the roof be of re-inforced concrete, terra cotta tiling or other non-inflammable material. A lighting sub-station located in the heart of the burnt district in Baltimore, and which was built with brick walls, re-inforced concrete roof and wire glass windows, although subjected to the direct attack of the flames was practically uninjured, and the machinery it contained was placed in service a few hours after the fire had past, or virtually as soon as the water had been pumped from the basement. In line with the lessons learned as a result of the fire, the Druid Hill Avenue sub-station, which owing to its immediate surroundings was much exposed, has been remodeled to reduce the fire risk by covering the south gable with corrugated iron and reconstructing the monitor roof with steel and wire glass. In

by the restrictions imposed by the city officials, both for general safety and in order to protect the interests of all concerned. For several months, service upon all tracks between Baltimore Street and the harbor, in a considerable portion of the burnt district, was rendered impossible by the construction and operation of steam railroad tracks on top of the electric railway tracks, in order to facilitate the removal of debris. In connection with the restoring of the burnt district, the city authorities elaborated a comprehensive scheme for widening the streets and changing the grades in the business section, and the perfecting of these plans also delayed the company in the work of restoring its service. In spite of all delays and obstacles, however, the first car was run through the burnt district Feb. 21, and a fairly satisfactory service throughout practically the entire district was restored within one month.

TRACK AND LINE STANDARDS

In reconstructing the overhead work occasion was taken to put in modern and first-class construction. The standards adopted include span wire, iron poles, cap and cone insulators



VIEWS SHOWING TYPICAL SITUATIONS CONFRONTING THE UNITED RAILWAYS & ELECTRIC COMPANY AFTER THE BALTIMORE FIRE, IN FEBRUARY, 1904

the same direction, the wooden floor system of the extensive steel viaduct across the valley of Stony Run, has been renewed in steel so that the only perishable portions of that important structure now remaining are the guard rails and foot-walks.

The fire proved the efficiency of underground conduits for protecting transmission wires from direct injury in widespread conflagrations. Practically all of the feeder cables and transmission lines of the United Railways & Electric Company within the burnt district were carried in underground conduits and subways, and the main portion of the distribution system escaped injury, although, of course, the terminal connections at the power house were destroyed. However, as soon as these connections were restored, the distribution system was found to be in good working order.

RECONSTRUCTION WORK

As soon as the fire had spent itself after raging uncontrolled for two days, the first concern of the company was to start the work of freeing its tracks of debris and restoring the poles and overhead lines. This was naturally a difficult and lengthy undertaking, due to the great number of tottering walls and ruins, and the inevitable delays occasioned

for city lines; and span wires, wood poles, cap and cone insulators for suburban lines. The company still has considerable center pole mast arm construction, both on city and suburban work, but only where such suspension is made necessary by local conditions.

Summarizing the work accomplished by the overhead department during 1904, 4 miles of lines were rebuilt with iron poles and 8 miles with wood poles; during 1905, 6 miles were rebuilt with iron poles and 8 miles with wood poles; or a total of 26 miles of overhead construction entirely rebuilt since the conflagration.

The tracks in the burnt district, except for being covered with great piles of debris, were not injured, practically none of the rails showing any signs of warping. However, as a result of the alteration in street grades and alignments, decided upon by the city, many of the lines were re-constructed with heavier rails, and during the two years that have elapsed since the fire, this work of renewing and reconstructing track has been extended to other parts of the system. The standard track construction adopted for all new work is a 9-in. Trilby rail, Pennsylvania Steel Company, section No. 276, weight 113 lbs. per yard, with 12-hole plates. The rail is laid on wooden ties with 10-in. cable plug terminal

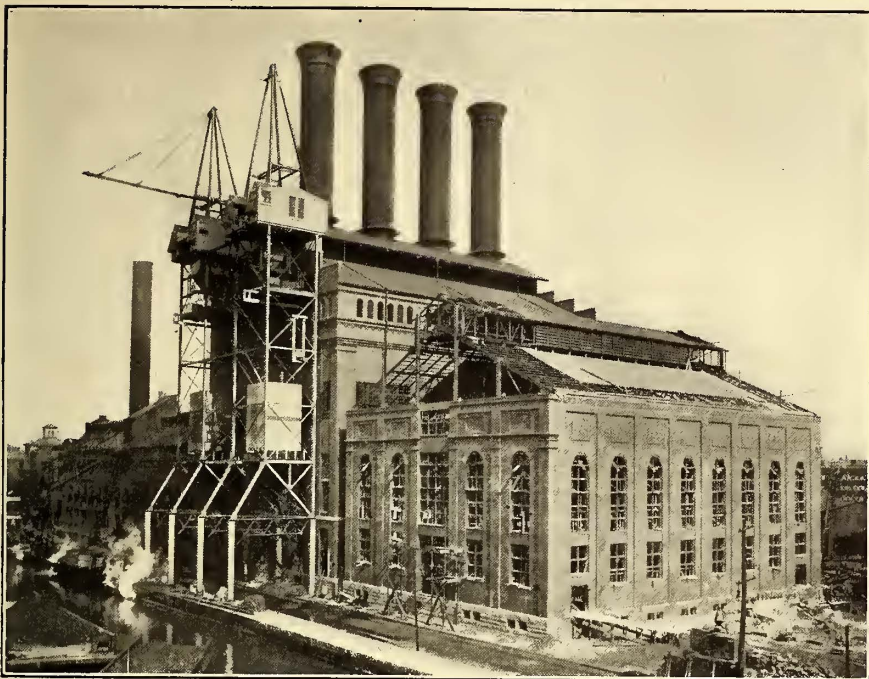
bond and Cox joints. In repairing old tracks, the rails are being cast welded at the joints by the Falk method. During the past two years 35.6 miles of track have been cast welded.

Summarized, the track department since the fire has reconstructed 5 miles of track with T rail; 36 miles with girder rail,

nating-current apparatus. The section of the building in which was housed the direct-current machinery, was totally destroyed, but the alternating-current side remained practically uninjured. This put all of the direct-current machinery out of commission, and although the company had

a sufficient supply of alternating current, it could not operate any of its lines in the direct-current zone, which included the burnt district, for lack of converting and transforming facilities. The first work of the company's engineers, therefore, was to make arrangements for sub-station apparatus. The remaining walls of an old sugar refinery building on the power station site were hastily roofed over, and in this improvised building were installed transformers and converters supplied by the Westinghouse Company upon rush orders. The apparatus included three 1000-kw rotaries and one 350-kw and two 100-kw motor-driven boosters. The sub-station was ready for business in about a month after the fire, and the company was able to resume regular operation on such of its lines throughout the city as were not blocked by debris. In the meantime, the work of reconstructing the burnt portion of the building was commenced, and three of the direct-current units that had passed through the fire were repaired and placed in service. Each of these units consists of a 2500-hp vertical cross-compound McIntosh & Seymour engine, direct connected to a 1800-kw General Electric Railway generator.

The alternating-current units at the Pratt Street station at the time of the fire comprised four 3000-hp McIntosh & Seymour vertical cross-compound engines direct connected to 2000-kw Westinghouse alternators. As stated, none of this machinery was injured. In December, 1904, a fifth unit of the same size was placed in operation, and there is now being installed a sixth unit comprising a 7500-hp McIntosh

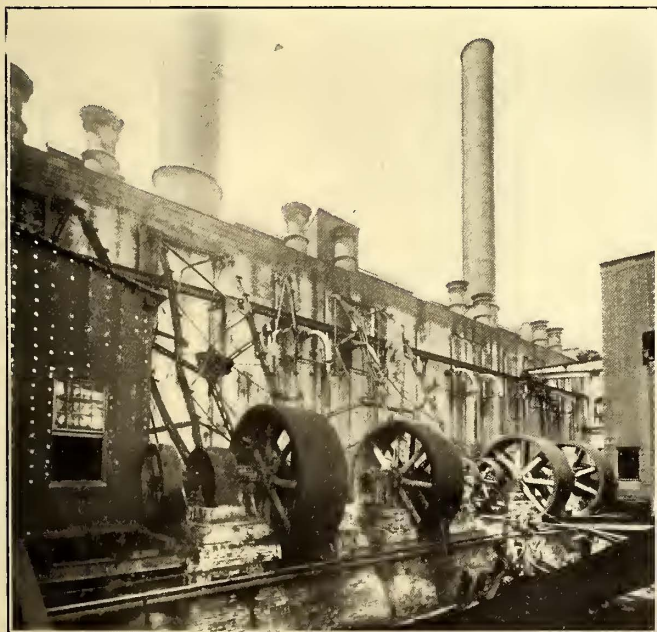


PRATT STREET POWER HOUSE OF THE UNITED RAILWAYS & ELECTRIC COMPANY, OF BALTIMORE, BEFORE THE FIRE DISASTER IN FEBRUARY, 1904

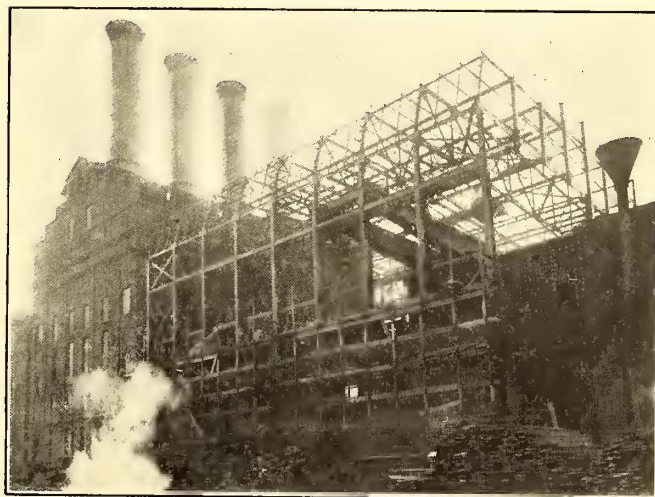
and has built 4.6 miles in new extensions with girder construction.

POWER SUPPLY

Coincident with the renewing of tracks and overhead work, the engineering department of the company has been busily



PORTION OF THE PRATT STREET STATION, DESTROYED BY THE FIRE



RECONSTRUCTING THE PORTION OF THE PRATT STREET POWER HOUSE THAT WAS DESTROYED BY THE FIRE

engaged in restoring and improving the power supply. As previously stated, the main generating station is located on Pratt Street on tide water. Previous to the fire, this plant consisted of two engine rooms with a double-deck boiler room between. One of the engine rooms contained the direct-current generating machinery, and the other the alter-

& Seymour vertical-horizontal cross-compound engine direct connected to a 5000-kw Westinghouse alternator.

These units comprise all of the generating machinery now at Pratt Street, and give a rated capacity of 30,000 hp and an overload capacity in the aggregate of 40,000 hp in power-generating apparatus.

To supply steam to the new units in course of installation, the boiler-room equipment is being increased by four batteries of B. & W. boilers, aggregating 4000 hp.

The original method of distribution was with direct current from a number of power houses located in different sections of the city. The new power scheme is to distribute from one central alternating-current station to rotary sub-stations located in outlying sections of the city, and distribute direct current from these points. All lines within an area of approximately one mile from the main generating station are fed direct with direct current generated at the main station.

At the main station, alternating current is generated at 13,000 volts, 60 cycles, and is transmitted at the initial voltage to sub-stations, of which, when the present plans are consummated, there will be five, as follows: Druid Hill Avenue, with 4500-kw capacity; Nunnery Lane, with 1500-kw capacity; Pratt Street, with 3000-kw capacity; Eastern, with 3000-kw capacity, and Northern, with 4000-kw capacity, giving a total of 16,000-kw capacity in converting apparatus. Three of the sub-stations are now in operation, and the fourth is under way and will be in operation in about six months. The sub-stations are connected with the main generator station by 3-conductor 13,000-volt cables laid in underground conduits.

To help out during the re-construction period, three old direct-current stations, that had previously been out of commission, have been temporarily restored and placed in operation, but these will be discontinued as soon as the improvements at the Pratt Street power house have been completed.

The company was fortunate in losing no cars as a result of the conflagration, and none of its car houses or shops were damaged. The natural increase in traffic, however, has necessitated new car operating and storage facilities, and the company is at present making plans for extensive additions to its present car house capacities. The rolling stock has also been recently increased by the purchase of 200 new cars of the Brill semi-convertible type.

GENERAL

As showing the remarkable progress that has been made by the citizens of Baltimore, in recovering from the effects of the disaster, it may be said that the area covered by the burned buildings was 2,300,000 sq. ft. Of this space, 335,000 sq. ft. has been taken for widening streets. Of the available space left for building purposes, about 1,500,000 sq. ft., or nearly 72 per cent, has now been rebuilt. The total floor space in the burned district was a little over 8,500,000, exclusive of the property for public purposes. Of this 6,613,000 sq. ft., or 79 per cent, has now been reconstructed. The value of the new buildings is estimated at about \$20,000,000, and over half of them are occupied or are ready for use.

VENTILATION IN THE SUBWAY

George S. Rice, chief engineer of the Board of Rapid Transit Commissioners, has just submitted a report containing his recommendations for ventilating the New York Subway. The investigations of Dr. Soper, as given in the *STREET RAILWAY JOURNAL* for March 31, show that the air in the subway is not very different from that outside, and that proper sanitation in the subway can be secured by ordinary means. The present difficulties arise because the heat generated in the operation of trains is not dissipated in a sufficiently rapid manner. To improve the conditions in summer the air must be renewed more frequently, and it must also be cooled. No definite plan is recommended for cooling, although Mr. Rice suggests three ways in which it may be accomplished, viz.,

by evaporation of water, by refrigeration, and by absorbing the heat by disposing relatively cool water throughout the subway in some manner to be determined upon.

To renew the air, Mr. Rice recommends the use of exhaust fans and also of automatic louvres or ventilators. The latter should be so constructed that they will only open outward, and the covers balanced so that they will remain closed, except when the interior air pressure is greater than that outside. They should be located midway between stations, and the air pressure produced by a train as it approaches them forces the louvres open. After the train has passed, the louvres will automatically close and the air necessary to replace that removed is drawn in through the station openings. Observations made upon louvres of this kind, which have been installed between the Columbus Circle and Ninety-Sixth Street station, show that approximately 20,000 cu. ft. per minute were discharged through 100 sq. ft. of louvres during the hours of maximum train movement. From 1 a. m. to 5 a. m., when very few trains were moving, only about 5000 cu. ft. were discharged through the same area. Mr. Rice recommends that these ventilators should be located between stations, so that the freshest air will be at the stations, and also so that such iron dust as may be liberated by the operation of the trains will be drawn into the interior of the tunnel and out through the exhaust openings there provided. He recommends that between Brooklyn Bridge and Columbus Circle station, fourteen outlet chambers of this kind be constructed; that they consist of both louvres and exhaust fans; that the fans should be used only during the three summer months, and for the twelve hours at night out of the twenty-four, excepting in emergencies, but that the automatic louvres be in constant operation. These ventilators will discharge their air through gratings in the sidewalks, but the rate of discharge will not be over 5 miles per hour and it will be deflected toward the center of the street. If this discharge should prove objectionable, ornamental chimneys, 10 ft. high, can be constructed. The cost for these fourteen ventilators is estimated at \$170,000.

Between Columbus Circle and Ninety-Sixth Street the subway is much cooler than south of Columbus Circle. Here fourteen sets of louvres and six fan outfits are recommended at a cost of \$40,000. In addition, it is proposed to cut out the vault light work in several stations, to provide larger inlets for fresh air. The cost of this work would be \$30,000. This apparatus would have the capacity of renewing the air in the subway once every thirty minutes.

It is stated that by July 1 the last of the old steam railroad elevated coaches of the Brooklyn Rapid Transit Company will have been rebuilt and equipped with motors, according to the plans set forth in the *STREET RAILWAY JOURNAL* of Aug. 13 and 20, 1904. This work has all been carried out at the Thirty-Ninth Street shops, which were fitted especially for the purpose. Upon the completion of the work, the building will be remodeled somewhat and converted into a paint shop for the surface and elevated cars of the entire system. A cut has been roofed and transformed into a tunnel 1200 ft. long, adding much valuable acreage to South Brooklyn, and yet affording a ready means of access to the shop. Within a few months an absolutely fireproof building has been erected for oil and paint storage. Into this building have been brought tanks for the storage of lubricating and illuminating oils, and still greater tanks for varnishes and paint ingredients. A portion of the present shop is to be used for a paint and drying room. Two hundred surface and elevated cars can be housed in it at once. The surface cars, in particular, require a great deal of work.

GOOD WIRING PRACTICE ON CARS AT WASHINGTON, D. C.

Gordon Campbell, master mechanic of the Washington Railway & Electric Company, of Washington, D. C., has worked out a simple and practical system of wiring cars in-

In the first place protection in general against damage from electrical causes is secured by covering the under side of the car floor over motors, rheostats, plows, and arresters with transite or asbestos lumber. For this purpose fireproof material $\frac{1}{8}$ in. thick is used on the less exposed portions, and

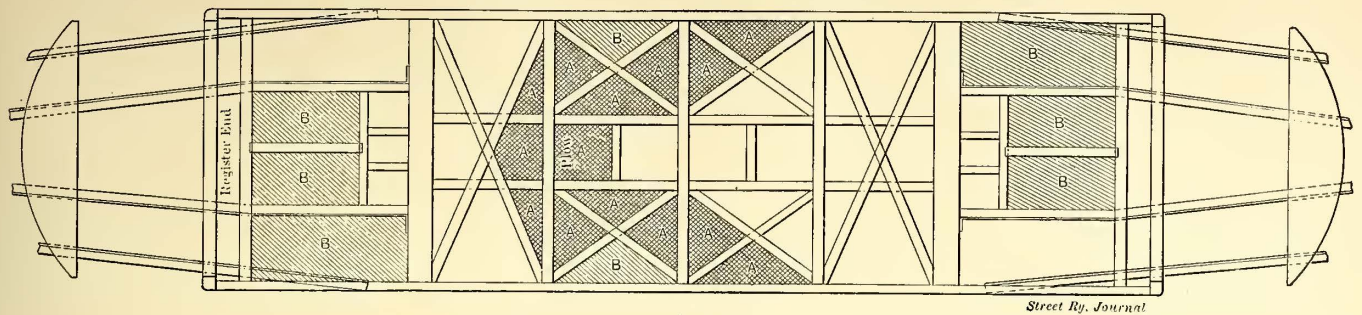


FIG. 1.—TIMBER PLAN OF WASHINGTON VESTIBULE CAR, SHOWING SPACES IN WHICH UNDERSIDE OF FLOOR IS PROTECTED WITH FIREPROOF MATERIAL

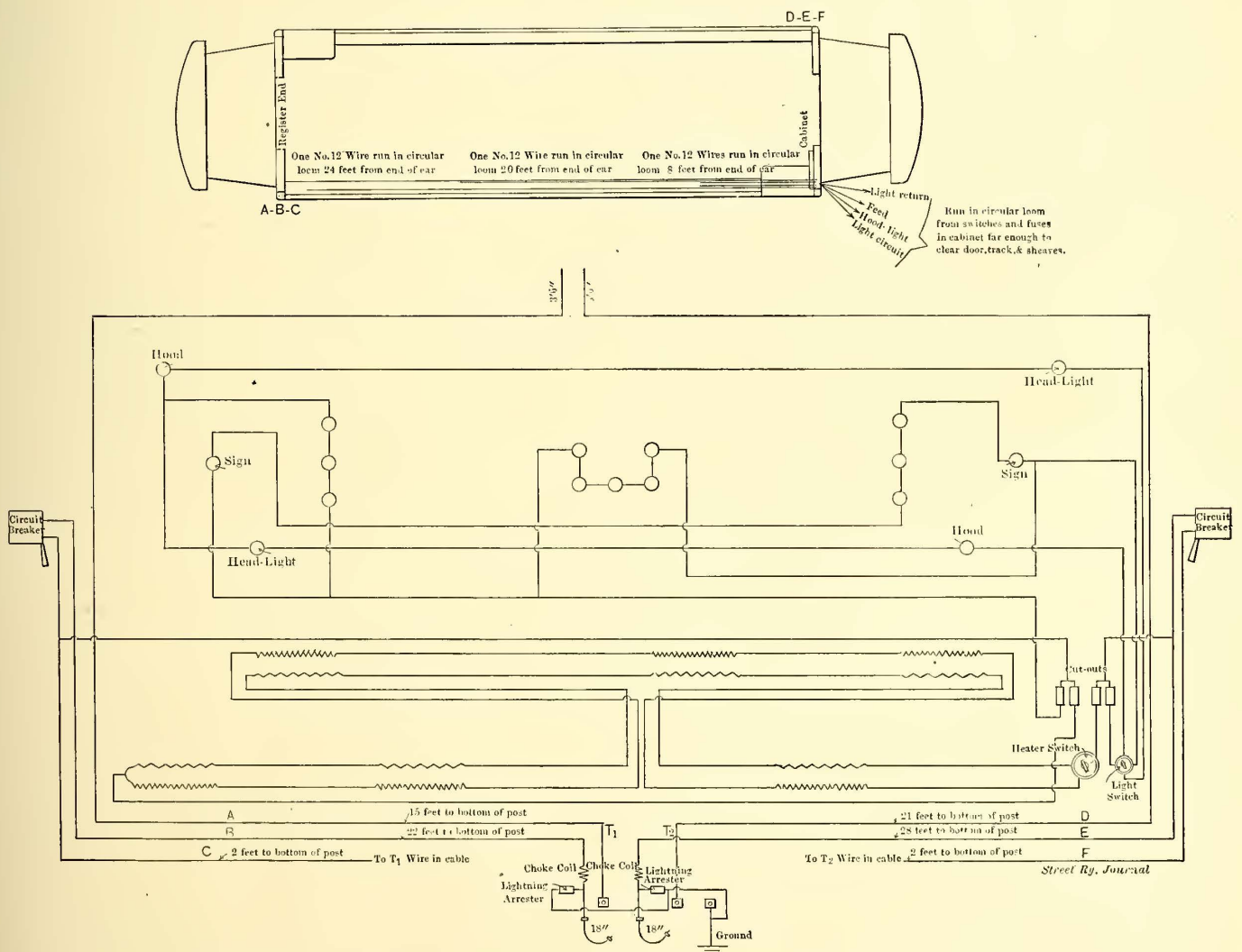


FIG. 2.—STANDARD WIRING DIAGRAM FOR TROLLEY, LIGHTS AND HEATERS, WASHINGTON CAR

tended to meet the underwriters' approval and to afford maximum protection against damage to cars and injury to passengers through failure or defect in any portion of the wiring, or from electrical causes in general.

For the purpose of explaining the scheme the protection as applied to a 25-ft. 6-in. vestibule car will be described.

material $\frac{1}{4}$ in. thick over the sections where the chance of trouble is greater, as over the rheostats and motors. (See Fig. 1.)

All the wiring on the car is treated as divided into three classes, i. e., wiring for power, wiring for heaters, and wiring for lights.

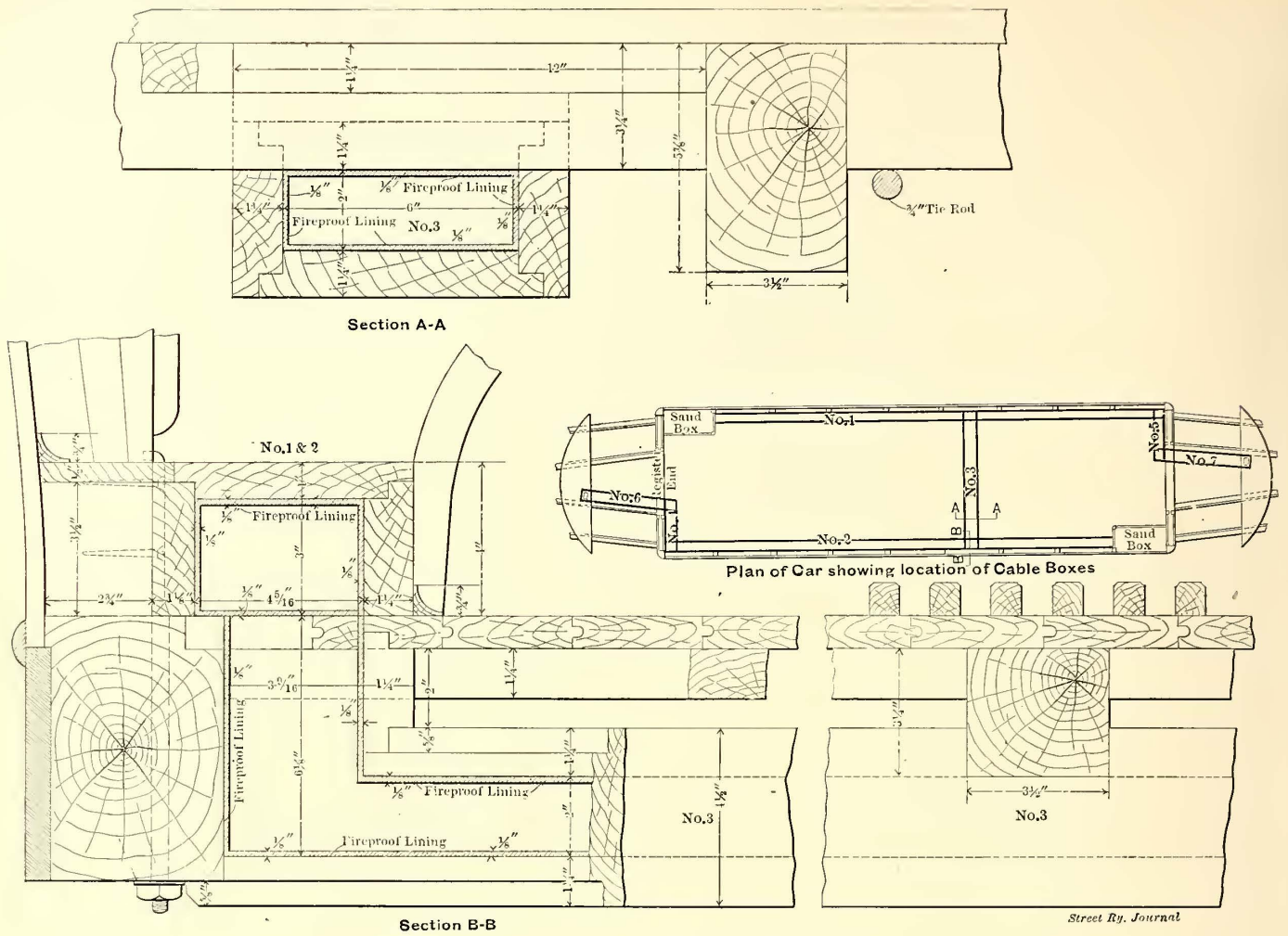


FIG. 3.—PLAN OF CAR AND DETAIL SECTIONS OF CABLE BOXES NOS. 1, 2 AND 3, WIRING SCHEME FOR WASHINGTON CAR

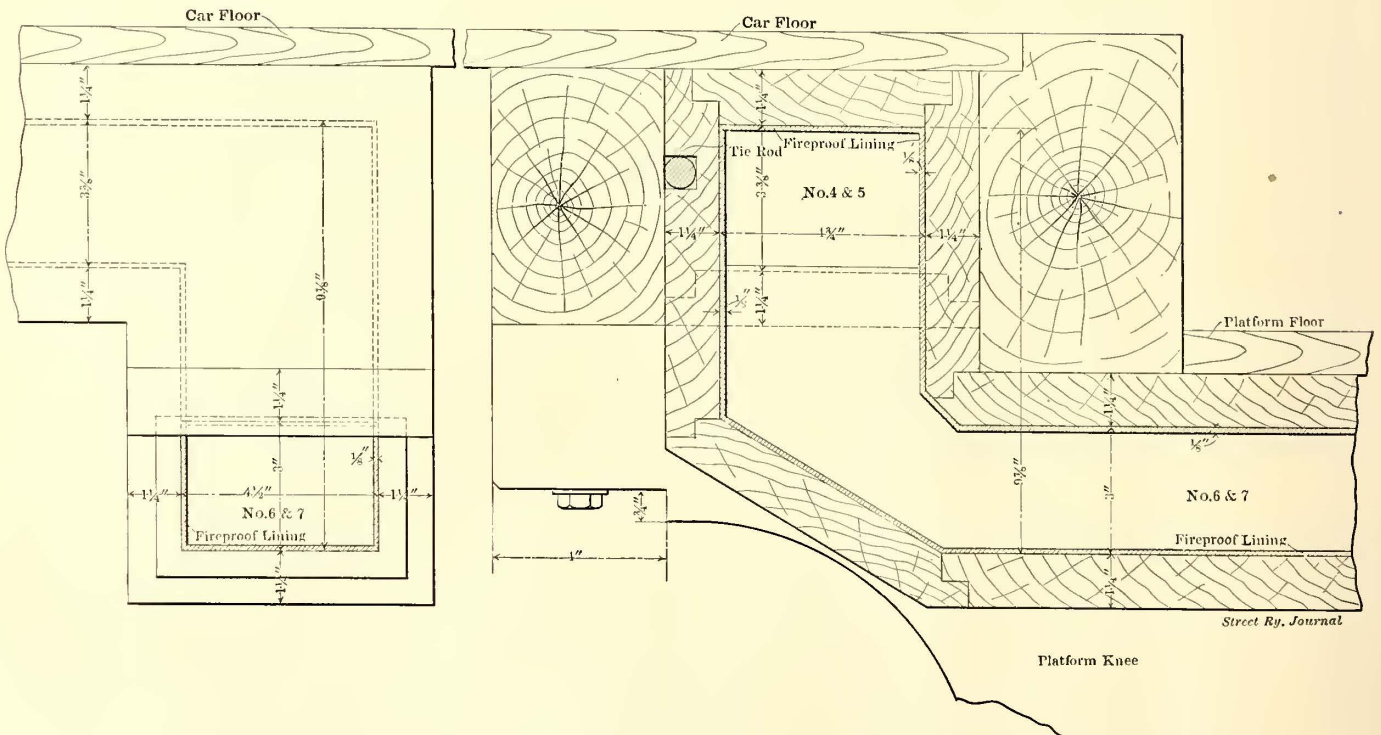


FIG. 4.—DETAIL SECTIONS OF CABLE BOXES NOS. 4, 5, 6 AND 7, WIRING SCHEME FOR WASHINGTON CAR

The power circuit includes cables from controller to controller, connections to reostats, connections to motors and mains to trolley and to plow.

The power cables are entirely enclosed from controller to

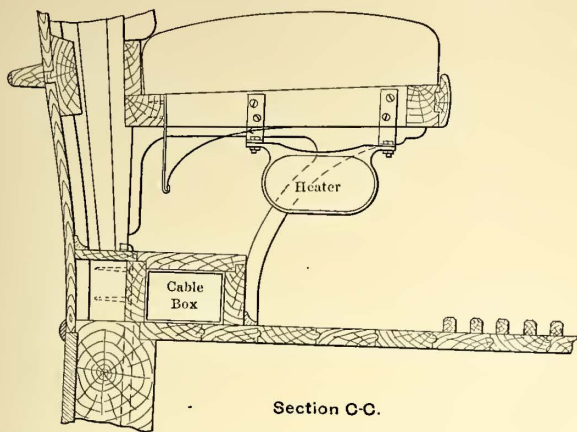


FIG. 6.—DETAIL OF SEAT, HEATER AND CABLE BOX, WASHINGTON CAR

controller in a wooden box with fireproof lining. The box runs under the platforms to the end sill, crosses behind the end to the side sill, enters the car, and runs the full length of the car under the seat. Near the center of the car the two longitudinal boxes are connected by a box running across the

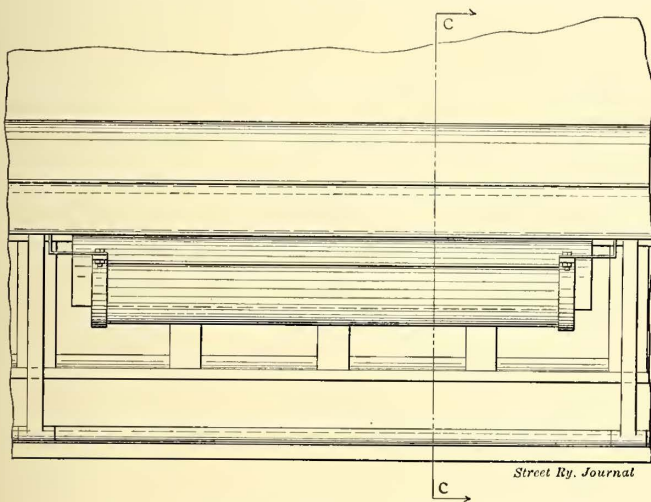


FIG. 7.—ELEVATION OF SEAT, SHOWING ARRANGEMENT OF HEATER, WASHINGTON CAR

car underneath. The cables cross through this box. They are thus well protected from fire, and from water and from mechanical injury, and are easily accessible. The connections to motors are covered with a flame-proof braid, and are enclosed in circular loom. This loom starts inside the cable

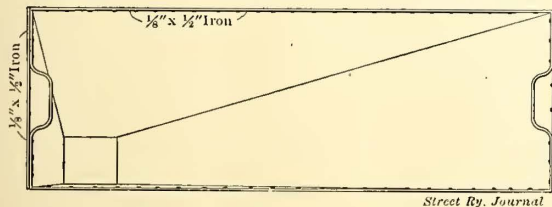


FIG. 10.—PLAN OF SAND-BOX, WASHINGTON CAR

box. For the motor connections there is provided a junction box (see Fig. 5), which consists of a wooden box lined with fireproof material. There are no exposed connections. Motors are drilled on the side nearest the center pin to reduce the "swing" to a minimum,

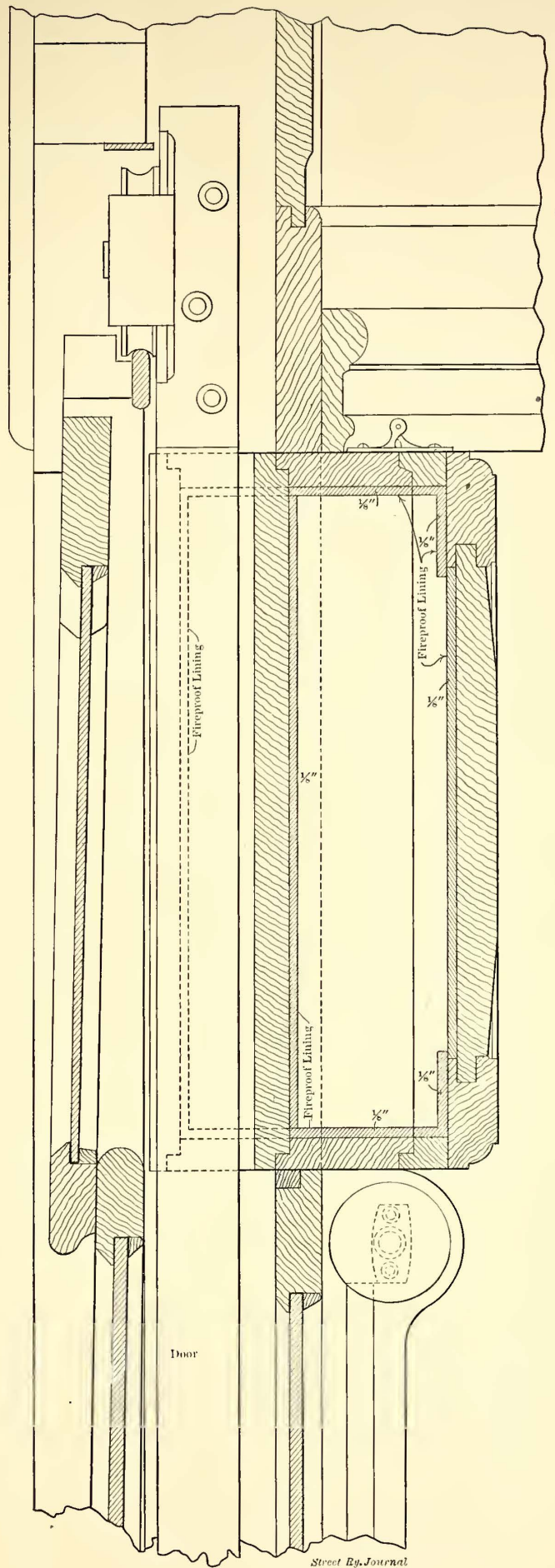


FIG. 9.—SECTION SHOWING LOCATION OF SWITCH CABINET, WIRING SCHEME FOR WASHINGTON CAR

The mains to the trolleys are brought down through the corner posts to the cable box. For metallic circuits, the cir-

braid. Plan of the car showing the arrangement of cable boxes is shown in Fig. 3, and sections of the boxes at different points are shown in Figs. 3 and 4.

The car seats are carried on malleable iron brackets and are open underneath. This eliminates the accumulation of dirt, which is unsanitary and is liable to cause fire.

The heaters are hung under the seats, which are protected by a curved sheet of tin with proper air space, which also promotes the circulation of heat. The heater wires are run in the cable boxes, and in circular loom, and the connections to the heaters are completely covered with circular loom. For short spans between the heaters, the wires are run in fireproof moulding. The arrangement of seats and heaters is indicated in Figs. 6 and 7.

In one corner of the car a switch cabinet is provided, containing the heater switch, the light switch (two circuits), and the positive and negative fuses for both the heaters and the lights. This cabinet is lined with fireproof material, and wired in circular loom, and the wires running up from this cabinet above the door sheaves are covered with circular loom, as are also the wires running down from the cabinet to the cable box. The switch cabinet is illustrated in Figs. 8 and 9.

The light and heat wires throughout the cars are flame-proof. For the lights wireless clusters are used.

For lining the cable boxes and for fireproofing in general, transite or asbestos building lumber is used. The reostats are supported on iron insulated from the floor by fireproof material. Rubber bushings are used where wires pass through floors, partitions and the sides of cable boxes. The trap doors are lined with transite board, bound at the edges with iron straps.

The ground wires are attached to the body center bearings and when necessary, the truck center bearings are grounded to the truck in a substantial manner.

The scheme of fire protection is extended to the sand box, which is of special shape to give room for the inside cable box. The sand box (see Fig. 10) is made of galvanized iron and around the top has a binding strap of iron which

at the ends is bent to form handles by which the box can be lifted out. The box and casing is painted with weather-proof paint. It will thus be seen the protection of cars against fires includes the covering of exposed parts of the under-framing with fireproof material, the housing of straight runs of cables in fireproof lined boxes and in circular loom at entering and leaving points, and the prevention of accumulations of dirt, dirt being considered one of the most frequent causes of fires on cars.

The Western Ohio Railway Company, of Lima, Ohio, in connection with the Dayton & Troy and the Toledo, Bowling Green & Southern, will place through cars in service between Dayton and Toledo on or about May 1.

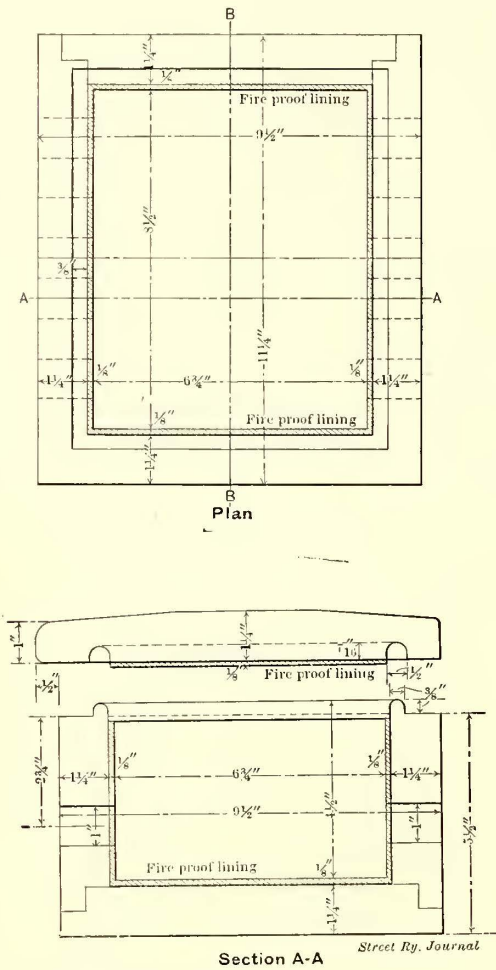


FIG. 5.—JUNCTION BOX FOR MOTOR LEADS, WASHINGTON CAR

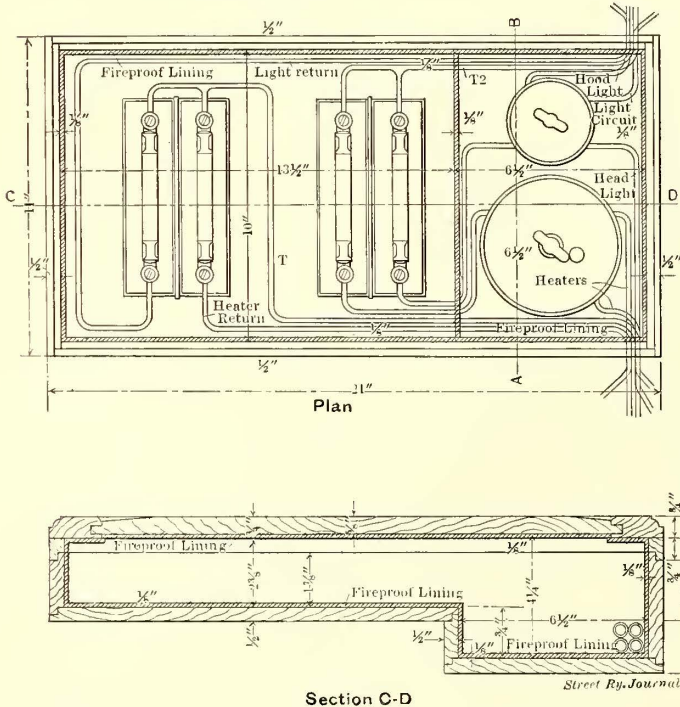


FIG. 8.—DETAILS OF SWITCH CABINET, WIRING SCHEME FOR WASHINGTON CAR

cuit breakers are placed on each side of the line. The mains to the plow are carried in circular loom to the cable box. All wires not in the fire-proof box are covered with flame-proof

THE ADVANTAGES OF THE INTER-POLE DESIGN IN RAILWAY MOTORS

BY G. HERBERT CONDUCT

The Electro-Dynamic Company, of Bayonne, N. J., has made such a great success of the inter-pole type of motor for stationary purposes, it has been decided to enter the electric railway field with a railway motor embodying the inter-pole features. A number of tests have recently been made by the company of motors designed for this work, and most encour-

5. As high voltages can be used, much lower cost of installation results, as less copper is used in the transmission circuits. This also allows of the use of a multiple-voltage system on electric railways. Low voltages can be used in towns and cities, and other places where low speed is desirable, and high voltages in suburban districts where high speeds are allowable. This advantage is secured with a single controlling equipment.

To illustrate in a graphical way some of the advantages secured from the use of the inter-pole railway motor, several

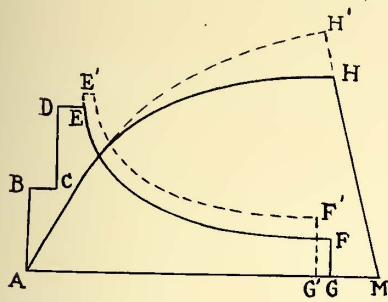


FIG. 1

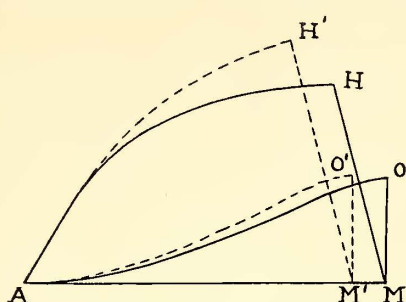


FIG. 2

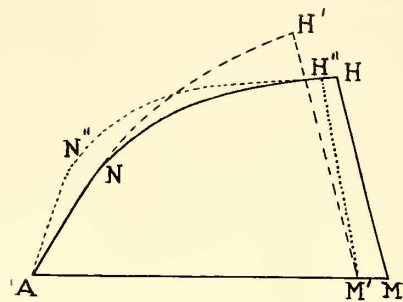


FIG. 3

aging results have been secured. It has been demonstrated beyond all question that the inter-pole type of railway motor is far in advance of anything that had heretofore been brought out in a direct-current practice. The motor excels particularly in the following features:

1. The motor is absolutely sparkless under all conditions of operation up to voltages as high as 2000. There is no doubt that the voltage can be raised to a much higher figure even than 2000 volts; the only limit is the question of insulation.

2. A much greater flexibility in speed regulation can be secured. This is owing to the fact that the motor will operate satisfactorily with its fields weakened to almost any extent. In the tests mentioned, motors of 40-hp capacity have

diagrams are presented herewith, and illustrate the following features:

Fig. 1 is a speed-time curve of the usual form, and shows that higher average speeds can be made without increasing the starting currents and breaking pressures. It will be noted in this curve that the full line, AH represents the speed secured from an ordinary railway equipment, while the line AH' shows the speed curves with the inter-pole motor. As will be seen, higher average speeds may be secured with the inter-pole motor with the same rates of acceleration and retardation, that is, a greater distance may be traveled in a given time.

Fig. 2 is a diagram which shows that, with a given acceleration and a fixed rate of braking, a given distance can be covered in a shorter time. The distance MO is covered in the

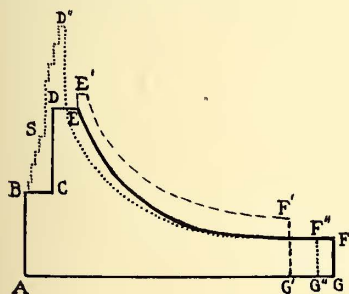


FIG. 4

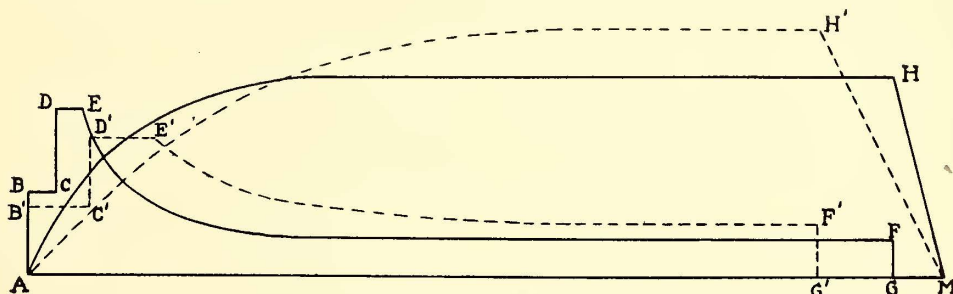


FIG. 5

been run with only 8 per cent of their normal fields at 200 per cent overload, with absolutely no sign of a spark.

3. In the inter-pole railway motor, a much greater torque per ampere can be obtained for a given amount of material, owing to the fact that more conductors may be placed upon the armature than in the ordinary type of railway motor for a given field strength.

4. For a given service, the inter-pole motor may be made much smaller than a motor of any other type, or conversely, a much larger output can be secured from a given size of motor. To cite a specific example, in the design of a 200-hp railway motor, for high-speed trunk line service with high voltages, it has been possible to increase the track clearances to about three times what they would be with an ordinary railway motor of equal capacity.

time AM by the ordinary equipment, and in the shorter time AM' by the inter-pole equipment. When it is desired to make up time with the ordinary equipments, it is necessary to increase the rate of acceleration and also the rate of retardation.

In Fig. 3 it will be noted that the inter-pole equipment, with the same rates of acceleration and retardation as in ordinary running, will make up time without causing discomfort to the passengers or subjecting the apparatus to the great strains due to increased acceleration and retardation which would occur in the operation of the ordinary equipment. In this figure AN'' H'' M' represents the make-up time conditions with this latter type of equipment, while A N H' M' represents the conditions with the inter-pole equipment.

Fig. 4 shows the power required to make up time in runs

where the accelerating and braking periods form the larger part of the running time. The extra power required is furnished at more efficient positions of control with the inter-pole type of equipment.

An interesting diagram is shown in Fig. 5, where it will be noted that the same schedule speeds may be made with smaller starting currents and lower brake pressures with the same amount of energy consumption. From this diagram, it will also be noted that the maximum load, as well as the variation of load on the power house, will be less for a given schedule speed if inter-pole equipments are used.

The advantages cited above are more apparent the longer the run. In a specific case for which calculations have been made for a double equipment of 40 hp, inter-pole motors on a 17-ton car, a saving of 25 per cent in energy was found to be possible in a one-mile run, retaining the same schedule made with ordinary motors. The possibility of operating the motors with weakened fields allows a saving in energy, from the fact that very much less resistance in the parallel positions will be used in getting the motors up to full parallel running position. This is an advantage which will show more particularly in short runs, or where the controller is thrown on and off frequently.

The Electro-Dynamic Company will soon give out for publication its designs of high-speed railway motors, fitted with inter-poles and especially designed for trunk-line service, as well as curves, data, figures and weights, all of which will prove of great interest, and will show what a revolution is being produced by the use of the inter-pole design in this class of railway service.

COMPARISON OF EARNINGS OF PROMINENT STEAM AND ELECTRIC RAILWAYS IN OHIO

An interesting comparison has just been made between the passenger earnings of steam and electric roads by a Cleveland financial expert. The figures taken were the passenger earnings of the Lake Shore & Michigan Southwestern Railroad, one of the most prosperous steam roads in the country, as compared with the Lake Shore Electric Railway, which closely parallels the steam road and which, while it is a comparatively old electric line, has not by any means reached a maximum earning capacity and is making tremendous gains. Of the \$38,000,000 gross earnings for the steam road last year, \$7,676,000 was derived from passenger earnings. The road operated 1520 miles of track, so that its passenger earnings were \$5,050 per mile of track. The Lake Shore Electric is operating about 170 miles of track, and its earnings this year will reach \$1,000,000. The earnings are practically all from passengers, or about \$5,500 per mile of track for the passenger service. The comparison, of course, is not exactly a fair one to the steam road, because, based on the earnings, a greater portion of the trackage should be charged to the freight department. But by making the necessary mental allowance, the parallel is a significant one.

To go farther into the comparison, the Lake Shore Electric, Cleveland & Southwestern and Cleveland, Painesville & Eastern roads, embracing about 340 miles of track, are all in the territory of the steam roads mentioned, and are earning in excess of \$5,000 per mile from passenger earnings, or almost equal to that of the steam road, with its high-speed trains and magnificent equipment. This suggests that, when the chain of trolley lines between Buffalo and Chicago is fully completed and the various lines become as well developed as the three roads mentioned, the aggregate of earnings will almost equal the passenger earnings of the Lake Shore & Mich-

igan Southern. With the building of numerous feeder lines to these more important interurban lines, they will within a few years exceed the parallel traffic of the steam road.

CORRESPONDENCE

OIL SEPARATORS IN THE LONG ISLAND CITY POWER STATION

Philadelphia, Pa., April 14, 1906.

EDITORS STREET RAILWAY JOURNAL:

Upon reading the article in your issue of April 7, descriptive of the Pennsylvania Railroad Company's Long Island City power station, we find a point to which we would take serious exception. We quote from the last few lines of the first column on page 541: "The Westinghouse single-acting engines driving auxiliary machinery do not send their exhaust steam to this heater on account of particles of crank case oil that may work into the exhaust."

While the engineers of this plant may not believe that the crank case oil can be removed from the exhaust steam by an oil separator, and while it may be true that many makes of oil separators are not efficient enough to remove this oil, it is a positive fact that the Cochrane oil separators, when installed to meet these conditions, will remove this oil. The exhaust steam from the Westinghouse single-acting engine in our own plant has for years been passed through a Cochrane oil separator into a Cochrane feed-water heater, from which our boilers are fed, and we have absolutely no trouble from oil in the boilers. We could give you the names of a number of other plants in which our Cochrane oil separators give thoroughly successful and satisfactory service in taking the oil out of exhaust steam from Westinghouse engines.

HARRISON SAFETY BOILER WORKS,

R. H. Ramsey.

ASH-DUMPING DEVICE FOR HOT-WATER HEATERS

Springfield, Ohio, April 10, 1906.

EDITORS STREET RAILWAY JOURNAL:

The writer has noted upon many occasion the utter disregard for cleanliness during the cleaning of ash pans of car heaters. In a great many instances no pan is used, and when the ash pit is full to overflowing, the ashes are carried to the door on a small-sized street car shovel, and then thrown away. This plan not only produces a great deal of dust, but also leaves a trail of clinkers upon the floor of the car.

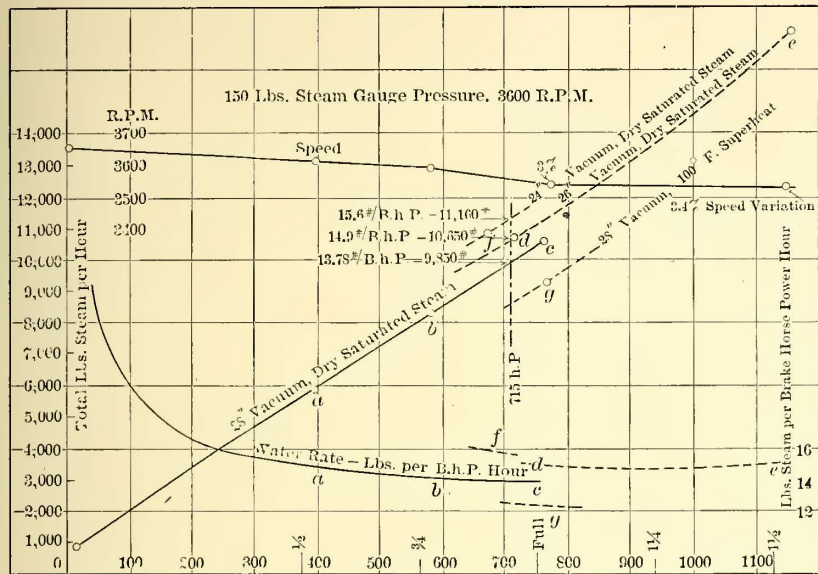
Instead of providing an ash pan beneath the grate, the bottom of the ash pit or box should be fitted with a door or grate, sliding forward. This grate, when open, should communicate with a hopper, which in turn could protrude through the car floor. This would allow the ashes to fall through to the ground beneath whenever the hopper was to be dumped. The whole outfit, as described, could be constructed from thin steel plate. Such a proposition is well worth consideration of every operator, for time and again the writer has been incommoded by the crude method of dumping ashes just described.

C. B. Ross.

The Toledo, Fostoria & Findlay Railway Company has contracted for an automobile bus with a capacity of 12 passengers, which will operate between Prairie Depot and Billmans, a distance of two miles, giving the first mentioned town connection with all cars.

EFFICIENCY TESTS OF A 500-KW. TURBINE

Ludwig & Co., consulting and supervising engineers, of Atlanta, Ga., recently conducted an efficiency test on a 500-kw Westinghouse-Parsons turbine for mill work in Atlanta. The turbine was designed to develop normally 750 B. H. P., with a steam pressure of 175 lbs. at the turbine throttle, 150 degs. F. superheat, 28 ins. vacuum absolute, i. e. (reduced to 30-in. barometer) and when running at a speed of 3600 r. p. m. The tests were made to determine the fulfillment of the build-



PERFORMANCE CURVES OF A 500-KW TURBINE

er's guarantees and the general running qualities of the turbine under ultimate conditions of service.

Although the turbine will eventually drive a 500-kw polyphase generator of the revolving-field type, it was particularly desired to obtain results at the turbine shaft. Consequently, brake tests were performed, separate electrical tests being made upon the generators in the shops of the builders. The turbine was subjected to different loads by means of a water absorption brake, operating upon the same principal as the Prony brake. The results were computed in like manner.

The main results are presented in the accompanying diagram.

ADVANTAGES OF T-RAIL IN CITY STREETS

The development of interurban roads has called renewed attention to the desirability of the use of T-rails in paved streets. In response to a recent request for information, B. V. Swenson, secretary of the American Street & Interurban Railway Association, prepared a short report on this subject. Some of the reasons why T-rails are superior to girder rails in paved street are given in the report as follows: (1) The paving can be maintained in far better condition with T-rail than with girder rail. (2) The wear on the paving is reduced, owing to the fact that the vehicular traffic will distribute itself over a larger surface of the street instead of attempting to make use of the area adjoining the electric railway tracks. (3) As vehicles will not make so general use of tracks laid with T-rail, the number of accidents due to collision of cars and other vehicles is materially reduced. (4) With T-rails there will be a material reduction of broken wheels and axles on wagons and other vehicles, due to the wrenching of wheels by reason of the groove in grooved girder rails. (5) T-rails have all the advantages of grooved

rails, with none of their disadvantages. (6) The T sections give a stronger structure with less metal than the girder sections. This is an important feature in eliminating, in so far as possible, a foreign element in the make-up or construction of the pavement. (7) The joint troubles are materially reduced by reason of the physical construction and form of T-rail as compared with girder rails. Hence T-rail gives an easier riding track and insures greater comfort to the passengers than when the cars are run upon girder rails. (8) Actual experiments have demonstrated that cars passing over T-rails do not make nearly as much noise as when passing over girder rails, and T-rail construction will, therefore, reduce the noise incident to electric railway operation. (9) The T-rail entirely eliminates the delays and annoyances caused by snow, ice and dirt filling the grooves of girder rails. T-rail construction will, therefore, facilitate car movements and permit a more regular service. (10) It is the recognized law of economics that that which accomplishes the same result for less capital, outlay or investment reacts to the general good, weal and welfare of the people or public as a whole.

After stating that these arguments had been suggested by W. E. Harrington, of J. G. White & Company, the report refers to the benefits to villages and cities afforded by modern electric interurban railways, and the necessity of providing a rail on which they can enter the terminal cities. In the present stage of the art, nothing will accommodate satisfactorily the wide tread and deeper flange of wheel required by these cars except a T-rail section. A refusal to permit T-rail to be laid in city streets, therefore, will act as a direct obstacle to electric railway development and consequently as a serious check to the progress and welfare of the community. Examples of communities, among many in which T-rail has been laid, and is now in use with the entire sanction and approval and to the satisfaction of municipal authorities, the public and the railway companies, are the following: Milwaukee, Minneapolis, Denver, Indianapolis, Cincinnati, Dubuque, Ia., Battle Creek, Kalamazoo, New Haven and Montreal, Can. As indicating the general trend of opinion in this direction, it may be stated that a considerable stretch of T-rail for electric railway operation is now being laid on Boylston Street in Boston.

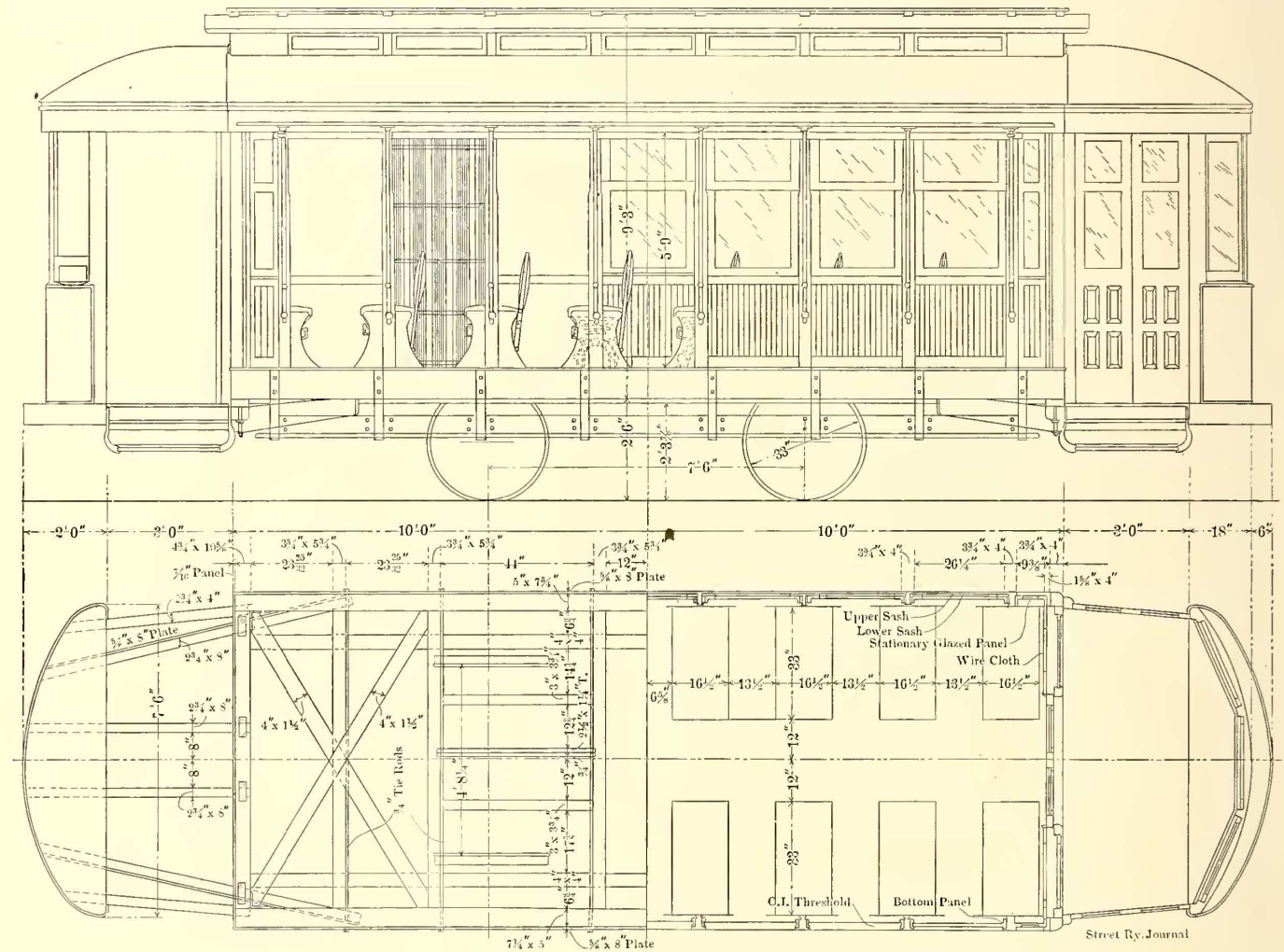
The Indiana lines operated by C. C. Reynolds, of Indianapolis, which include the Indianapolis & Northwestern, the Indianapolis & Eastern, the Richmond Street & Interurban and the Indianapolis & Martinsville, will be actively represented in the baseball field this season. W. R. McKowan, heretofore general passenger agent of the Indianapolis & Eastern, who in the past has given considerable attention to the baseball business on his line, will devote his time almost exclusively to the business of the Indiana Interurban League, which will be the title of the association. The cities of Richmond, Greenfield, Lebanon, Frankfort, Martinsville, Lafayette and Crawfordsville will be represented by teams, and in the majority of these places the games will be played in parks operated by the traction companies. The companies will help to maintain the teams, will offer prizes to the winning organizations and provide transportation. Mr. McKowan will be in charge of schedules and arrangements and will act as referee in matters of dispute. He is an ex-professional ball player and has had long experience in baseball management.

A NEW LINE OF CONVERTIBLE AND SEMI-CONVERTIBLE CARS

The new full and semi-convertible cars now being built by the St. Louis Car Company embody several interesting features. Both designs are radical departures from others that have been employed. As they involve the same principles, the description of the full-convertible type, with a few changes, will apply equally well to the semi-convertible car. The sides of the car are constructed of posts, $3\frac{3}{4}$ ins. thick, and are grooved to receive three movable sections that close the opening between the posts. The sections consist of the top and bottom sash and a lower section of wood, which closes the space

are carried into the pocket previously referred to, and an angle iron rest or seat fastened to the inside of the letter board holds them in place. When the car is converted from an open to a closed one it is necessary simply to grasp the handle on the lower section and pull forward until the sections are free from the angle iron support, and then one after another they fall into their proper places. About 10 minutes is required by the motorman and conductor to open up a car with a 20-ft. body, and the car can be closed in a much shorter time.

Sticking of the sash when the posts are slightly out of true is avoided, as has been said, by making each section narrower than the one above it. The two lower sections are in contact



SIDE ELEVATION AND PLAN OF CONVERTIBLE CAR, ALSO SHOWING FLOOR AND PLATFORM FRAMING

below the lower sash. When the car is converted to an open one, the three sections between each set of posts are pushed upwards and rest in a pocket between the lower deck roof and the lower deck headlining. The car has been designed to eliminate the usual objection to convertible cars, the sticking of the sash when the posts become slightly out of square, and this is accomplished by making each section slightly narrower than the one above it and arranging each of the two lower ones to slide into guides or channels attached to the section above. On either side of the lower sash, at a distance of $\frac{3}{8}$ in. from the edge, a brass channel is screwed, extending the full height of the sash. When the lower section is raised, by means of handles screwed to it, it slides up into these guides until it strikes the closed ends of the channels at the top. A further effort to raise the lower panel carries the lower sash with it, and into similar channels screwed to the top sash, and when the lower section is raised still higher all three sections

with the posts only when in their lowered positions, for when they are raised they withdraw from the posts to slide into the channels attached to the section above. The top section is so short that the posts would have to be out of square an unusual amount before it would bind. The sash can be raised independent of each other, and this permits the car to be arranged as a semi-convertible one, by allowing the lower section to remain in position and raising only the two upper sash. If desired, the upper one alone can be raised for ventilation. The lower sash can, of course, be raised as in the ordinary type of closed car. When the three sections are all in their lowered positions they fit snugly into place, and all rattling is avoided. They are also arranged to overlap an amount equal to the width of the sash rail and are fitted into the pockets in such a manner that they press against each other, making all the joints practically airtight.

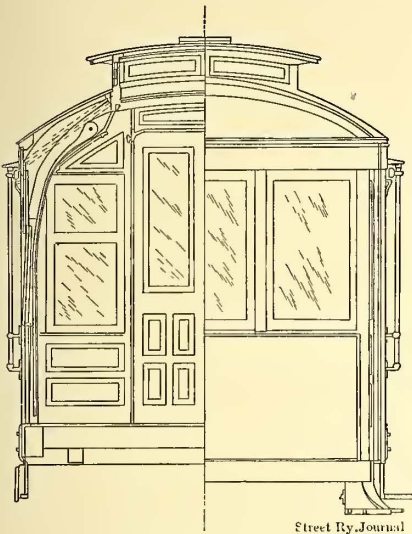
The curtain is placed in the upper portion of the pocket

above the headlining, and grooves permit it to be pulled down to the floor. The pocket is provided with a hinged door, just under the deck sill, to give access to the curtain. The convertible type of car is provided with grab handles on the posts, arm rails and running boards, and cast-iron panels at the base of the posts.

The semi-convertible type differs from that of the convertible car in that the two sash only are designed to raise. Guides are placed only on the upper sash. The pockets into which the sash are raised are practically the same as in the open car. The running boards and the grab handles on the posts are, of course, absent. The semi-convertible cars now being completed have side sills consisting of a 3/8-in. x 15-in.

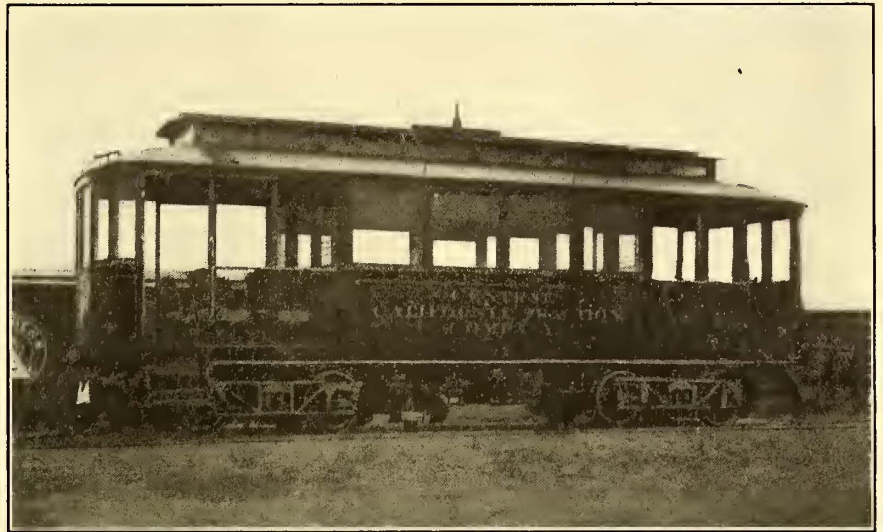
• NEW CARS FOR STOCKTON, CAL.

Stockton, Cal., is a city of 20,000 inhabitants, situated in central California, and is served with a very efficient street car service by the Stockton Electric Railway and the Central California Traction Company. The latter company has lately increased its equipment by an additional five cars, built by the John Hammond & Company car works, of San Francisco, Cal. These cars, as may be seen in the accompanying illustration, are of the California double-end type, which has become the style of car almost universally used on the Pacific Coast, where climatic conditions and its general popularity have made this type of



Street Ry. Journal

END ELEVATION OF CONVERTIBLE CAR



ONE OF THE NEW DOUBLE-TRUCK CARS FOR THE CENTRAL CALIFORNIA TRACTION COMPANY

steel plate sandwiched between wooden members. The plate extends above the floor of the car and serves to secure in place the side posts, which are screwed to it, as well as to brace the car and eliminate the necessity of an inside truss.

FLEET OF STEAMERS BUILT BY THE TWIN CITY RAPID TRANSIT COMPANY TO HANDLE EXCURSION TRAFFIC ON LAKE MINNETONKA

The Twin City Rapid Transit has just built a fleet of nine steamers for use on Lake Minnetonka in connection with its two new electric lines to that resort. There are three double-end, double-deck ferries, each 100 ft. long, and with a capacity of 1000 passengers, to ply between the company's terminal at Excelsior and Big Island Park, the Twin City's new amusement resort in midlake, and six empress steamers, each 70 ft. long, and having a capacity of 150 passengers and a speed of 15 m. p. h. These will trail the lake's shores and pick up cottagers for the electric lines. The Twin City has also purchased three other fast excursion steamers, so that the fleet of 12 steamers has a total carrying capacity of nearly 5000 persons. Three lines of sightseeing cars will be put in service shortly by the Twin City Company, ranging in time from 3 hours to 5 hours each, and in cost from 50 cents to one dollar. "The Twin City Sightseer" will include St. Paul and Minneapolis, "The Wildwood Sightseer" both cities and Wildwood, on White Bear Lake, and "The Minnetonka Sightseer" both cities and Lake Minnetonka, a tour of which, on a special boat, will be included.

semi-closed car practically a necessity. It has a length over all of 32 ft, with a width of 8 ft. 3 ins. on bodies. The closed compartment in the center is 14 ft. 1 in. long, and fitted with upholstered seats running longitudinally, while the open sections at each end have a length of 8 ft. 3 ins. each. Standard walk-over seats are used in these outside compartments, which have a seating capacity of 16 persons. The interior finish is in cherry with nickel trimmings. The eight windows, four to each side, drop into sockets covered with flats, and plate glass is used exclusively for lighting, except for the sky lights, which are of plain glass. The sides of the car are straight and covered with sheet steel, as are also the ends. The exterior is painted with Sherwin-Williams mohawk red, with letters and striping in gold, presenting a particularly pleasing appearance.

The cars are mounted on standard gage double trucks, also designed and manufactured by this company, and have a wheel base of 5 ft. 3 ins., 4 1/2-in. axles, with wheels 30 ins. in diameter and 3 1/2-in. tread. The frame is made entirely of steel, with inside-hung type 92A Westinghouse motors of 35-hp capacity. All the cars were delivered in Stockton completely equipped and ready for operation.

The Lake Shore Electric Railway has announced that, beginning May 1, it will increase the number of Cleveland-Toledo limited trains from three to five each way daily, and that it will begin the operation of two-car and three-car trains on these runs. The new cars, which will be delivered about that time, will be among the finest interurban cars in service. The line between Cleveland and Lorain is now being double tracked, and it is announced that the double-tracking will be eventually extended to include the entire main line.

AN AIR PURIFIER

A troublesome feature in the operation of air brakes, and, in fact, all pneumatic devices, is the presence of dirt and moisture in the air. Dirt proves most troublesome around triple valves on automatic air brake systems, where it may prevent the operation of the brakes. Moisture is a common cause of trouble during freezing weather around valves and moving parts in all kinds of compressed air apparatus. Large drums are sometimes used in the pipe lines, so that the moisture and dust will have time to settle. Drums for this purpose are valuable only when the velocity of the air through them is very low. Screens in the pipes strain the air and catch all the particles that cannot get through the mesh of the screen, in time clogging up the screen, yet letting small particles through.

A device which has been remarkably successful in keeping dirt out of triple valves on automatic air brake equipments on steam railways has recently been specified for use in connection

with the electro-pneumatic multiple-unit control system on the new cars now being built for the Metropolitan West Side Elevated Railway, Chicago. A sectional drawing of this device is shown herewith. It consists of two chambers, an upper or separating chamber, and a lower or settling chamber. The air inlet which is at the top of the separating chamber is so designed that the entering air takes up a whirling motion around the walls of the chamber. The solid matter, such as dirt and moisture, is then thrown by centrifugal force against the outer walls of the chamber, while purified air passes up through the opening in the center. The impurities fall into the settling chamber below. The outlet for the air is in the axis of the vortex of air in the chamber, consequently nothing but pure air is

OUTLINE AND TOP PLAN OF AIR PURIFIER

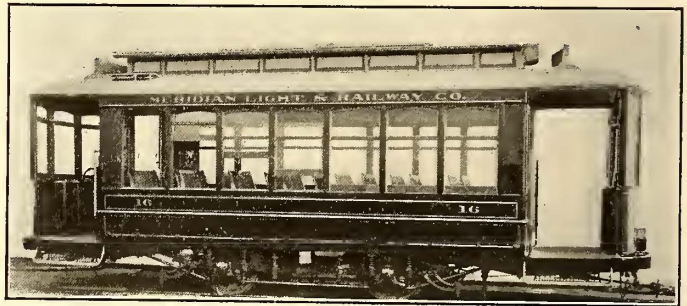
drawn into the outlet. The principle is one which has been employed successfully for many years in dust and shavings collectors in planing mills. To prevent the impurities in the lower chamber being drawn up by the vortex after they have settled, the pedestal or cap shown in the drawing is used. The accumulation of dirt in the collecting chamber is removed without difficulty by unscrewing the plug at the bottom. Where there is much moisture a pet cock can be placed at this point.

An efficiency of 100 per cent is claimed for the device, based on tests in which a known weight of water and dust was introduced in the supply pipe and the amount accumulated in the collecting chamber weighed after passing through the separator. This test shows that practically all the foreign matter is removed from the air. The device should preferably be inserted in piping systems as near to the apparatus to be protected as possible. On automatic air-brake systems it is located at the inlet to the triple valve. Previous devices to free the air of impurities have employed screens or packing, which partially obstruct the passage, and as dirt and moisture accumulate, the passage is obstructed still more, until finally the supply may be completely shut off. The device

under description depends upon centrifugal force for its action, and does not in any way obstruct the passage. The accumulation of dirt and moisture in the triple valve of automatic air-brake systems requires them to be cleaned on passenger cars every three months on some roads, and at least every six months, to comply with M. C. B. requirements. Double that period is allowed on freight equipments. The length of time that a triple valve will operate is dependent upon the accumulated dirt. By keeping out the dirt, the length of time it will operate without attention will depend upon the lubrication, and the fitting of the parts. This collector is being put on the market by the Derby Manufacturing Company, of Burlington, Iowa.

SEMI-CONVERTIBLE CARS FOR MERIDIAN, MISS.

The Meridian Railway & Light Company has recently added new equipment to its road to the extent of five new cars, embodying the Brill grooveless post semi-convertible feature, the order being entrusted to the American Car Company, of St. Louis. The cars are 18-ft. long over the bodies. This length, which is considerably shorter than present practice, was adopted because of unusually heavy grades, one of which is 7 per cent for quite a distance. Although last year the city of Meridian was visited by the yellow fever, and the quarantine necessary effected its commercial interests severely, the city is in a flourishing condition, its outlook for the future is bright and the conditions sufficiently favorable to



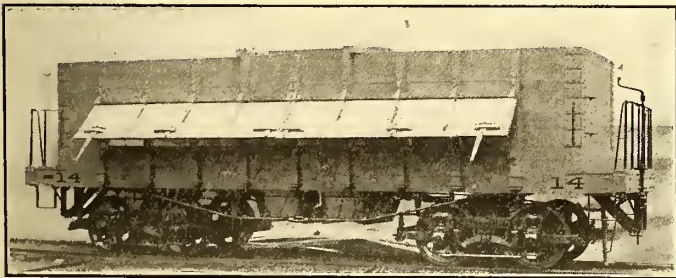
SINGLE-TRUCK, SEMI-CONVERTIBLE CAR FOR THE MERIDIAN LIGHT & RAILWAY COMPANY

warrant the increase in the number of cars. The catastrophe of a few weeks ago, in the form of a tornado, which devastated the central portion of the city, but which happily resulted in little loss to the railway company, proved another temporary stumbling block in the city's progress. Another reason to that already given regarding the short length of the new cars, is that at present it is deemed wise not to make too heavy a demand upon the power equipment, but to increase the frequency of cars at the least possible outlay. The type of car which the company has successfully used for the past two years, besides its suitability to traffic and climatic conditions, was also chosen on account of its serviceableness during the entire year. Full convertible cars, also of the grooveless post system, constitute part of the equipment, and were furnished by the American Car Company. The company furnishes its own light and power, and also owns North Park, and this summer will see some of the new cars used on the tracks leading to this popular place of amusement. This branch of the system has been rapidly built up and fine residences now line the road. There are three other branches, one of which runs from the center of the town to the railway shop district, where will be found the homes of the hands employed there. Meridian is a railroad center of considerable importance, besides being the leading city of the State in the value of manufactured products.

The general dimensions of the new cars are as follows: Length over the end panels, 18 ft. 10 ins.; length over the dashers, 27 ft. 10 ins.; width over the sills, 7 ft. 9½ ins.; width over the posts at the belt, 8 ft. 2 ins.; sweep of the posts, 2¾ ins.; distance between the centers of the posts, 2 ft. 5 ins.; height from the floor to the ceiling, 8 ft. 4½ ins.; height from the track to the under side of the sill, 2 ft. 6⅞ ins.; height from the under side of the sills over the trolley board, 9 ft. 1½ ins.; height from the track to the platform step, 15 ft. 7-16 ins.; height of the risers, 12 ins.; size of the side sills, 5 ins. x 3⅜ ins.; size of the center crossings, 3¼ ins. x 4¾ ins.; size of the end sills, 3½ ins. x 7⅝ ins.; thickness of the corner posts, 3¾ ins.; thickness of the side posts, 3¾ ins.; width of the aisle, 24 ins. The cars are finished in cherry and have decorated birch ceilings, and slat seats of cherry with spindle backs. Portable vestibules are used, which are well adapted to the climate of this section of the country, as they form a sufficient protection to the motorman and to passengers, add little to the weight of the car, may be readily removed during the summer, and take up little storage room. Folding gates of the builder's type are used at the platform entrances. The cars are mounted on the 2I-E truck, having a wheel base of 7 ft. 6 ins., with 33-in. wheels. There are two 40-hp motors per car.

NOVEL TYPE OF COAL CAR FOR THE CONEY ISLAND & BROOKLYN RAILROAD

The interesting type of hopper-bottom coal car, shown in the illustration, was designed and built by the J. G. Brill Company, and lately shipped to the Coney Island & Brooklyn Railroad Company. As will be seen, it is arranged to empty the coal either into a pit or deliver it through the side doors alongside the track. The sills for the side doors are not low enough to enable all the coal to be delivered through the sides, but the arrangement greatly facilitates rapid handling, as most of the coal may be discharged in this way, and what remains can be quickly shovelled out through the same openings, thus obviating the necessity for the longer operation of



COAL CAR FOR THE CONEY ISLAND & BROOKLYN RAILROAD

throwing the coal over the high sides. The side doors are in pairs, and each door is opened by a lever, which releases three strong catches at the same time. The hoppers at the bottom are opened or closed by ratchet mechanism of the usual type. The trolley boards are placed on cross members resting directly on the high sides. The capacity of the car is twenty tons.

The sides of the car are braced with 4-in. x 4½-in. posts set in metal sockets, and the corners are clamped with forged brackets. The side sills are 5 ins. x 10 ins. thick, and the stringers 4¾ ins. x 10 ins., with end sills also 10 ins. thick. A pair of angle irons at each end of the car are bent in triangular form, and carry the pull irons to which the draw bars are attached. The bottom of the car is inclined at the ends and sides and covered with 3-16-in. sheet iron. The length of

the car over the corner posts is 25 ft., and over the crown pieces 29 ft. 4 ins. The width over the side doors is 8 ft. 11 ins.; the height from the track to the under side of the sills, 3 ft. 2⅝ ins., and from the under side of the sills over the top of the sides, 5 ft. 11¾ ins. The distance between the centers of the side posts is 2 ft. 6 ins. The car is mounted on 27-G trucks, which have a wheel base of 4 ft. and 33-in. wheels. The weight of the car body and trucks is 29,800 lbs.

THE LEAP-FROG MERRY-GO-ROUND

The leap-frog merry-go-round is the name of a novel and amusing variation of the merry-go-round which has retained its popularity for so long a period. The device is now being built for summer parks by the American Novel Machine Company, of Boston, Mass. The plan of construction admits of one motor revolving the whole machine as a merry-go-round if desired, with the frogs in a horizontal line, or in the same



THE LEAP-FROG MERRY-GO-ROUND

relative position to each other at any other angle outside a horizontal plane. While thus revolving the "leaps" may be thrown in and out at will. Thus, it will be appreciated that the company is really producing two money-making machines in one, without increasing the cost price or operating expenses over an ordinary merry-go-round.

The center pole is 25 ft. high, made of extra heavy iron pipe, 12 ins. in diameter, from the top of which the entire weight of the machine is suspended. All the arms, yokes and supports are of iron or steel. The gears and operating parts are of cast steel, except the frogs or coaches, so that a machine of great durability is secured.

The machine is 45 ft. in diameter from outside to outside of the frogs. These are regular carrousel coaches seating four people each, carved and decorated in imitation and color of a genuine frog. There are six revolving shafts, each terminating in a yoke from which are suspended two frogs, or twelve in all, giving a seating capacity of forty-eight people. The main framework revolves twice each minute, while the frog arms make 6 r. p. m., that is, the frogs leap six times to every two revolutions of the main framework. The revolving arms which leap the frogs are about 16 ft. above the ground. The length of the yoke from which the frogs are suspended is 10 ft. In its lowest position, a frog is within 1 ft. of the ground. When a frog is at the highest point in the leap, the bottom of the car is about 12 ft. from the ground, that is, the rise and fall of the frogs is between 11 ft. and 12 ft. All exposed parts are decorated with two or three coats of paint and varnished in regular up-to-date carrousel colors.

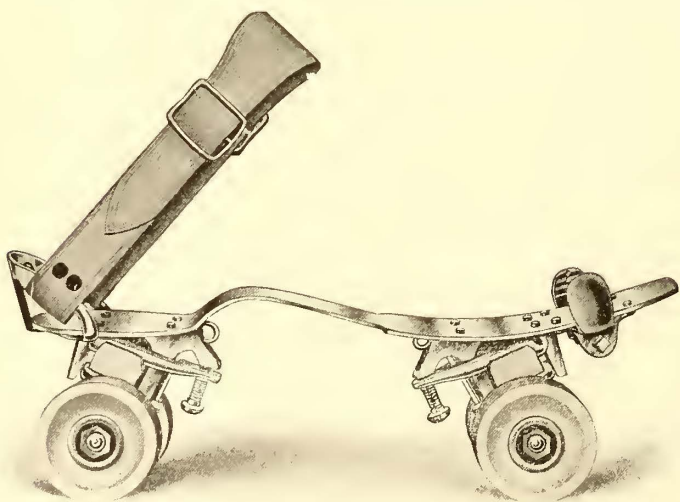
As the frogs load from the ground, or a low platform on the outside, the land space selected should not be less than

60 ft. x 60 ft. The motive power furnished with the machine is of 25 hp, electric or gasoline, at purchaser's option. It is not absolutely necessary to house in the machine, although most amusement venders believe that it pays to do so in order to protect their patrons and maintain business during wet or rainy weather. Competent amusement men have decided that this is a ten-cent proposition, with children under twelve at half fare. If the machine is run as a five-cent ride, the revenue per trip (when loaded to capacity) is \$2.40. Allowing one minute to load, three minutes to ride, and one minute to unload, which is the usual rule, twelve trips per hour would give \$28.80. The running expenses, including ground-rent, power, lights, and attendants, cannot exceed \$25 per day, and under favorable conditions will not reach \$20. Thus it will be seen that if the machine runs to capacity for only one hour per day during the entire season, it would prove a paying proposition.

The foregoing figures are mentioned merely as an illustration of its minimum capabilities, and not to convey an impression of what the real net earnings for the season would amount to. The total weight of the machine will come within seventeen tons, and it can be loaded into an ordinary furniture car for transportation.

IMPROVED ROLLER SKATE

M. C. Henley, of Richmond, Ind., whose roller skates have been on the market for twenty-seven years, reports that the great revival in this business has again compelled him to relinquish all other lines for the production of roller skates only. This factory has a capacity of 2000 pairs per day. The accompanying illustration of the improved Henley ball bearing rink skate shows that its manufacturer has kept pace with the times, bringing out an up-to-date, practical constructions in keeping with modern rink requirements. One of the principal points of superiority claimed is its light weight. This is made possible by the use of a fine quality steel in the foot-plate (shaped to conform to the foot), hardened and drawn to



ROLLER SKATE FOR RINK SERVICE

a spring temper, possessing great strength, but which springs sufficiently with the weight of the skate to make it much more desirable than a straight rigid plate. This spring-steel foot-plate is said to be much less liable to break or bend.

Rubber cushions are used in connection with pressure plates, and all the latest models, as in the one illustrated, embrace this construction to give them the requisite tilting or lateral motion so essential to easy and graceful skating. The largest skate of this type will easily turn a 2-ft. circle, all

of the wheels resting squarely on the floor at the time.

Attention is called to the special and simple construction of this skate, by which the trucks and frame can be instantly separated by drawing back the coupling pin, which is held in position by a wire spring. The tension can be instantly adjusted to suit the skater, thus adapting it for all kinds of skating.

These skates are furnished with different kinds of ball-bearing wheels. The manufacturer claims superiority for his new steel band combination wheels over all other metal wheels. They are constructed on the same principles as the wheels filled with paper used for Pullman palace cars. The steel bands are said to be as thick as any, and thicker than most wheels of all metal combination. The bands are filled with a regular box-wood wheel, forced and clinched on same under heavy pressure, making the wheel one solid body, the wood forming a complete support for the steel band, even when worn down to thickness of paper. In fact, when the band is completely worn off, it still leaves a perfect box-wood wheel which can be used as any new wheel, or recovered with a new steel band at small cost.

Among the prominent places now using these skates may be named: Wayne Rink, Detroit; Louisville, Ky.; Lynchburg and Petersburg, Va.; Milwaukee, Wis.; Memphis, Tenn.; Johnstown, Pa.; San Francisco, Cal.; Hamilton, Newark, Uhrichville, Toledo, Massillon and Youngstown, Ohio; besides many hundred of rinks in other parts of the country. These skates are especially adapted for summer park rinks, and large quantities have been sold for his purpose.

A NEW LINE OF GEARED FARE REGISTERS IN FOUR STYLES

The new fare registers brought out last fall by the Sterling-Meaker Company, of Newark, N. J., are of sufficient originality and mechanical excellence to invite attention. These registers naturally refer back to the Sterling No. 5, introduced nearly four years ago. That machine was a very pronounced departure. In its construction the familiar elements which had characterized register making for so long were thrown aside, and a new start was taken. Numeral discs gave way to numeral wheels, and the uncertain ratchet and friction were replaced by pinion and gear. Simplicity, directness and strength were sought, and a machine was created to stand the hardest shocks and to defy the ingenuity of dishonesty. All the wearing parts were of hard metal and the wearing surfaces large. The results justified the invention. Nearly 4000 of No. 5 have been sold, and, so far as its maker knows, with entire satisfaction to the purchasers.

But it was not feasible to develop the No. 5 as a double register or a printing register, on account of its form. A new structure has, therefore, been made. The principles characterizing the No. 5 have been adhered to in simplicity, positiveness, strength and directness. The new structure is likewise geared throughout. The machine cannot be made to falsify itself. It will not work except as it is meant to work and should work. Its power of endurance has been "partially" tested, that is, after it had been rung up at 300 strokes a minute to over 3,000,000 fares, it was still in good working order, without a break or failure in any part, or any indication that it would not run off 3,000,000 more.

This new structure is sold in four forms: No. 15 is a straight single register, such as No. 5; No. 12 is the printing register for city use, No. 14 is the printing register for inter-urban use, and No. 16 is the double register. All are geared throughout.

A NEW TYPE OF RAIL JOINT

For about a year the Delaware, Lackawanna & Western Railroad has been experimenting on one of its lines with an unusual form of rail joint, devised by D. P. Springer, of Waverly, N. Y. The primary object of this invention is to provide for the effects of expansion and contraction, and to keep the overlapping ends of the rails in their fixed relative positions without resorting to rail chairs, angle plates, or similar accessories. It is also claimed that the construction

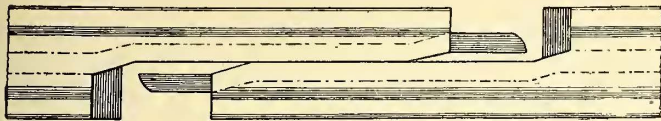


FIG. 1.—JOINT BEFORE BUTTING

adopted will prevent lateral spreading of the rails, as well as keep up the joints.

The appearance of the rail ends before they are butted is clearly shown in Fig. 1. It should be noted that the web of the rail, for some distance back from the end, is offset a distance equal to one-half of its thickness, and that near the end of the rail the web is given another offset of an equal amount. The heads and bases of the rails are then slotted out,

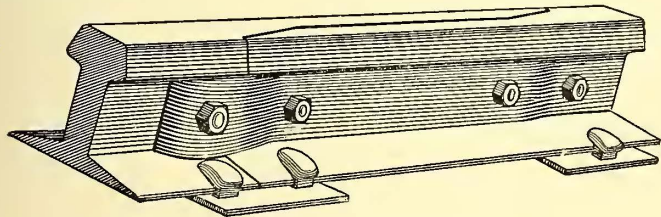
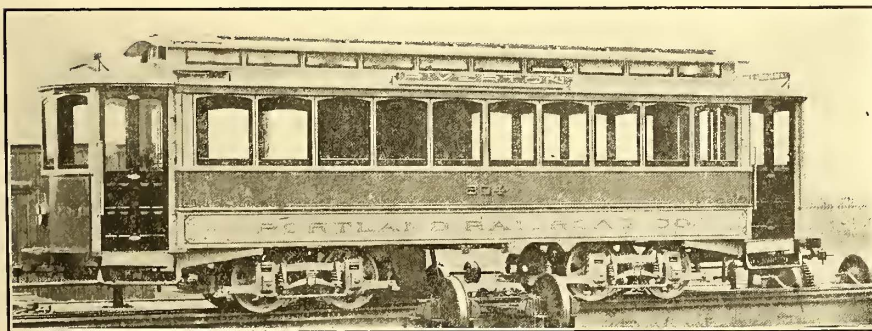


FIG. 2.—COMPLETE JOINT

so that the opposing ends will interlock with one another. When the ends are assembled they form an elongated joint, the greater part of which is longitudinal at the rail heads, and all of which is supported by two webs. Owing to this construction the tread of the wheel tends to bear equally on both sides of the jointed rail-ends, thereby materially reducing vibration and the usual wear and tear of the rolling stock.

The extreme projections of the rail heads are beveled, to



DOUBLE-TRUCK VESTIBULED CAR FOR PORTLAND, MAINE

rest upon seats in the opposite head, as shown in Fig. 1. In addition, the lower side of the base of each rail is provided, at the beginning of the joint, with a slotted enlargement, not shown in the diagrams. This enlargement is similar in appearance and purpose to a base plate, and receives the extending projection of the base of the other rail. These interlocking projections remove the possibility of the rail ends sagging or being depressed at such points. The ordinary base plate is also used, as shown in Fig. 2. After the rail ends have been assembled, bolts are applied, as illustrated.

OHIO FARMERS ASK ELECTRIC RAILWAYS TO RUN REFRIGERATOR CARS

The Medina County (Ohio) Milk Producers' Association has asked the interurban roads entering Cleveland to equip their cars with some sort of refrigerator facilities, in order that the milk producers in the surrounding country may deliver milk in Cleveland in such a state that it will not conflict with the rules of the Cleveland Board of Health, which recently declared that milk must be delivered into the city at a temperature not in excess of 50 degs. Fahrenheit. Milk warmer than this cannot be sold in Cleveland. The producers said that they could deliver to the transportation company at this temperature, but they could not be responsible for it in transit unless refrigeration facilities were provided. Most of the milk used in Cleveland is handled by the traction lines.

DOUBLE-TRUCK CLOSED CARS FOR SUBURBAN SERVICE INSTALLED BY PORTLAND RAILROAD COMPANY

The Portland Railroad Company has placed on its Riverton division four new double-truck closed cars, built by the John Stephenson Company, and mounted on trucks of the Brill 27-G short-base equalized type. Riverton is a suburb, about five miles from the business center of Portland, and contains the finest of the system of parks owned and operated by the railway company; in fact, this park is one of the most picturesque and best equipped amusement resorts of the kind in the country, having a large rustic theater, casino, boat house and other buildings for its numerous attractions. The Presumpscot River flows through the park, and constitutes one of its chief charms. Large crowds attend the band concerts which are given throughout the entire season, and as the attendance is drawn from all portions of the city and suburbs, nearly every branch of the railway system is benefited. Cape Cottage Park and Underwood Park also receive large patronage. A division of the company's lines extends to Old Orchard Beach, one of the most attractive bathing beaches on the coast. The cars operated on this section are of the 14-bench open "Narragansett" type. Semi-convertible cars are also considerably used on the various branches. The entire system comprises about a hundred miles of track and nearly 250 cars, of different types, are operated.

The new cars measure 28 ft. over the bodies and 37 ft. 5 ins. over the vestibules; width over the sills, 7 ft. 5 ins., and over the posts at the belt, 7 ft. 7½ ins.; sweep of the posts, 1¾ ins.; centers of the posts, 2 ft. 8 ins.; height from the floor to ceiling, 8 ft. 1⅝ ins.; from the track to the under side of the sills, 2 ft. 8¼ ins.; from the under side of the sills over the trolley board, 9 ft. 1½ in. The window sash drop into pockets, and the seats are placed longitudinally. Mahogany constitutes the interior finish and the ceilings are of quartered oak. Automatic vestibule folding door controllers and other specialties of Brill manufacture, such as bumpers, drawers, gongs, signal bells, etc., are included. The substantial bottom framing consists of 4¾-in. x 7¾-in. side sills, with 6-in. x ½-in. sill plates on the insides; the sub sills are 1¾ in. x 6 ins., center sills 3½ ins. x 4⅞ ins., and end sills 5¼ ins. x 6⅞ ins. The truck wheel base is 4 ft., and wheel diameter 33 ins.; axle diameter 4¼ ins. Four 40-hp motors are used per car.

LEGAL DEPARTMENT*

OPINIONS OF PHYSICIANS AS TO CAUSE OF PHYSICAL CONDITION

In the trial of an action for personal injuries it is proper to ask a medical expert whether, in his opinion, the actual physical condition of a person might have been caused by a certain previous injury, and as to the probable permanence of such physical condition. The law on this subject is well stated in the following language from the New York Court of Appeals in *Turner v. City of Newburgh* (109 N. Y., 301-309):

We think that, for the proper application of that rule, it is perfectly competent to furnish the jury with evidence of the present physical condition and bodily sufferings, and with the opinions of competent physicians as to whether such could have resulted from the accident, and as to their permanence.

The rule established by the cases of *Strohm vs. N. Y., L. E. & W. R. R. Co.* (96 N. Y. 305), and of *Tozer vs. N. Y. C. & H. R. R. Co.* (105 id. 617), referred to by counsel, simply precludes the giving of evidence of future consequences which are contingent, speculative and merely possible, as the basis of ascertaining damages. Those authorities in no wise conflict with the rule allowing evidence of physicians as to a plaintiff's present condition of bodily suffering or injuries, of their permanence and as to their cause. We conceive such to be the best mode and manner of furnishing information for the guidance of the jury in awarding damages. It is for the jury to say, upon the evidence, whether they believe the plaintiff's then condition to be the direct and proximate result of her accident, for which the defendant should be made answerable in damages, if caused by its misconduct, and not contributed to by any default of plaintiff in the exercise of ordinary care and prudence.

Practical and just limitations upon the rules above stated were given in two recent decisions by the First Appellate Division of the New York Supreme Court in *Raynor v. Metropolitan Street Railway and Newton v. N. Y., N. H., etc., R. R.* (106 App. Div., 449; id., 415). In the *Raynor* case a physician on the stand expressly admitted that he could not say with reasonable certainty whether or not the wound which had been received caused the particular injuries. This in itself was sufficient to exclude any opinion he might offer. An opinion expressed under such circumstances could not properly be classed as "expert evidence." It would be merely a vague speculation with the effect of giving the jury a pretext for indulging sympathy. It was accordingly held that it was not competent to ask the doctor whether in his opinion the accident was sufficient to cause the alleged weakness and abnormal condition of the plaintiff; that evidence that the plaintiff's condition might have been caused by the injury or that the injury was sufficient to cause such a condition was not competent evidence to show that the injury did cause the condition.

In the *Newton* case it appeared that the plaintiff was playing cards in the car of a railroad train at the time of a collision. He was thrown over on the seat by the crash but was not physically injured so far as he knew. Indeed, he testified, "I felt no pain or anything that day. I did nothing that day at all * * * I did not think much about it at the time." Physicians who examined him several weeks later testified that he was suffering from a disease of the heart. They expressed the opinion that such diseased condition could have been produced by a nervous shock, but they did not testify that a nervous shock did in fact result from the collision or from any physical injury which was the result of the collision. It was held, quite properly as we think, that the evidence did not establish that the plaintiff had suffered any physical injury from the accident. Here, as in the *Raynor* case, the effect of permitting a recovery would have been to offer the jury bald speculation as to what might possibly have produced

a diseased condition without fixing a definite injury as a starting point. The decision in the *Newton* case is in harmony with the doctrine prevailing almost everywhere in this country which precludes the allowance of damages resulting from mental shock or mental suffering without tangible physical injury. In the course of its reasoning the Court said:

If no one had been seriously injured as the result of this collision, and the sole effect had been to throw the plaintiff's testator forward, as he has testified, and the car had then proceeded to the depot, there is no reason to suppose from this evidence that the plaintiff's testator would have suffered any serious effect from the accident. But the testimony of a physician that nervous or mental shock could have caused the condition in which the plaintiff's testator was found at the time of the trial was not competent to show that the physical effect of this accident did cause the plaintiff's testator's condition at the time of the trial.

CHARTERS, ORDINANCES, FRANCHISES.

INDIANA.—Eminent Domain—Condemnation Proceedings—Award—Exceptions—Increased Verdict—Damages—Instructions—Deduction for Benefits—Trial—Credibility of Witnesses—Evidence—Admissions—Offer Preceding Condemnation.

1. Though defendants in condemnation proceedings file no exceptions to the award of appraisers, but, on the amount thereof being paid into court, receive it, yet, plaintiff having excepted to the award and had a trial on the issues so raised, it must pay the additional amount of damages then found, or lose all rights in the land.

2. In view of the instruction given at plaintiff's request, in proceedings to condemn a right of way, that in assessing the damages the jury could not take into consideration remote or fanciful injuries, resting wholly in conjecture and not admitting of an estimate in damages, certain particular things being specified which they could not consider, the part of an instruction that in estimating damages the jury could, in addition to certain things, consider "any other things either annoying or hurtful and necessarily incident to the permanent location and operation of a traction line across a farmer's premises," will be considered harmless.

3. *Burns' Ann. St. 1901, Sec. 922*, providing that in estimating damages no deduction shall be made for any benefit that may be supposed to result to the owner from the contemplated work, applies to condemnation proceedings for a railroad right of way.

4. An instruction, in a proceeding to condemn a right of way through a farm, that in weighing the testimony of different witnesses as to the effect of taking the strip on defendant's remaining lands for farming purposes they may consider whether the witness is a practical farmer of experience, or a mere owner of real estate, with little, if any, experience in the actual work and management of a farm, "bearing in mind, however, that you alone are to determine whether these facts have been shown, and what weight, if any, is to be given to these facts," is proper; the jury not being told that the testimony of one class of witnesses is entitled to greater weight than that of another class.

5. An offer made by the land owner for the purpose of agreeing on the compensation to be paid for a railroad right of way is not evidence against him as an admission; there having been a failure to agree, resulting in condemnation proceedings.—(*Indianapolis Northern Traction Co. vs. Dunn et al.*, 76 N. E. Rep., 269.)

NEW JERSEY.—Street Railways—Leases—Ultra Vires Act—Injunction—Trespass—Remedy at Law—Inadequacy—Appeal—Suspension of Injunction.

1. Plaintiff street railway company, desiring to extend its tunnel under the North River, still underground, leased from defendant connecting street railway company the right to use certain of its land for that purpose for 999 years. The land so leased was vacant, except for an old storehouse, and it appeared that the use of the land for the extension of such tunnel would not interfere in any way with the exercise of the franchises of the lessor. Held, that such lease was not beyond the lessor's power to grant.

2. Where plaintiff under a lease from defendant was entitled to enter certain land for the extension of plaintiff's tunnel which had been constructed under the North River, but defendant intervened and with a strong hand refused to permit plaintiff to do the work contemplated, plaintiff's damages being uncertain, it had no adequate remedy at law, and was entitled to an injunction restraining such acts.

*Conducted by Wilbur Larremore, of the New York Bar, 32 Nassau Street, New York, to whom all correspondence concerning this department should be addressed.

3. Where an injunction was granted restraining defendant from interfering with a strong hand to prevent plaintiff from constructing certain improvements under a lease, the injunction would not be suspended pending appeal under a statute declaring that no appeal from an order granting an injunction shall suspend or modify its operation without an order of the chancellor, and that a suspension or modification thereof shall extend only so far as may be necessary to preserve the subject of the appeal, and shall not in any case be allowed to destroy the right established or protected by the decree appealed from.—(Hoboken & M. R. Co. et al. vs. Jersey City, H. & P. Ry. Co. et al., 62 Atl. Rep., 539.)

OHIO.—Street Railroads—Grant of Franchise—Consent of Property Owners—Rates of Fares.

The requirements of Sec. 30 of the new Municipal Code (Sec. 1536-185, Rev. St. 1903) that the council of a city shall not grant a franchise for the construction of a street railroad excepting "to the corporation, individual or individuals, that will agree to carry passengers upon such proposed railroad at the lowest rates of fare, and shall have previously obtained the written consent of a majority of the property holders upon each street or part thereof, on the line of the proposed street railroad, represented by the feet front of the property abutting on the several streets along which such road is proposed to be constructed," confers upon such property holder the privilege of giving or withholding his consent to the construction of such road, but it does not give him the privilege of limiting his consent to a particular corporation or individual. His consent, so limited, is inconsistent with the requirement that the franchise be given to the corporation or individual that will carry passengers at the lowest rates of fare and would tend to defeat the purpose of the statute. The limitation, therefore, is void, and the consent good as a consent to the construction of the road by the lowest bidder.—(Forest City Ry. Co. et al. vs. Day, 76 N. E. Rep., 396.)

WEST VIRGINIA.—Street Railways—Grant by Municipal Authorities—Effect—Forfeiture of Right—Conditions—Non-performance—Equity—Relief Against Forfeiture—Enforcement of Forfeiture—Oppressive Conduct—Appeal—Review—Discretion of Court—Municipal Corporations—Privileges in Highways—Police Power—Certiorari—Actions Reviewable—Construction—Consent of Municipal Authorities.

1. An ordinance, passed by the council of a town, granting to a street railway company the right to lay its track and operate its railway in the streets of the town, and accepted by the railway company, constitutes a contract between the town and such company, vesting title to such right or easement in it, unless the ordinance contains conditions precedent compliance with which is requisite to the vesting of title.

2. Such right may be forfeited and lost by failure to comply with subsequent conditions, and, if the ordinance expressly provides for forfeiture as the penalty of non-compliance with conditions specified in it, substantial performance of the contract as a whole constitutes no answer to a proceeding to forfeit for failure to comply with such conditions, however slight their relative importance may be. The question of materiality is, in such case, withdrawn from the courts by the stipulations of the contract.

3. A street railway license or privilege in a street may be forfeited for failure to lay planks of prescribed dimensions along the rails of its track in front of improved property, if the ordinance expressly gives the right to forfeit it for such cause.

4. Equity will relieve from forfeitures for non-performance of covenants other than those for the payment of money, arising out of accident, mistake, or surprise, and in the absence of willful and deliberate refusal to perform, when no pecuniary injury has resulted to the covenantee and the wrong done is easily remediable; but such power of relief is discretionary, and will not be exercised unless the delinquent covenantor is able and willing to immediately perform the covenant.

5. Equity will not permit the enforcement of a forfeiture in an inequitable and oppressive manner, nor a perversion thereof to purposes other than those for which the power of forfeiture has been reserved.

6. In the exercise of such power, under an ordinance of a municipal corporation prescribing notice and specification of cause as a necessary preliminary step, the officers of such corporation must deal fairly, openly, and frankly with the party whose rights they attempt to take away, and abstain from such conduct as will work a surprise upon him. Their conduct is governed by substantially the same rules and principles as apply

to proceedings by private persons under similar circumstances. In order to be inequitable and oppressive, their conduct need not be actually fraudulent. If in equity and conscience it is oppressive or lacking in fairness, equity will relieve, however honest and sincere the parties attempting to forfeit may have been.

7. The discretion of the court in such case is a sound legal discretion, subject to review, and the appellate court will reverse the action of the trial court when, in its opinion, relief has been improperly denied.

8. A declaration of forfeiture of a street railway privilege in a street by the council of a town, effected by repeal of the ordinance by which the privilege was granted, pursuant to a reservation of power so to do, for cause and after notice, has not the force and effect of a judicial determination of the existence of cause for forfeiture, and does not preclude a resort to the courts by the railway company for vindication of its rights. After such repeal, pursuant to notice, the railway company may, by injunction, prevent the town authorities from removing or disturbing its track, if no cause of forfeiture existed, or the circumstances shown are such as to call for the exercise of equity jurisdiction to relieve from forfeiture. In so far as the decision in town of Davis vs. Davis, 21 S. E. 906, 40 W. Va. 464, imports the contrary of the foregoing proposition, it is re-examined and disapproved.

9. The action of municipal authorities in granting and revoking privileges and licenses in highways is the exercise of delegated police power, and is not judicial in character.

10. Only judicial action is reviewable by the writ of certiorari under Secs. 2 and 3 of Chapter 110 of the Code of 1899. The scope of the writ is not altered by the statute in respect to the nature of the proceedings for the review of which it may be had. In this respect it remains as it was by the common law.

11. Consent of the board of commissioners of Ohio County to the operation of a street railway on and over the Cumberland Road in said county of Ohio does not confer authority upon the railway company holding such permit to construct and operate its railway on and over such portion of said road as lies within the limits of the town of Triadelphia, in said county, without the consent of the authorities of said town.—(Wheeling & E. G. R. Co. vs. Town of Triadelphia et al., 52 S. E. Rep., 499.)

WISCONSIN.—Street Railroads—Franchises—Construction.

A city ordinance granting a street railway the right to build and maintain a single or double-track railway, with all necessary switches or turnouts, upon certain streets of the city, provided that the entire line shall be completed and in operation before a certain date, gives the railway an option to build either a single or a double-track line within the specified time, and its exercise of that option, by building and putting in operation a single-track line, exhausts its rights under the ordinance, and it cannot, after the expiration of the time limited, lay additional tracks, and thus convert its line wholly or partially into a double-track line.—(Eastern Wisconsin Ry. & Light Co. vs. Winnebago Traction Co., 105 N. W. Rep., 572.)

LIABILITY FOR NEGLIGENCE

ALABAMA.—Carriers—Injuries to Passenger—Complaint—Sufficiency—Contributory Negligence.

1. A complaint in an action against a street railway company for injuries received by a passenger while alighting from a car, in consequence of the sudden starting of the car, which alleged that the car stopped at the intersection of designated streets, which was plaintiff's point of destination; that she attempted to alight there; that before she had fully got off the car was put in motion, and as a proximate consequence thereof she was thrown to the ground; that the starting of the car caused the injuries complained of; and that the car was negligently operated—states a cause of action against the objections that it fails to sufficiently state defendant's negligence, that it fails to allege that defendant put the car in motion while she was alighting, that it fails to allege that the car stopped for the purpose of allowing passengers to alight, that it fails to show that the place where the car stopped was a regular stopping place for passengers to alight, and that it fails to show that defendant's servants had notice of her attempt to alight.

2. A passenger, alighting from a car which had stopped, is not negligent as a matter of law because she attempts to alight with her back in the direction in which the car was going; she having the right to assume that the car would remain stationary until she had alighted.—(Birmingham Ry., Light & Power Co. vs. Handy, 39 S. Rep., 917.)

ALABAMA.—Pleading—Disjunctive Allegations—Street Railroads—Defect in Streets—Negligence—City Ordinances—Effect—Master and Servant—Independent Contractor—Action—Evidence—Street Railroads—Repair—City Ordinance—Construction—Taking Possession of Street—Duty to Public—Negligence—Liability of Employer—Excavation in Street—Injuries—Action—Instructions—Trial—Province of Court—Obstruction in Street—Liability—Confused or Misleading Charge—Abstract Charge—Municipal Corporations—Duty of Traveler—Damages—Expenses Incurred—Husband and Wife—Credit—Presumptions—Municipal Corporations.

1. In an action against a street railway for injuries received by plaintiff through falling into an excavation made by defendant in a public street, the first count of the complaint alleged that defendant excavated its track or dug a ditch in the street, etc., and that plaintiff fell into such excavation and was injured in consequence of defendant's negligence in leaving the excavation without barricades or without such other means as are usual to guard the public at night from falling into it, etc. The second count alleged the character of the injury received and the manner in which it was received, and averred that defendant's negligence consisted in leaving the excavation open without a light or other thing to give warning thereof. The third count alleged the duty of defendant as operator of a street railway to keep the part of the street occupied by its track in a reasonably safe state of repair for the safe passage of travelers over it, and alleged a negligent disregard of such duty by permitting an excavation to remain in the same unguarded, without lights or other things to give warning thereof. The fourth count alleged defendant's duty to keep that part of the street over which its track ran in safe repair for the passage of travelers and a disregard of the duty by excavating the same and negligently failing to put up signals or lights on the excavation. The fifth count set out that it was defendant's duty to keep the street occupied by its tracks in reasonable repair for the safe passage of travelers, and that a contractor, constructing or repairing said track for defendant, made an excavation and negligently left it open at night without proper lights or safeguards. The sixth count set forth a city ordinance requiring any street railway company operating its line within the city to keep in good repair all that part of the street occupied by its tracks, and averred the operation by defendant of a street railway company, etc., its duty to keep the street so occupied, etc., in reasonable repair, and that the tracks and the street were out of repair by reason of a hole negligently left open by defendant without proper guards, etc., and that plaintiff fell in and was injured. The seventh count set out an ordinance granting to defendant the right to operate and maintain an additional track on the street in which the injury occurred, and also another city ordinance requiring defendant to keep that part of the street whereon its track was laid in good repair, and alleged a breach of duty in respect thereto and negligence, etc. Held, that the several counts were not remurrable as charging disjunctively two causes of action.

2. The fact that a street railway is by city ordinance required to keep that part of the street over which its track passes in good repair does not make it any the less liable for negligence in leaving an excavation made by it in such street without the usual safeguards.

3. Where, in an action against a street railway for injuries received by plaintiff through falling into an excavation made by defendant in a street over which its track passed, defendant set up that the excavation was being made by an independent contractor for whose negligence it was not liable, and, further, that the work was done under the supervision and direction of the city engineer, plaintiff was properly permitted to prove by such city engineer that the permit to do the work was secured by one stated to be defendant's general manager.

4. A city ordinance requiring any street railway company operating a line within the corporate limits to keep in good repair all that part of the street occupied by its tracks, includes additional tracks to be laid, as well as those already laid and under operation.

5. Irrespective of ordinance, when a street railway company takes possession of a portion of a public street for the purpose of building and operating a railway under its franchise, it necessarily assumes a duty to the public to keep that part of the street occupied by it free from pitfalls and in a safe condition.

6. A principal is liable for the acts of an independent contractor employed by him where the work to be done is intrinsically dangerous, however skillfully performed.

7. Where an employer owes certain duties to third persons or

the public, he cannot relieve himself from liability by committing the work to a contractor.

8. In an action against a street railway for injuries sustained by plaintiff through falling into an excavation made by defendant in a street, an instruction that if plaintiff "on approaching the place where she sustained her injury, if there was anything, such as debris, lumber, timber, piles of dirt, etc., such as was reasonably calculated to give warning that the earth had been excavated at that point, it was then her duty to be on the lookout to detect and avoid any such excavation, and if she failed to do this, and thereby contributed to her injury, she cannot recover," was properly refused as confusing.

9. In an action against a street railway for injuries sustained by plaintiff through falling into an excavation made by defendant in the street, a charge that there was no evidence in the case that plaintiff suffered any permanent injury on account of the fall testified about was properly refused, as the court cannot be required to declare to the jury that there was no evidence of a particular fact.

10. The fact that the city engineer is overlooking work done by a street railway in a public street in the course of repairing its tracks does not relieve the railway from the duty resting on it to keep such part of the street in a safe condition.

11. In an action against a street railway for injuries sustained by plaintiff through falling into an excavation made by defendant in a public street, a charge reading: "When I charge you that the plaintiff did or failed to do anything which contributed to her injury, I do not mean that what she might have done or failed to do was the sole cause of her injury. It would be sufficient if such conduct on her part merely contributed to her injury to prevent a recovery in her case"—was properly refused, as confusing and liable to the construction that the court had charged that plaintiff had done or failed to do something which contributed to her injury.

12. Where, in an action against a street railway for injuries sustained by plaintiff through falling into an excavation made by defendant in a public street, the evidence was uncontradicted that plaintiff was crossing the street at a regular crossing when the accident occurred, a charge that "while a foot traveler on the sidewalks or on crosswalks provided for them, if they go off the sidewalks or crosswalks for foot travelers, it is their duty to use reasonable care to see that the way is clear," was properly refused as abstract.

13. In an action against a street railway for injuries sustained by plaintiff through falling at night into an unlighted excavation made in a public street by defendant, where there was no evidence tending to show that any light had been placed at the excavation or that anyone had extinguished such light, a charge that if lights were placed at the excavation, and they were thereafter extinguished by some person unknown to defendant before the injury occurred, defendant was not liable, was properly refused as abstract.

14. In an action against a street railway for injuries sustained by plaintiff through falling into an excavation made by defendant in a street, a charge that plaintiff, while walking along the sidewalk on the street, had the right to assume that the sidewalk was safe, but when she stepped off the same and into the street it became her duty to use ordinary care to look and see that the street was clear and safe, was properly refused, as calculated to mislead the jury by giving the impression that greater care was required when off the sidewalk than when on it.

15. It is not the duty of a traveler in a public street to ascertain whether or not the way is clear, though it is his duty, after ascertaining that there is an obstruction, to exercise ordinary care to avoid injury.

16. In an action against a street railway for injuries to a married woman, where there was no evidence as to whether credit was given plaintiff or her husband for medical services, the presumption was that the credit was given to the husband.

17. A traveler on a public street, knowing of a dangerous excavation therein, or having reason to believe that the same exists, must, on approaching the place, look for and avoid it if possible.—(Montgomery St. Ry. Co. vs. Smith, 39 S. Rep., 757.)

ALABAMA.—Carriers—Injuries to Passengers—Contributory Negligence—Trial—Instructions—General Affirmative Charge—Injuries to Passengers—Actions—Alighting from Moving Train.

1. The slowing up of a train for a station is not an invitation to the passenger to alight while the train is in operation or moving, or for the passenger to place himself in a position of peril.

2. In an action for injuries to a passenger, where the evidence

entirely failed to show any wantonness on the part of the trainmen, the general affirmative charge with hypothesis for defendant was properly given as to counts of the complaint alleging wantonness on the part of defendant, its agents, or servants, in inflicting the injury.

3. In an action for injuries to a passenger, a charge that, unless the jury believe from the evidence that defendant's servant or agent was guilty of negligence, they must find for defendant was proper.

4. In an action for injuries to a passenger, a charge that, if plaintiff was guilty of negligence which contributed approximately in the slightest degree to her injury, the jury must find for defendant was proper.

5. A passenger is guilty of contributory negligence in attempting to get off a moving car at a time when a reasonably prudent person similarly situated would not attempt to alight.

6. In an action for injuries to a passenger, instructions stating in effect that defendant was guilty of negligence if it slowed up its train to receive a passenger, and after so slowing up moved off more rapidly without seeing that plaintiff, who was wishing to get off, was not in a position of peril, were bad, in that they took from the jury the question of defendant's negligence.

7. In an action for injuries to a passenger, a charge that plaintiff was entitled to recover if defendant negligently moved the train more rapidly after slowing down at the station at which plaintiff wished to alight, provided plaintiff acted on the slower motion of the train and attempted to get off, and such slower motion was such as to make plaintiff believe that it was safe to act upon it, and the injury was occasioned by the increased speed, was bad, in that it hypothesized defendant's negligence on plaintiff's belief under the circumstances, and not on the belief of a reasonably prudent person.—(Sweet vs. Birmingham Ry. & Electric Co., 39 S. Rep., 768.)

CALIFORNIA.—New Trial—Discretion of Trial Court—Verdict Against Evidence—Street Railways—Negligent Operation—Sufficiency of Evidence—Death—Actions—Measure of Damages.

1. It is the duty of the trial judge, on a motion for a new trial, to exercise his judgment and discretion in reviewing the evidence, and even though it is conflicting, to grant a new trial if he does not believe that the verdict is the correct conclusion from all the evidence; and his action in so doing will not be interfered with on appeal, except in case of an abuse of discretion.

2. In an action against a street railway for the death of the driver of a wagon, caused by collision with a street car, an order of the trial court granting a new trial, on the ground that the evidence did not support the verdict, which was for defendant, but showed negligence on defendant's part, held, in view of the evidence, not an abuse of discretion.

3. Under Code Civ. Proc. Sec. 377, providing that, when the death of a person is caused by the wrongful act or neglect of another, his heirs or personal representatives may maintain an action for damages against the person causing the death, and such damages may be given as under all the circumstances of the case may be just, the amount of recovery in actions for wrongful death is limited to the value of the pecuniary interest of the persons entitled to such recovery in the life of the person killed; but such pecuniary interest need not be measured and demonstrated by the evidence as a precise sum of money, and the fact that it is not shown that a husband, on account of whose death damages are claimed by his widow, was in sound bodily health, and in receipt of monthly wages or salary, is not fatal to a recovery of more than nominal damages.—(Ruppel vs. United Railroads of San Francisco, 82 Pac. Rep., 1073.)

CALIFORNIA.—Appeal—Findings of Court—Construction—Trial—Damages for Personal Injury—Carriers—Injury to Passenger—Contributory Negligence—Negligence of Carrier—Presumptions—Duty as to Transportation of Passengers.

1. Findings of a trial court are to be so construed as to uphold the judgment, and when, from the facts found, other facts may be inferred which will support the judgment, the inference will be presumed to have been made by the court below.

2. A finding that a specified sum will compensate one for a personal injury negligently inflicted means the amount necessary to compensate him as fixed by Civ. Code, Sec. 3333, providing that the measure of damages is the amount which will compensate for the detriment proximately caused by another's breach of obligation not arising from contract.

3. Where a passenger on a street car notified the servants in charge of the car to stop at a crossing, and the car as it ap-

proached the crossing slackened its speed as if to stop, the passenger, in leaving his seat and proceeding to the door for the purpose of alighting when the car came to a stop, was not guilty of contributory negligence as a matter of law, precluding a recovery for injuries received by reason of the sudden jerking of the car occasioned by the sudden turning on of the electric current.

4. Where a street car was so operated as to violently throw therefrom a passenger who had notified the servants in charge of the car to stop at a crossing, and who, on the car slackening its speed as if to stop at the crossing, had left his seat and proceeded to the door for the purpose of alighting when the car came to a stop, a presumption that the servants were not exercising the utmost diligence for the safety of the passengers as required by law, but were negligent, arose.

5. The care which a carrier must exercise towards its passengers is the utmost care, involving such constant supervision over and observation of the passengers as will insure to the employees information as to the condition and position of the passengers; and, when the means of knowledge in relation to the position of a passenger is in the carrier, the same rule applies as when actual knowledge exists.—(Griffin vs. Pacific Electric Ry. Co., 82 Pac. Rep., 1084.)

MASSACHUSETTS.—Street Railroads—Injuries to Person on Track—Contributory Negligence—Evidence—Burden of Proof.

Evidence in an action against a street railway company for the death of a person who was struck by a street car examined, and held not to prove decedent's freedom from contributory negligence, notwithstanding the motorman's negligence just before the accident.

In an action against a street railway company for the death of a person who was struck by a car, plaintiff has the burden of proving that decedent was in the exercise of ordinary care, though the motorman was negligent just before the accident.—(Gorham vs. Milford, A. & W. St. Ry. Co., 75 N. E. Rep., 634.)

MINNESOTA.—Street Railroads—Collision with Traveler—Evidence—Instructions—Contributory Negligence.

Action to recover for personal injuries sustained by a collision between the defendant's street car and the sleigh of the plaintiff's husband, in which she was riding and which was drawn by a horse owned and driven by him. Held:

1. The evidence justified the trial court in submitting to the jury the question of the willful negligence of the defendant, and the court's charge to the jury as to such question, considered as a whole, was free from error.

2. The court did not err in its charge as to the alleged failure of the defendant to sound its gong.

3. The evidence does not show that the plaintiff was guilty of contributory negligence as a matter of law.—(Tcal vs. St. Paul City Ry. Co., 104 N. W. Rep., 945.)

MINNESOTA.—Pleading—Amendment—Conforming Complaint to Evidence—New Trial—Excessive Damages—Assignment of Error—Appeal—Review.

In an action to recover damages for personal injuries alleged to have been caused by the negligence of the defendant, the complaint alleged that the defendant so carelessly and negligently operated and controlled the car as to cause the car to collide violently with an iron gate extending across the tracks, thereby with great force throwing the plaintiff against the seats and other parts of the car. At the trial, evidence was received from which it might reasonably be inferred that the plaintiff's injuries were caused by the manner in which the car was handled by the motorman in attempting to make a sudden stop, and not solely by the shock of the collision. Held, that the trial court did not abuse its discretion in allowing the plaintiff to amend the complaint in order to make the allegations conform to the evidence.

2. Where it is claimed that the damages awarded by a jury in an action to recover unliquidated damages, such as an action for personal injuries, are excessive or inadequate, and were given under the influence of passion or prejudice, the motion must be made in the trial court, under the fourth subdivision of Sec. 5398, Gen. St. 1894.

3. The granting or refusal of a new trial upon the ground of excessive or inadequate damages appearing to have been given under the influence of passion or prejudice rests in the sound judicial discretion of the trial court, subject to review in this court under the rules applicable to other discretionary orders. It cannot be raised for the first time in this court.—(English vs. Minneapolis & St. P. Suburban Ry. Co., 104 N. W. Rep., 886.)

MISSOURI.—Street Railroads—Injury to Traveler in Collision—Contributory Negligence—Discovered Peril—Instructions—Inconsistent Instructions.

1. A traveler on a street, injured in a collision with a street car, may recover, though guilty of negligence contributing to the injury, where the motorman not only could have seen the traveler's peril in time by proper care to have averted the danger, but did actually see him in peril a sufficient length of time to have done so.

2. Where, in an action against a street railway company for injuries to a traveler received in a collision with a street car, a witness testified that the car was run as fast as it could go, and it was shown that the force with which it struck was sufficient to kill one of the plaintiff's horses and carry the weight of the wagon and load—2000 lbs.—50 ft., there was evidence that the company ran its car at a rapid rate or speed, sufficient to predicate an instruction thereon.

3. An instruction, in an action against a street railway company for injuries to a traveler received in a collision with a street car that before plaintiff can recover it must be found that the company's negligence was the direct cause of the injury, and that then he cannot recover if his negligence contributed to the injury, being based on the concurring negligence of plaintiff and the company, is not in conflict with an instruction based on the separate negligence of the company as the direct cause of the injury.—(Jager vs. Metropolitan St. Ry. Co., 89 S. W. Rep., 62.)

MISSOURI.—Street Railways—Injuries to Pedestrian—Trespasser—Discovered Peril—Contributory Negligence—Appeal—Harmless Error—Instructions—Variance—Rule Prohibiting Use of Track.

1. Where plaintiff was walking upon the tracks of defendant street railway company at a point which was not a street, but which was in a populous city and was generally used by pedestrians, the company was liable for an injury caused by plaintiff being struck by a car, if the persons in charge thereof could by proper care have discovered the plaintiff's peril in time to have avoided the injury.

2. Where plaintiff was walking upon the tracks of defendant street railway company at a point which was not a public street, and there got his foot caught in a safety device and was injured by a car, he was guilty of contributory negligence, preventing a recovery unless defendant's servants could, by proper care after discovering the danger, have avoided the accident without endangering its passengers and employees.

3. Where, in an action against a street railway company for personal injuries, the petition alleged that plaintiff was injured while passing along a place "used as a part of a certain street, which place was one where the public was accustomed to walk upon defendant's tracks," an instruction permitting a recovery if plaintiff was injured "at a place on defendant's track where the public was accustomed to walk" was not such a variation as to be available on appeal, in the absence of any affidavit made at trial as provided by statute.

4. In an action against a street railway company for injuries sustained by a pedestrian walking on the tracks at a place where the public was accustomed to walk, the fact that defendant had forbidden such use of its tracks was not material.—(Williams vs. Metropolitan St. Ry Co., 89 S. W. Rep., 59.)

MISSOURI.—Damages—Measure—Personal Injury—Future Loss—Instructions—Appeal—Review—Questions not Raised Below.

1. Where, in a personal injury action, the evidence authorizes the jury to assess present damages for future loss as a result of the injury, an instruction that the damages must be confined to the loss reasonably certain to result is proper.

2. Where, in a personal injury case, the evidence shows that plaintiff will be wholly disabled from performing the work in the business in which he was engaged at the time of the accident, an instruction that plaintiff, if entitled to recover, is entitled to compensation for loss of time in his business which "he may hereafter lose, if any, by reason of" the injuries, is proper, for the word "may" means "shall."

3. In a personal injury action, the question whether plaintiff could recover for loss of earnings could not be reviewed in the appellate court, if not raised below, under the express provisions of Rev. St. 1899, Sec. 64.—(Caplin vs. St. Louis Transit Co., 89 S. W. Rep., 338.)

MISSOURI.—Carriers—Duty Towards Passengers—Negligence—Presumptions—Actions for Injuries—Pleading—Allegations of Negligence—Necessity of Proof—Railroads—Accidents at Crossings—Pleading—Issues—Sufficiency of Evi-

dence—Instructions—Enlargement of Pleadings—Trial—Instructions—Cure by Conflicting Instructions.

1. A common carrier, though not an insurer of the safety of its passengers, is held to the exercise of the highest degree of care in protecting them from injury.

2. The right of action which accrues to a passenger injured while being served by the carrier, is founded in negligence, but from the character of the relation a presumption of negligence arises from the fact of injury, and throws the burden upon the carrier to establish the exercise of requisite care on its part.

3. A petition against a carrier for injuries to a passenger need not specify the negligent acts which caused the injury, but it is sufficient that it charge in general terms that plaintiff was injured while being carried as a passenger as the result of the negligence of the carrier.

4. Where a petition against a carrier for injuries to a passenger unnecessarily alleges the specific acts of negligence complained of, plaintiff assumes the burden of proving the acts alleged, and must recover, if at all, on the negligence pleaded.

5. A petition against a street railway and a railroad for injury sustained by a passenger on a street car as the result of a collision between the street car and a railroad car, which alleged that defendants failed to keep a reasonable and necessary lookout and to observe the approach of the railroad car, authorized proof of the negligence of a watchman employed to warn street cars of the approach of railroad cars, as well as that of the servants in charge of the street car in failing to take proper precautions to apprise themselves of danger before sending the car across the railroad tracks.

6. In an action against a street railway and railroad for injuries sustained by a passenger on a street car as the result of a collision between the street car and a railroad car, there was evidence that the watchman employed by both the street railway and railroad had had an altercation with a switchman employed by the railroad as to their respective duties in the matter of giving crossing signals, and that on the occasion of the accident the watchman refused to heed signals of the switchman, and the switchman refused to notify the watchman of the approach of the railroad car and gave signals direct to the motorman. Held, that there was sufficient evidence of negligence to take the case to the jury as against both defendants.

7. A petition against a street railway and railroad for injuries to a passenger in a street car, resulting from a collision between the street car and a railroad car, alleged that defendants were guilty of negligence in failing to keep a necessary lookout and observe the approach of the railroad car. The court charged generally to find for plaintiff, if the defendant street railway failed to use the highest degree of care toward plaintiff, or if the defendant railroad failed to observe ordinary care, and such failure resulted in or contributed to plaintiff's injury. Held, that the charge was erroneous, in that it failed to condition the right of recovery on the establishment of the negligence charged in the petition.

8. In an action against a carrier for injuries to a passenger, a charge erroneously permitting a recovery on the establishment of negligence of any kind on defendant's part, regardless of the issues raised by the pleadings, was not cured by another charge requiring a finding for defendant unless it was negligent in some manner charged in the petition.—(Hamilton vs. Metropolitan St. Ry. Co. et al., 89 S. W. Rep., 893.)

MISSOURI.—Electricity—Personal Injuries—Care as to Licensees—Proximate Cause—Probable Consequences—Death—Contributory Negligence—Presumptions—Electricity—Evidence—Action—Instructions.

1. Where a contract between an electric company and another required the latter's servants to work in the electric company's power house, the company was bound to keep wires near which such servants were required to work so insulated and protected as to be safe.

2. Where a servant of one who had contracted to do certain work in an electric power house, was killed by a shock of electricity, caused by an iron pipe, which he was fitting, or by his wrench, coming in contact with an insufficiently insulated wire, the want of proper insulation was the proximate cause of the death.

3. In an action for death, owing to the alleged negligence of defendant, in the absence of evidence it is to be presumed that deceased was in the exercise of due care.

4. Where the servant of one who had contracted to do certain work in the power house of an electric company was killed, by an iron pipe he was fitting, or by his wrench, coming in con-

tact with an insufficiently insulated wire, it appearing that there was sufficient light at the place to enable him to do his work, but not sufficient for him to make an examination of the insulation, he had a right to assume that the insulation was sufficient, and was not guilty of contributory negligence.

5. The servant of one who had contracted to do work in an electric power house was killed, owing to an iron pipe that he was fitting coming in contact with an insufficiently insulated wire; and in an action for the death the court charged that defendant was not required to use the most perfect form of insulation, and that if that which was used was reasonably safe there could be no recovery, but that if the insulation was in an imperfect and dangerous condition, which was known or could have been made known to defendant by reasonable care and inspection, and if deceased received an electric shock by reason of such imperfect condition, plaintiff was entitled to recover. Held, that the instruction was sufficiently favorable to defendant.

6. The court instructed that, if the accident was the result of deceased's own negligence and carelessness in working in a place which a reasonable person in his position would know to be dangerous, or of his negligence as to the manner in which he performed his work, which negligence directly contributed to the injury, there could be no recovery; that a workman has no right to work in a place obviously dangerous, and that if he does so he takes the naturally incident risks; but that the mere fact that deceased might have known that the place was dangerous would not of itself deprive plaintiff of the right to recover, if in point of fact the accident resulted from defendant's negligence, and if deceased exercised such care and caution as a man of ordinary care and prudence in his calling would exercise under like circumstances. Held, that the instruction was a fair one on the doctrine of contributory negligence.—(Ryan vs. St. Louis Transit Co., 89 S. W. Rep., 865.)

MISSOURI.—Street Railroads—Crossing Accident—Negligence—Observance of Ordinance—Presumptions—Look and Listen—Presumptions—Contributory Negligence—Question for Jury—Trial—Request to Charge—Other Instructions—Crossing Accident—Speed Ordinance—Evidence.

1. Where the car by which deceased was killed as he was passing over a street crossing approached at a speed of from 20 to 25 miles an hour, in violation of a city speed ordinance limiting the speed of cars to 10 miles an hour at the place of the accident, passing a car going in the opposite direction, and deceased was struck just as he was leaving the track, so that it was inferable that, if the car had been running at a proper rate of speed, deceased would have succeeded in crossing ahead of the car, the question of defendant's negligence is for the jury.

2. Deceased, who was killed by a street car at a crossing, had a right to presume, in attempting to cross ahead of the car, that it would be run in obedience to a city speed ordinance.

3. In an action for death in a collision between deceased and a street car at a crossing, it would be presumed, in the absence of evidence to the contrary, that deceased looked and listened before attempting to cross in front of the car, and that he was in the exercise of proper care.

4. In an action for death of a pedestrian in collision with a street car at a crossing, evidence held to require submission of the question of deceased's contributory negligence to the jury.

5. A motorman, while operating a street car over a crossing, though entitled to presume that a person approaching the track will stop before undertaking to cross, so long as there is nothing in the conduct and actions of the person to indicate the contrary to a man of ordinary prudence, on the observance of conduct and actions justifying such contrary conclusion, is bound to pursue such course in the operation of the car as he would if he was in fact aware that the person was going to get on the track.

6. It is not error for the court to refuse a request to charge which was covered by the instructions given.

7. It is not error for the court to refuse a request to charge directing the jury to consider certain particular facts in reaching a conclusion on an ultimate fact in issue.

8. In an action for death in a collision at a street railroad crossing, alleged to have been caused by the operation of the car at an excessive rate of speed, a city ordinance prohibiting the operation of cars at a greater speed than 10 miles an hour at the point in question was admissible.—(Eckhard vs. St. Louis Transit Co., 89 S. W. Rep., 602.)

NEBRASKA.—Carriers—Injury to Passenger—Evidence.

In an action for damages by a passenger against a street railway company, where the defendant's liability rests upon the question whether or not a street car was suddenly and carelessly started as the plaintiff was about to alight therefrom, which is denied, the defendant is only required to furnish sufficient proof to rebut that produced by the plaintiff upon this point, and is not required to establish its freedom from negligence by a preponderance of the evidence.—(Lincoln Traction Co. vs. Shepherd, 104 N. W. Rep., 882.)

NEW HAMPSHIRE.—Death—Damages—Capacity to Earn Money—Evidence.

1. Under Pub. St. 1891, c. 191, Sec. 12, providing that, in an action for the wrongful killing of a human being, his capacity to earn money may be considered as an element of damage, evidence tending to show such capacity is competent.

2. Evidence in an action for the wrongful killing of plaintiff's wife, brought under Pub. St. 1891, c. 191, Sec. 12 of which makes capacity to earn money an element of damage, that deceased never had earned money, and from her station in life probably never would render services calling for pay, though competent on the question of capacity to earn, would not prevent the jury from finding from other evidence that such capacity existed.

3. In an action for the wrongful killing of plaintiff's wife, brought under Pub. St. 1891, c. 191, Sec. 12 of which makes earning capacity of the deceased an element of damage, evidence as to the value of the wife's services as housekeeper in plaintiff's family was competent as tending to show such earning capacity.—(Dillon vs. Hudson, Pelham & Salem Electric Ry. Co., 62 Atlantic Reporter, 93.)

NEW YORK.—Carriers—Passengers—Termination of Relation—Obstruction of Streets—Standing Cars—Persons Crossing Tracks—Personal Injuries—Negligence.

1. A street railroad's duty to a passenger as such ceases, where the passenger has alighted from the car at the terminus of its route, and has proceeded along the car to its front, and has started to cross the track.

2. A street railway has the right, without being charged with a breach of duty or an unlawful obstruction of the highway, to allow its cars to stand upon its tracks for a reasonable length of time.

3. A street car had reached the terminus of its route, and had stopped on a downgrade for the passengers to alight. A rule of the railroad required the motorman to stand at his post until the conductor had finished seeing to the alighting of the passengers, and had come to the front of the car, after which it was the motorman's duty to alight, lift the fender, and strap it to the dashboard. Plaintiff was the last of a number of passengers to leave the car, and proceeded along the side of the car to its front, and started to cross the track, where she tumbled upon the fender and was injured. But a very short time had elapsed between the accident and the stopping of the car, and there was no necessity for plaintiff's turning immediately in front of the car. The accident occurred in the nighttime, but it was not absolutely dark. Held, that defendant was not negligent in permitting the fender to remain down as long as it did, although the motorman might have immediately lifted it with a hook when the car came to a stop.—(Poland vs. United Traction Co., 95 N. Y. Supplement, 498.)

NEW YORK.—Street Railroads—Collision with Traveler—Paramount Rights in Street—Crossing Cul-De-Sac—Instructions—Appeal—Harmless Error—Refusal of Request to Charge.

1. In an action against a street railroad for injury to a traveler in a collision with a street car at a point where the track passes an intersecting street, which is at that place a cul-de-sac, a request to charge that the car had a paramount right on the track, and that the place was not a street crossing, should have been granted, leaving it to plaintiff's counsel to request a proper instruction defining the manner in which the right must be exercised.

2. In an action against a street railroad for injuries to a traveler in a collision with a car, error in refusing to charge that a street railroad has a paramount right of way in a street when its track passes an intersecting street which is at that point a cul-de-sac, is not cured by an instruction that the motorman, though seeing the traveler at the distance of half a block from the track, was not bound to bring his car to a stop, but had a right to believe that the traveler would not attempt to drive across in front of the car.—(Rutz vs. New York City Ry. Co., 95 N. Y. Supplement, 345.)

NEW YORK.—Master and Servant—Death of Employee—Assumption of Risk.

An employee was killed while attempting to move a street car into a car house. The car came to a stop on the curve leading into the house, and the employee directed that leaders should be attached to the car platform, and gave instructions to go ahead. The car did not move. He then walked into the space between the car and the wall of the barn, when the car moved and crushed him. He knew the situation and acted in view of that knowledge. Held, that he assumed the risk as a matter of law, precluding a recovery for his death.—(Laffan vs. Metropolitan St. Ry. Co., 95 N. Y. Supplement, 705.)

NEW YORK.—Street Railroads—Vehicles—Drivers—Injuries—Contributory Negligence.

Where, the street car which struck plaintiff's truck was compelled to cover a distance of over 200 feet, embracing two street crossings, while plaintiff's truck was traveling a distance of not more than 50 to 70 ft. in crossing obliquely over the tracks in the daytime, and plaintiff testified that the speed of the car increased while he was on the easterly track, and that he used his whip to get clear, and succeeded in getting all but the hind wheel of his truck off the rack when the collision occurred, he was not guilty of contributory negligence as a matter of law.—(Mattes vs. New York City Ry. Co., 95 N. Y. Supplement, 596.)

NEW YORK.—Carriers—Injury to Passenger—Negligence—Evidence.

Evidence, in an action for injury received by a passenger, that as he walked toward the door the train came to a sudden stop and he was thrown down, showed no actionable negligence on the carrier's part.—(Needham vs. Interborough Rapid Transit Co., 95 N. Y. Sup., 561.)

NEW YORK.—Street Railways—Collision with Team—Contributory Negligence—Instructions—Damages—Cause of Injury—Evidence.

1. In an action for collision of a street car with a wagon, the driver having turned to cross in front of the car while it was standing 25 ft. away, and there being evidence that the heads of the horses had not got on the track before the car started, it was error to refuse an instruction that if it was apparent to the driver, or would have been apparent to a person of ordinary prudence, exercising ordinary care, that the car would overtake him unless its speed was slackened, it was not a prudent act for him to assert his rights and proceed, though it was the motorman's duty to slow down or stop to enable him to cross.

2. That the injuries received by horses were caused by collision of a street car with the wagon to which they were attached is not proved by testimony of the owner and driver that after the accident the horses limped; their condition prior to and at the time of the accident not being shown.—(Goodman vs. New York City Ry. Co., 95 N. Y. Sup., 544.)

NEW YORK.—Carriers—Injuries to Passengers—Negligence—Station Platform—Duty to Remove Obstructions.

1. The existence of an obstruction over which a passenger falls upon a station platform is not, in the absence of evidence or of something about the obstruction itself to indicate the length of time during which it was on the platform, or the cause of its presence there, sufficient to charge the railroad with negligence.

2. A railroad's duty toward passengers with respect to obstructions on a station platform is to use reasonable care not to permit the station to become dangerous through the presence of such obstructions after a reasonable opportunity to discover and remove them has elapsed.—(Scholtz vs. Interborough Rapid Transit Co., 95 N. Y. Sup., 557.)

NEW YORK.—Street Railroads—Collision with Vehicles.

Evidence that plaintiff's servant was driving along a street in the same direction in which a street car was traveling, and, without looking or taking any precaution, drove on the track in front of the car, did not show freedom from contributory negligence.—(Kueski vs. New York & Queens Co. Ry. Co., 95 N. Y. Sup., 650.)

NEW YORK.—Master and Servant—Injuries to Servant—Street Railroads—Proper Appliances—Assumed Risk—Evidence—Experts—Hypothetical Questions.

1. Where plaintiff, who was employed to work on an elevated railroad structure, was directed to clear snow from the ties with an iron shovel, which did not necessitate contact with nor dangerous proximity to the electrically charged third rail, defendant company was not guilty of negligence in providing plaintiff with an iron shovel, instead of a wooden one.

2. Plaintiff, having been previously employed for six months to

work on the third rail as one of the electrical repair gang, and having knowledge or means of knowledge of the danger incident to contact therewith, assumed the risk.

3. Where, in an action for injuries, plaintiff testified that particles of molten lead had gone into his eye, but the only other evidence thereof was that of plaintiff's physician, who testified that he took some particles out of the eye, but could not say whether they were lead, or iron, or dirt, it was error to permit hypothetical questions to be asked, including as their most important element the assumption that particles of molten lead had gone into plaintiff's eye.—(Smith vs. Manhattan Ry. Co., 95 N. Y. Sup., 529.)

PENNSYLVANIA.—Carriers—Passenger on Street Car—Injuries—Presumptions—Contributory Negligence—Death by Wrongful Act—Action by Wife—Defenses—Evidence—Carriers—Injury to Passenger—Evidence.

1. Where a person is unable to find room on a summer car other than on the running board, and is killed in collision with another car while riding thereon, a presumption of negligence arises against the company, and the burden is on it to rebut it.

2. In an action against a street railway company to recover for the death of a passenger killed while riding on the running board of a summer car, the court could not say as a matter of law that plaintiff's intestate was guilty of contributory negligence, though there was evidence at the time of the collision he was standing on the track by the side of the car.

3. The fact that a wife, suing for the death of her husband, had prior thereto consulted counsel as to the matter of divorce, is no defense.

4. Where, in an action for the death of plaintiff's husband, there was evidence that his earning capacity was small, it was not error to admit evidence that his father had been in the habit of assisting the wife.

5. In an action for the death of a passenger by collision between two street cars, evidence as to the effect of the collision on the other passengers is immaterial.—(Abel vs. Northampton Traction Co., 61 Atlantic Rep., 915.)

TENNESSEE.—Street Railroads—Injury to Person on Track—Question for Jury—Contributory Negligence—Question for Jury—Trial—Material Issue—Conflicting Evidence—Submission to Jury—Municipal Corporations—Ordinances—Evidence—Instructions.

1. Evidence in an action against a street railway company for injuries received by a pedestrian in a collision with a street car, held, to require the submission to the jury of the question of the company's negligence.

2. Evidence in an action against a street railway company for injuries received by a pedestrian in a collision with a street car, held, to require the submission to the jury of the question of the pedestrian's contributory negligence.

3. Where the evidence is conflicting on an issue which must necessarily enter into consideration of the controversy, and by itself or in connection with other evidence be determinative of the case, the issue must be submitted to the jury.

4. In an action against a street railway company for injuries received by a pedestrian in a collision with a car, plaintiff without objection introduced a copy of an ordinance. The ordinance was an amended ordinance and regulated the speed of cars within the city. Held that, although it would have been more formal to have introduced the original ordinance, there was no reversible error in admitting the amended ordinance only.

5. Where, in an action against a street railway company for injuries received by a pedestrian in a collision with a car, the evidence showed that plaintiff was attempting to cross a street, that she looked in both directions and saw cars coming on both tracks, that she started diagonally across the street, that before reaching one of the tracks she was intercepted by a wagon, and that as she passed behind it and was about to enter on the other track a car struck her before she could cross the track, the refusal to charge that it was the plaintiff's duty to not only look before attempting to cross the track, but also after she had been intercepted by the wagon, and that if her failure to so look was the direct cause of the injury there could be no recovery, though the company was negligent, was reversible error, though the court charged that, if plaintiff failed to exercise ordinary care, and her negligence was the proximate cause of injury, there could be no recovery.—(Knoxville Traction Co. vs. Brown, et ux., 89 S. W. Rep., 319.)

TEXAS.—Railroads—Accidents to Trains—Collision with Street Car—Statutory Signals—Lookout—Negligence Per Se—Concurring Negligence—Joint Liability—Proximate Cause—Ap-

peal—Assignments of Error—Sufficiency—Trial—Instructions—Assumption of Facts—Railroads—Accidents to Trains—Collision with Street Car—Statutory Signals—Failure to Give—Appeal—Invited Error—Crossing Railroad Tracks—City Ordinance—Construction—Injury to Passenger—Pleading—Instructions—Issues—Trial—Instructions—Assumption of Facts—Burden of Proof—Instructions—Excessiveness.

1. In an action for injuries to a street car passenger in jumping from the car to escape an imminent collision with a railroad train, the failure of the railroad company to ring a bell while approaching the crossing, as required by Sayles' Ann. Civ. St. 1897, art. 4507, and to keep a proper lookout at the crossing as required by a city ordinance, constituted negligence per se.

2. Where, in an action for injuries to a passenger of a street car in jumping therefrom to escape a threatened collision with a railroad train, there was evidence that, if the railroad company had kept a proper lookout, the street car would have been seen and the train would not have rapidly approached the crossing in the manner it did, and that, if it had given a proper statutory signal of its approach, the car would not have gone on the crossing, and also that, if the street car had stopped as required by a city ordinance before attempting to cross the railroad, the approach of the train would not have alarmed plaintiff, the railroad and street car companies were each guilty of concurring negligence which caused the accident, and were each, therefore, liable.

3. Where an accident occurred from two causes, both due to negligence of different defendants, but together an efficient cause, such concurring cause was a proximate cause, and the negligence of one furnished no excuse for the negligence of the other.

4. Assignments of error submitted as propositions that instructions objected to were "erroneous and misleading"; "that such charge * * * was further erroneous, misleading, and confusing to the jury, when considered in connection" with other specified paragraphs of the main charge; "that the court erred in a specified paragraph of its main charge, in that said charge was erroneous, misleading, and confusing"; and "that the charge permitted a double recovery"—were fatally defective for failure to allege the specific error in the charge of which complaint was made.

5. In an action for injuries to a street car passenger while jumping from the car to escape a threatened collision with a railroad train, an instruction that it was the duty of the railroad company to use ordinary care to prevent injury to plaintiff, and defining ordinary care, was not objectionable as assuming that the railroad company injured plaintiff and that it was guilty of negligence.

6. Where plaintiff was injured in jumping from a street car to escape a threatened collision with a railroad train, and the railroad company failed to ring the bell as the train approached the crossing, as required by Sayles' Ann. Civ. St. 1897, art. 4507, such company was not relieved from liability because the train was actually stopped before collision after causing the injury.

7. A party cannot allege error in an instruction given which was substantially the same as an instruction requested by it.

8. A city ordinance providing that no street car shall stop on any street crossing or on any railroad track, but shall come to a full stop before crossing any railroad track, is sufficiently comprehensive to include a railroad track, whether main line or spur.

9. Where, in an action for injuries to a passenger in jumping from a street car to escape a threatened collision with a railroad train, the petition charged that the street car company failed to take any precaution whatever to indicate the presence or coming of the railroad train, the court was justified under such allegation in presenting the issue as to whether the street car company failed to keep a reasonably sufficient lookout for the train.

10. The court in such action did not assume that plaintiff had reasonable ground for leaving the car while on the track by submitting the question whether there was reasonable ground for leaving the car after it had moved off the railroad track.

11. The court did not place the burden of showing that the failure to stop the car was not the proximate cause of the disaster by instructing that, if the jury found that the failure to stop the car was not the proximate cause of the injury, then the street car company would not be liable.

12. In an action for injuries to a passenger, an instruction that the jury should allow plaintiff such damages as would fairly compensate her for her injuries was proper.

13. Where plaintiff prior to the injury was 34 years of age, strong, healthy, and robust, weighing 175 lbs., and after the injury caused by defendants' negligence was a nervous wreck, suffering from insomnia, pleurisy, neuralgia, and irregular men-

struation, a verdict for \$16,000, reduced to \$14,000, was not so excessive as to require reversal.—(Galveston, H. & S. A. Ry. Co. et al. vs. Vollrath, 89 S. W. Rep., 279.)

TEXAS.—Carriers—Street Railroads—Injuries to Passengers Alighting—Warning—Question for Jury—Costs—Preparation of Transcript.

1. Where, in an action for injuries to a female passenger while alighting from a street car, negligence was charged in that the car platform and steps were wet, muddy, and slippery, rendering them dangerous for ladies unassisted to alight, whether the carrier owed plaintiff a duty either to warn or assist her was for the jury.

2. Where a statement of facts prepared by plaintiff was claimed to be so defective in many particulars that defendant could not agree to it, and defendant thereupon obtained an order directing the official stenographer to prepare and file a transcript of the testimony, as authorized by Gen. Laws 1903, p. 85, the expense thereof was payable by defendant, and was not taxable as costs in the case.—(Flory vs. San Antonio Traction Co., 89 S. W. Rep., 278.)

TEXAS.—Damages—Personal Injuries—Fright Resulting in Injury—Railroads—Injury to Trespassers—Discovered Peril.

1. Where fright is caused to one by the wrongful act or omission of another, and physical injury results therefrom, and such injury is the proximate consequence of the act or omission, and should have been foreseen under the circumstances, a cause of action exists therefor.

2. A railroad is liable for physical injury resulting from fright, caused by the wrongful act or omission of its servants in failing to stop a train while crossing a bridge on which the injured person was walking, and from which she had barely time to escape before the train reached her, where such servants saw and knew the dangerous situation of the injured person, and knew or should have known her fright and the injury which might result therefrom.—(Hendrix vs. Texas & P. Ry. Co., 89 S. W. Rep., 461.)

TEXAS.—Carriers—Who are Passengers—Obligation of Carrier—Negligence—Personal Injury—Plaintiff's Prior Physical Condition—Damages—Personal Injuries—Evidence—Aggravation of Existing Physical Condition.

1. A person in the act of getting on a street car, and before he has got entirely in the car, is a passenger, imposing on the servants in charge of the car the duty of exercising such a degree of foresight as to possible dangers and such a degree of prudence in guarding against them as would be used by very prudent and competent persons under similar circumstances.

2. Though plaintiff, in an action for personal injury negligently inflicted, alleged in her petition that she was, prior to the injury, sound and healthy, she was not required, in order to recover for the injury sustained, to prove the allegation.

3. The evidence, in an action for personal injury negligently inflicted, that plaintiff's general physical condition at the time of the trial was no worse than it had been for several years previous to the injury, and that, instead of having been, previous to the injury, a healthy person, as alleged, plaintiff had been sickly and incapable of physical labor, does not preclude recovery for such physical and mental suffering, incapacity to attend to her affairs, etc., as alleged, as were immediately consequent on the injury, and the direct result thereof, together with expenses incurred for medical attendance on account thereof.

4. In an action for personal injury negligently inflicted by another, the petition alleged that before the injury plaintiff was healthy, capable of attending to her domestic affairs, and that because of the injury she was unable to do so. The evidence showed that she was, in fact, physically unsound before the accident. Held, that she was entitled to damages for such injury as aggravated a previously diseased physical condition.—(Green vs. Houston Electric Co., 89 S. W. Rep., 442.)

WEST VIRGINIA.—Carriers—Injury to Passenger Alighting from Street Car—Instructions.

In an action for injuries sustained by a passenger while attempting to alight from a street car, it is error to give to the jury an instruction, in which, after telling them that, under the law, the defendant is held liable for the slightest negligence, they are instructed that the defendant must "repel by satisfactory proof every imputation of such negligence," when the facts are not such as to create a presumption of negligence against the defendant and cast the burden upon it to disprove negligence of the plaintiff is involved.—(Blake vs. Camden InterState Ry. Co., 50 S. E. Rep., 408.)

FINANCIAL INTELLIGENCE

WALL STREET, April 18, 1906.

The Money Market

There has been a decided change for the better in the monetary situation during the past week, rates for all classes of accommodations working down to a normal level. The improvement was due largely to the relief measures adopted by the Secretary of the Treasury, which not only places at the immediate disposal of the national banks the gold engaged by them abroad for importation, but also places the institutions in a better position to obtain gold in the foreign markets for shipment to this side. Heretofore the importers of the precious metal had to figure the loss of interest while the gold was in transit, but under the new plan this important item is eliminated from the cost of importation. The amount of gold engaged during the past week is estimated at about \$15,000,000, including the \$6,100,000 announced at the close of last week, and further substantial engagements are looked for. Up to the present time a very small portion of the gold has been received, but the treasury department has already paid out about \$13,100,000 on account of these engagements. Another important factor has been the heavy gain in cash by the local institutions. During the week ending April 13, the receipts of currency from the interior were about \$4,500,000 greater than in the preceding week, while the shipments by the New York City banks were about \$5,500,000 smaller. This substantial gain in cash was reflected in the bank statement published last Saturday, which showed a surplus of \$4,772,500 against a deficit in the previous week of \$2,560,625. The surplus in the corresponding week of 1905 was \$9,352,400, as compared with \$27,304,600 in 1904, \$6,007,650 in 1903, \$6,578,650 in 1902, \$14,922,100 in 1901, and \$10,950,275 in 1900. Foreign exchange has been irregular. Following the easier tendency in money rates, sterling advanced sharply, but at the close the market again yielded to heavy offerings of finance and other classes of bills. European markets have been quiet and practically unchanged. Official announcement of the new Russian loan will be made shortly. Money on call has loaned at 12 per cent and at 3 per cent, the average rate for the week being about 6 per cent. Time money has ruled decidedly easier; thirty-day accommodations, which commanded about 8 per cent a week ago, were obtainable at $5\frac{1}{2}$ per cent, while sixty and ninety-day funds, which were in demand last week at $6\frac{1}{2}$ and 7 per cent, practically went begging at 5 per cent. For the longer periods money was freely offered at 5 per cent.

The Stock Market

The developments in the financial markets during the past week were of a revolutionary character, and resulted in a radical change in the tone and character of both the money and stock markets. At the close of last week, money was scarce and rates were high, with sterling exchange weak, and all hope of an improvement dependent upon gold imports. The announcement that the Secretary of the Treasury had agreed to lend to national banks the full amount of the gold engaged by them for import, such loans to be secured by the deposit of approved securities, and to be repaid upon the arrival of the gold in this country, was followed by liberal offerings of funds by the banks and private bankers, and resulted in a break in the call-loan rate from 25 per cent to 3 per cent, time money also working down to a normal level. The relaxation in money rates alarmed the shorts in the stock markets into covering, and prices advanced rapidly under rather aggressive buying. The leading feature of the upward movement was Amalgamated Copper, which made a gain of about 8 points, on reports that the directors at their meeting this week will place the stock on a 7 per cent dividend basis. The steel stocks made good gains, and the shares of the anthracite coal roads advanced sharply, with heavy buying of Pennsylvania, although the coal labor situation was not encouraging. The stock market has been and is expected to be influenced largely by the money market, and the latter is not in a sufficiently strong position to warrant a revival of bullish activity upon a broad scale. Nevertheless, the outlook is bright, and all indications point to higher prices.

The local traction shares have acted remarkably well. Following the break in Brooklyn Rapid Transit to below 85, there was aggressive buying of the stock, which lifted the price up to 89, and while part of the buying was attributed to the pool, not a little of it was influenced by the favorable position of the company, its continued large earnings and the assurance of the largest summer's business in the history of the company. The Metropolitan issues have been firm, as the business of the company will improve with the milder weather.

Philadelphia

Decided strength characterized the market for the local traction shares during the past week, prices in nearly every instance ruling somewhat above those prevailing at the close of last week. The volume of business, however, was not large, owing to the observance of the Easter holidays. Philadelphia Rapid Transit was about the only issue to display any degree of activity, upwards of 5000 shares changing hands at from $27\frac{1}{2}$ to $28\frac{3}{4}$, a net gain for the week of $1\frac{1}{4}$ points. Union Traction developed pronounced strength, the price rising $1\frac{1}{4}$ points to $63\frac{1}{2}$ on the purchase of about 600 shares. Philadelphia Company's issues were extremely quiet, but prices for both the free stock and the receipts held firm. Of the first named less than 500 shares sold at 50, while upwards of 2000 shares of the deposited stock changed hands at from $53\frac{3}{4}$ to $54\frac{1}{4}$. Sales of the preferred stock were made at $49\frac{1}{2}$. Philadelphia Traction was fractionally higher, a few odd lots changing hands at 99 and $99\frac{1}{2}$. Other transactions included American Railways at 53 and $53\frac{1}{4}$, Fort Worth & Wabash Valley Traction at 28, Consolidated Traction of New Jersey at $80\frac{1}{2}$ and $80\frac{1}{4}$, United Traction of Pittsburg preferred at 50, Fairmount Park Transportation at $17\frac{3}{4}$, and United Companies of New Jersey at 262.

Chicago

Less interest was manifest in the street railway issues at Chicago. Not a single transaction was reported in Chicago City Railway, while in the stocks of the other surface roads trading was confined largely to odd lots. West Chicago, which closed at 23 last week, advanced to 26, while the consolidated bonds rose to $64\frac{1}{2}$. Union Traction preferred was firmer at 18, and North Chicago brought 31. Chicago & Oak Park Elevated brought $6\frac{3}{4}$, and the preferred sold at 22. South Side Elevated lost a point to 93. Other transactions included Northwestern Elevated common at $25\frac{3}{8}$ and $25\frac{1}{2}$, the preferred at $60\frac{1}{4}$, Metropolitan Elevated common at $26\frac{1}{2}$, and the preferred at 68 and $68\frac{3}{8}$.

Baltimore

Trading in the tractions at Baltimore was very quiet and without noteworthy feature. United Railway 4 per cent bonds ruled practically unchanged, with transactions at $92\frac{1}{2}$ and $92\frac{3}{8}$. The free incomes sold to the extent of about \$60,000, at from $73\frac{3}{4}$ to 73, and back again to $73\frac{1}{2}$, while one \$1,000 certificate sold at 73. Norfolk Railway & Light 5s sold at 102 for \$14,000, and \$1,000 North Baltimore Railway 5 per cent bond brought 120. The Boston market was dull and irregular. Boston Elevated, after declining from $156\frac{3}{4}$ to 155, recovered to 156. Boston & Worcester common sold at $39\frac{1}{2}$ to 39, and back to $39\frac{1}{4}$, while the preferred changed hands at 89 for small amounts. Massachusetts Electric common was steady, with transactions at $19\frac{1}{4}$ and 19, but the preferred dropped to $67\frac{1}{2}$ to $66\frac{1}{4}$, on sales of about 600 shares. West End common changed hands at from 99 to 100, and the preferred at $115\frac{3}{4}$ and 116. In the New York curb market, Interborough-Metropolitan issues ruled fairly active and firm. Upwards of 11,000 shares of the common changed hands at prices ranging from $52\frac{1}{8}$ to 54, while about 4000 shares of the preferred brought prices ranging from 89 to $90\frac{3}{8}$, and closing at 90. The $4\frac{1}{2}$ per cent bonds advanced from $89\frac{7}{8}$ to $91\frac{1}{8}$, but subsequently reacted, and closed at $90\frac{1}{4}$. About \$475,000 changed hands. New Orleans Railway common was weak, several hundred shares selling at $34\frac{1}{2}$ to $34\frac{3}{8}$. The $4\frac{1}{2}$ per cent bonds were steady, \$10,000 selling at 90.

Cincinnati, Newport & Covington issues had a very active week in Cincinnati. The common had an unprecedented upward move due doubtless to dividend reports. It opened the week at 53 3/8 and advanced steadily to 62 1/2, the highest price on record. The preferred opened the week at 97, and sold up to 97 1/2. Cincinnati Street Railway sold at 146 1/2 and 147. Cincinnati, Dayton & Toledo also had an upward movement, advancing from 26 3/4 to 28. A small lot of Detroit United sold at 99. Cleveland Electric made a gain from 79 to 80, and then declined fractionally. Aurora, Elgin & Chicago common sold at 33 3/8 to 34, and the preferred sold at 93 1/2. Cleveland & Southwestern sold at 15, and the 5 per cent bonds at 96 1/8. Lake Shore Electric made a fractional advance to 16 1/2.

Security Quotations

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

	April 11	April 18
American Railways	52 3/4	54
Boston Elevated	156 3/4	158
Brooklyn Rapid Transit	84 1/2	87 1/2
Chicago City	150	150
Chicago Union Traction (common)	5 7/8	6
Chicago Union Traction (preferred)	21 1/2	21 1/2
Cleveland Electric	—	81
Consolidated Traction of New Jersey	80	80
Detroit United	98 3/4	97
Interborough Rapid Transit receipts	225	—
Interborough-Metropolitan Co. (common), W. I.	52 1/4	53 1/4
Interborough-Metropolitan Co. (preferred), W. I.	88 3/8	89
Interborough-Metropolitan Co. 4 1/2s, W. I.	90 1/4	90 1/4
International Traction (common)	38	37 1/2
International Traction (preferred), 4s.	71	72
Manhattan Railway	155	155 1/2
Massachusetts Elec. Cos. (common)	19	19 1/4
Massachusetts Elec. Cos. (preferred)	67	67
Metropolitan Elevated, Chicago (common)	26 1/2	26
Metropolitan Elevated, Chicago (preferred)	68	67
Metropolitan Street	113	116 3/8
Metropolitan Securities	72	73 3/4
New Orleans Railways (common)	34	32 3/8
New Orleans Railways (preferred)	81	80
New Orleans Railways, 4 1/2s.	—	88 1/2
North American	98 1/2	100 3/8
North Jersey Street Railway	27	27
Philadelphia Company (common)	50 1/4	49 3/4
Philadelphia Rapid Transit	27	28 1/4
Philadelphia Traction	98 3/4	99
Public Service Corporation 5 per cent notes	94	94
Public Service Corporation certificates	72 1/2	72 1/2
South Side Elevated (Chicago)	—	93
Third Avenue	132	133 1/2
Twin City, Minneapolis (common)	118 1/8	119
Union Traction (Philadelphia)	62	63
West End (common)	99	99 1/2
West End (preferred)	114 1/2	115 1/2

W. I., when issued.

Metals

According to the "Iron Age," reports from the leading interests indicate that there has been a more general resumption of buying of pig iron, the orders booked during the past two weeks having increased considerably and extending over the whole field. The congestion of the rail mills is growing more serious, and is likely to have its effect on the general steel market, and indirectly upon the output of the rolling mills. The Tennessee Company has opened its books for 1907 at \$29, and has taken orders for 67,000 tons. Structural trade is quieter. The inquiries from foreign markets are heavy and pressing.

Copper continues strong at 18 1/2 to 18 3/4c. for lake, and 18 to 18 1/4 for castings. It is stated that some heavy contracts have been made at current prices.

ELECTRICITY FOR A TEXAS STEAM LINE

J. H. Hill, general manager of the Galveston, Houston & Henderson Railroad, has been directed by the board of directors of that road to investigate the substitution of electricity for steam as motive power on the line. The road runs between Galveston and Houston, a distance of 51 miles, and does a heavy passenger business. Preliminary investigation, looking to installing electric traction upon the road, has already been made, and when Mr. Hill has made his report definite action will be taken in the matter.

FRENCH STATISTICS

Official statistics, published by the French Government on Feb. 27, give the following data for the tramways and light railways in France:

LIGHT RAILWAYS	
Length on Dec. 31, 1904	6418 km, or 4011 miles
Length on Dec. 31, 1905	6880 " 4300 "
Concessions granted in 1905	340 " 212 "
TRAMWAYS FOR PASSENGERS AND MERCHANDISE	
Length on Dec. 31, 1904	4500 km, or 2812 miles
Length on Dec. 31, 1905	4808 " 3005 "
Concessions granted in 1905	588 " 367 "
TRAMWAYS FOR PASSENGERS ONLY	
Length in service at end of 1904	2006 km, or 1254 miles
Conceded in 1905	—
Length conceded to end of 1905	2321 " 1450 "

NEW ROAD OUT OF KALAMAZOO

The Grand Rapids & Kalamazoo Valley Traction Company, of Kalamazoo, Mich., the names of whose officers were mentioned in the STREET RAILWAY JOURNAL of March 31, reports that of the 50 miles of road laid out, 15 miles have already been graded, and that the work of the construction is only awaiting the purchase of the necessary materials. The negotiations are under way at the present time for securing the rails, and it is expected that the construction work will be begun in the course of the next few days. The financial arrangements are in the hands of S. A. Phillips, Betz Building, Philadelphia, Pa.

EARNINGS OF THE ILLINOIS VALLEY RAILWAY

The gross earnings of the Illinois Valley Railway for the year 1905 were about \$5,000 per mile of track. This is an excellent showing when the location of the road and the population along the route are considered. The Illinois Valley Railway operates through several small towns, the largest of which, La Salle, according to the census of 1900, had a population of only 10,588. The total population of the several towns along the line, according to the same census, was slightly above 39,000. As the road is 36.6 miles long, the population per mile of track is about 1000, and the gross earnings per capita were about \$5. This is unusually large for an outlying district, but it is partly accounted for by the fact that the western end of the road traverses a coal mining region, while other portions pass through a district where cement factories and zinc smelters are located.

REPORT OF THE GENERAL OMNIBUS COMPANY OF PARIS

The Cie Générale des Omnibus of Paris is the largest tramway and omnibus company in that city, and one of the largest street railway companies in the world. For a long time it had a monopoly of the interior transportation in the city, but there are now several smaller companies. The report for 1905 shows 250,121,235 passengers carried, a decrease of 6,248,413 as compared with the previous year. This decrease is due principally to competition of the Metropolitan Subway. The operating expenses of the different motive powers were as follows:

	Francs Per Car-km	Cents Per Car-Mile
Omnibuses	0.5621	17.99
Horse cars	0.5529	17.69
Compressed-air cars	0.4092	13.09
Serpellet steam cars	0.4912	15.72
Purrey steam cars	0.3685	11.79
Rowan steam cars	0.4824	15.46
Accumulator cars	0.5072	16.23

Other statistics for 1905 follow:

	Omnibuses	Horse Cars	Mechanical Traction
Kilometers run, total	22,925,999,120	4,123,186,831	17,639,406,910
Kilometers run per car per day	93,847	98,098	109,483
Passengers carried, total	114,557,809	24,241,733	111,321,693
Passengers per car per day	469	576	691
Passengers per trip	30	36	45
Passengers on upper deck	65,095,708	12,236,197	51,150,905
Passengers on lower deck	49,462,101	12,005,536	60,170,788
Av. r'c'ts in frs. per passenger	0.1873	0.1749	0.1634
Av. r'c'ts in frs. per car km.	0.9359	1.0283	1.0311

UNIVERSAL TRANSFER BILL IN NEW YORK

At this time, when the readjustment and unification of the subway, elevated and surface railway lines in New York is about to be perfected, through the consolidation of the New York City Railway Company and the Interborough Rapid Transit Company, the bill introduced in the Legislature which provides for universal transfers, naturally is attracting attention. The officials of both companies affected are opposed to the measure, because of the trouble that would result from any attempt on their part to meet its requirements at this time. President Vreeland, of the New York City Company, and Vice-President E. P. Bryan, of the Interborough, say that the result of giving transfers at every point would seriously cripple the service and make the conditions of travel many times as bad as they are now. President Vreeland has expressed himself as follows on the subject:

There is no doubt that the law making it compulsory to give free transfers at all points from and to the elevated, subway and surface-car systems would lead to the most serious discomforts to passengers. The operating officials of the various systems should have control of the regulation of traffic so as to afford the public a great many more advantages than are possible under the present system.

By reason of the operation of the law on rigid lines, rightly interpreted, there are thousands of passengers every day who crowd the Broadway and other main lines who could be more comfortably transported and brought with greater speed to their destinations by the use of lines less crowded. The traveling public and the truckmen crowd Broadway while other lines of travel north and south, such as Second Avenue, Eighth Avenue and Ninth Avenue, would be much more convenient.

Before it was made impossible to travel in opposite directions on the same transfer, more than 100,000 passengers a day rode from the East Side over to Broadway, then up Broadway, and then back again to the East Side. They could have gone direct by way of Second or Third Avenue. They blocked travel and brought discomfort to thousands of persons besides themselves.

The question of transfers is one of operation, and if the operating officials of the various roads were authorized to regulate the flow of traffic, the result in added comfort and quickness would, I am sure, be appreciated by the general public.

Vice-President Bryan, of the Interborough, said:

For many years the citizens of this city have been fighting for a rapid transit system which would carry passengers from the downtown district to Harlem or the Bronx quickly. If universal transfers were put into effect now the subway would be so jammed that the movement of trains would be impeded, the public would be subjected to much discomfort, and traffic in general would be seriously delayed.

The subway is now operated, in the morning and evening "rush" hours, at its full capacity, and no matter what law is passed compelling free and universal transfers, we cannot carry more passengers on the trains at those times.

In the subway the question of stairways, of platform space, and of train capacity, must be carefully considered. To crowd the platforms more than they are now would result in conditions every day such as now occur if, for any reason, an express train is delayed for ten or fifteen minutes. No matter how many persons crowded to the platform, we couldn't carry any more passengers than we carry in the "rush" hours now.

DOES IT MEAN NEW YORK CENTRAL CONTROL?

The Pennsylvania & Ohio Electric Railway, a 24-mile road, lying partially in the main route from Buffalo to Chicago, has been sold to L. A. Robinson, general passenger agent of the Pittsburg & Lake Erie Railroad, one of the New York Central lines. The daily papers of the district say the sale is the opening of a campaign on the part of the New York Central to acquire parallel electric lines across Northern Indiana and Ohio from Buffalo to Chicago, the same as has been done in New York State. While it is generally conceded by well-informed traction men in Cleveland, where the traction properties are largely owned, that the great steam system is likely to acquire these properties in time, it is not believed that this particular sale has that significance, as it is pointed out that Mr. Robinson owns Woodland Beach Park on the lake front near Ashtabula, together with the Ashtabula & Lake Shore Electric Railway, operating an electric railway from the park to Ashtabula, and he has announced that these properties are to be consolidated with the Pennsylvania & Ohio, with a view to reducing expenses; that the Pennsylvania & Ohio power station is to be enlarged and the service improved. It is hardly thought that the first mentioned improvement would be made if all the lines in the main East and West route were to be merged. On the other hand, there is considerable significance in the recent purchase of all the lines between Buffalo and Erie by Ex-Lieutenant-Governor Sheehan, of New York, who is said

to be attorney for the New York Central. Horace Andrews, of Cleveland, who has been associated with the New York Central in all its New York State traction operations, has been abroad for several months, and his associates at Cleveland say they know nothing about these latest developments in Ohio.

IMPROVEMENTS AT WILMINGTON

The Wilmington City Railway Company, of Wilmington, Del., has placed contracts for new equipment calling for an expenditure of \$400,000. The improvements to be made extend to all departments of the system. There will be an addition to the power house, on the north side of the Brandywine, at the foot of Buena Vista Street, making it two-thirds larger than at present. This work will be done by J. & T. Oliver, who are rebuilding the Southwestern line for the Interstate Railway Company. A battery of four 400-hp boilers has been ordered from the Heine Boiler Company, of Phoenixville, Pa., and two additional generators, one 800 and the other 600-kw capacity, from the General Electric Company. These generators will be direct connected to two engines, to be built by Robert Wetherill & Company, of Chester, Pa. Twenty new cars, fully equipped—ten summer cars and ten winter cars—ten to be built by the American Car & Foundry Company, at the local plant, and ten by the J. G. Brill Company, of Philadelphia, have also been ordered.

In addition to awarding the above contracts it has been decided to proceed to build, as soon as permission is given by the Street and Sewer Department, two local extensions of considerable importance.

GRATUITOUS LIFE INSURANCE TO EMPLOYEES AT COLUMBIA, S. C.

The Columbia Electric Street Railway, Light & Power Company, of Columbia, S. C., has voluntarily instituted an insurance department for its employees. The plan of insurance as announced is that the company insures each employee who has been in its service for over twelve months for \$250, payable at his death to his wife, if she is living at his death, and in case of her death, to his children, share and share alike, or in case he has no wife or children, to his estate. When employees shall have been in the service of the company for two years they will be insured for \$500, three years \$750, and four years \$1,000. "Employees" shall not include any of the following officers: President, vice-president, general manager, secretary, treasurer, auditor, clerks, bookkeepers, chief engineer, stenographer, porter or track greasers, but shall be construed to mean superintendent, car starters, motor tenders, linemen, motormen, conductors, employees of sub-station, except porter, employees of car houses, except day laborers and porters, employees of power plant, canal and steam plant, except porter and laborers; lamp trimmers, trouble man, meter readers, machinists, mechanics and the foremen of the above enumerated divisions. The term of the service shall begin with the date of the signing of this plan by the president, and the insurance shall be put in effect in accordance with the time already served by employees. Service with the Columbia Water Power Company shall be construed as service with this company. The company's records of beginning of service shall be conclusive proof of beginning of service. Suspension shall not be construed as a termination of service.

This plan may be amended at any time by the company and may be withdrawn and cancelled in the discretion of the board of directors.

In case the employee is discharged and afterwards again takes up employment with the company, or in case the employee leaves the service of the company, and is again employed, the insurance shall begin from the second date of employment and not from the first. In case an employee is discharged or voluntarily leaves the service of the company, the insurance shall cease absolutely. The insurance is a gratuity, and is not to be construed or regarded as a contract, and may be discontinued at any time.

In case of death by accident in connection with the work of the company, the insurance shall be paid only upon a full and complete release of the company by those authorized to give it for all damages, but nothing shall be paid by the company where a suit is entered for damages by the representatives of the employee.

The plan has been worked out by Edwin W. Robertson, the president, and William Elliott, Jr., vice-president and general manager of the company.

THE CANADIAN PACIFIC AND ELECTRICITY

A report from Ottawa says it is understood that the Canadian Pacific Company has decided to await the outcome of experiments by the New York Central and New York, New Haven & Hartford Railway Companies before taking steps for the electrification of any part of its system. The line from Montreal to Quebec will in all probability witness the first installation. All the electric power necessary can be obtained from Shawinigan Falls.

REPORT OF UNITED RAILWAYS COMPANY OF ST. LOUIS FOR YEAR

The annual report of the United Railways Company for the year ended Dec. 31, 1905, has just been issued. Besides the statements covering the earnings of last year, which have been published, it contains comparative tables of business and traffic for each year since 1900. The earnings from operation and other income increased from \$4,469,207 in 1900 to \$8,460,016, the operating expenses, taxes and depreciation from \$3,646,487 in 1900 to \$5,318,368 in 1905, and the surplus from \$822,719 in 1900 to \$3,141,647 in 1905. There was a deficit of \$1,694,393.02 in 1900, and a surplus of \$104,571.74 in 1905. The number of revenue passengers increased from 90,617,379 in 1900 to 170,009,691 in 1905. The number of transfers and passes increased from 36,195,654 in 1900 to 74,231,470 in 1905. The total number of passengers increased from 126,813,633 in 1900 to 244,241,161 in 1905. The general statement follows:

CONDENSED STATEMENT SUMMARY OF BUSINESS

	1905	†1904
Earnings from operation and other income.....	\$8,460,016.01	\$9,977,564.17
*Operating expenses, taxes and depreciation....	5,318,368.80	5,751,066.65
Surplus over operating expenses, taxes and depreciation	\$3,141,647.21	\$4,226,497.52
Deductions: Interest on funded debt, miscellaneous interest and organization expenses..	2,387,915.47	2,446,292.36
Net income	\$753,731.74	\$1,780,205.16
Dividends on preferred stock	649,160.00	598,022.50
Surplus	\$104,571.74	\$1,182,182.66

TRAFFIC STATISTICS

Revenue Passengers	170,009,691	201,316,532
Transfers and passes	74,231,470	83,974,502
Total passengers	244,241,161	285,291,034
Percentage of passengers using transfers.....	41.48	39.64
Average Passenger Earnings:		
Per revenue passengers	4.90	4.89
Per total passengers	3.41	3.46
Milrage	30,453,085	37,910,484

GENERAL BALANCE SHEET (CONDENSED)

Dec. 31, 1905

ASSETS

Property and plant	\$89,701,083.23
Securities in Treasury:	
Preferred capital stock of the United Railway Company of St. Louis (70,000 shares), held in trust, for the use and benefit of this company	\$7,000,000.00
General first-mortgage 4 per cent gold bonds of United Railways Co., of St. Louis....	277,000.00
Louisiana Purchase Exposition stock (par value, \$210,000.00)	\$2,100.00
Current Assets:	
Cash in bank, trust companies and depositories	\$886,100.24
Cash on deposit to pay bond coupons.....	582,000.00
Cash on deposit to pay matured underlying liens	8,500.00
Cash on deposit for employees' savings.....	8,195.00
Bills receivable	71,506.48
United States—Post Office Department.....	8,246.30
City of St. Louis	2,557.33
Bond and stock scrip	958.95
Open accounts	708,528.49

* Depreciation for 1905, \$421,752.39—none charged in former years.

† World's Fair year.

Insurance premiums and water license pre-paid	39,676.76
Material and supplies	268,155.80
Total	\$2,584,425.35
Total	\$99,564,608.58

LIABILITIES

Capital Stock:	
Preferred shares	\$20,000,000.00
Less—Reserved for acquisition of capital stock of constituent companies not purchased	16,800.00
Common shares	\$25,000,000.00
Less—Reserved for acquisition of capital stock of constituent companies not purchased	86,200.00
Total capital stock issued.....	\$44,897,000.00
Total funded debt outstanding.....	51,980,000.00
Current Liabilities:	
Audited vouchers and pay roll payable in Jan.	\$270,794.69
Bond coupons matured—not presented.....	751,350.00
Underlying liens matured—not presented.....	8,500.00
Bills payable	505,000.00
Employees' savings deposits.....	8,195.00
Outstanding tickets	22,093.97
Unclaimed wages	3,792.50
Employees' badge deposits	2,786.65
Accrued Liabilities:	
Taxes (not due)	\$37,291.65
Interest on funded debt (not due)	210,816.66
Dividend on preferred stock, payable Jan. 10, 1906.....	162,290.00
Miscellaneous	3,609.22
Reserve Funds:	
Depreciation reserve	\$214,560.05
Injury and damage reserve.....	196,877.97
Fire insurance reserve.....	19,796.68
Legal expense reserve	20,262.33
Profit and Loss:	
Surplus, Dec. 31, 1904.....	\$138,620.04
Adjustments	6,399.43
Surplus	145,019.47
Profit from year's operation.....	104,571.74
Total	\$99,564,608.58

President John I. Beggs, of the company, said in presenting the report:

"There was expended during the year 1905, for betterments and additions to the property of the company (not properly chargeable to operation or current repairs and renewals), the net amount of \$335,494.61, as shown by the statement embodied in this report. This amount will have to be provided for at some time in the future by a sale of some of the preferred stock of the company, \$7,000,000 of which is in its treasury available for betterments or the acquisition of additional property.

"During the year a reserve account was created, which it is intended steadily to increase, to provide for expenditures on account of injuries and damages, 6 per cent of the gross earnings being carried to this account, out of which all payments and expenses on account of injuries and damages are paid. This fund at the end of the year (as will be seen by the balance sheet) amounted to \$196,877.97, and in order that it may be more than a bookkeeping account, there was placed to the credit of this fund \$250,000 of the 4 per cent gold bonds of the company received from the trustee under the mortgage upon the retirement of the Jefferson Avenue underlying bonds. The interest received from these bonds will be added to the fund.

"There was likewise created during the year a fire insurance reserve account, which it is intended gradually to increase to such an amount as will ultimately justify the company in carrying its own insurance, a certain percentage of the gross earnings being carried to the credit of fire insurance reserve, to which is charged all fire insurance premiums and losses paid. The balance to the credit of this account at the end of the year amounted to \$19,796.68. There was placed to the credit of this fund \$27,000 of the

first general mortgage 4 per cent bonds (part of those received upon the retirement of the Jefferson Avenue bonds), the interest on which, together with the interest on any other investments for the fund, to be added to it from time to time as received.

"During the year the policy was established of carrying to a depreciation reserve account 5 per cent of the gross earnings of the company, to provide for extraordinary and uncurrent repairs and renewals, not properly chargeable to betterments. The amount carried to the credit of this account for the year was \$421,752.39, of which \$206,192.34 was expended, leaving a balance of \$214,560.05 at the end of the year to the credit of the account.

"The company has heretofore labored under the disadvantage of having its woodworking repair shop located at a distance of about 3 miles from the machine and paint shops; therefore, plans have been perfected and contracts entered into for the construction of a commodious and comprehensive woodworking and paint shop adjacent to our machine shop on the east, the cost of which, including grading, construction and equipment will be about \$160,000.

"It is expected that these shops will be ready for occupancy about the middle of the coming year, and that considerable saving will be effected, and the work of the company facilitated by having the principal shops of the company grouped together at Park and Vandeventer Avenues.

"The company is lacking in buildings in which properly to house and care for its rolling stock, but before constructing additional car houses, we deem it advisable to consider carefully the advisability of obtaining locations for car houses much farther removed from the center of the city, in order to save the large amount of dead mileage now necessary in getting cars back and forth from the ends of their runs to their housing quarters. This matter should be given careful consideration during the ensuing year.

"No new passenger equipment has been purchased during the past year, and it is not likely that any will be added during the ensuing year, the 450 cars purchased to take care of the abnormal World's Fair business, together with the equipment previously owned by the company, being deemed sufficient to take care of the business during the years 1905 and 1906. All of the company's equipment has been put in better and more slightly condition than ever before.

"It is the purpose of the present management, when the new shops are completed, to undertake the building of our own cars, the new shops having been designed with that end in view, the intention being to turn out about two new cars per week to take care of the equipment as it wears out and becomes obsolete, and likewise to provide for the growth of the business. It is our belief that we can save money in the cost of equipment and at the same time have our standard better maintained and better construction and finish assured at all times.

"During the year the company has taken steps to establish a hospital for the care of our sick or injured employees, and we likewise intend to establish a recreation hall in the large dwelling house acquired with the land purchased on Grand Avenue, between Park and Vista Avenues. We are likewise rendering some assistance to worthy employees who are overtaken with misfortune to save them from the clutches of "loan sharks."

STANDING COMMITTEES OF THE AMERICAN STREET & INTERURBAN RAILWAY ASSOCIATION

As already announced, the American Street and Interurban Railway Association has drawn up an extensive scheme of committees for handling the work of the association. The committees on membership, standardization and car wiring have already been mentioned in these columns. The following committees are also announced by the secretary:

Committee on Papers and Topics.—Richard McCulloch, chairman, United Railways Company of St. Louis, St. Louis, Mo.; Theodore Stebbins, expert, National Civic Federation, Columbus, Ohio; E. G. Connette, Worcester Consolidated Street Railway Company, Worcester, Mass.; W. B. Brockway, Nashville Railway & Light Company, New York, N. Y.; J. S. Doyle, Interborough Rapid Transit Company, New York, N. Y.; S. L. Rhoades, Philadelphia Rapid Transit Company, Philadelphia, Pa.

Committee on Insurance.—H. J. Davis, chairman, Cleveland Electric Railway Company, Cleveland Ohio; R. B. Stearns, Northwestern Elevated Railroad Company, Chicago, Ill.; T. C. Penington, 4012 Drexel Boulevard, Chicago, Ill.

Committee on Compensation for Carrying Mail.—John I. Beggs, chairman, Milwaukee Electric Railway & Light Company,

Milwaukee, Wis.; G. T. Rogers, Binghamton Railway Company, Binghamton, N. Y.; P. F. Sullivan, Boston & Northern Street Railway Company, Boston, Mass.

Committee on Promotion of Traffic.—W. E. Harrington, chairman, J. G. White & Company, New York City; Howard F. Grant, Seattle Electric Company, Seattle, Wash.; H. E. Reynolds, Boston & Northern Street Railway Company, Boston, Mass.

Committee on Public Relations.—John B. Parsons, chairman, Philadelphia Rapid Transit Company, Philadelphia, Pa.; H. A. Robinson, New York City Railway Company, New York City; W. Kesley Schoepf, Cincinnati Traction Company, Cincinnati, Ohio; F. H. Dewey, Worcester Consolidated Street Railway Company, Worcester, Mass.

Committee on Municipal Ownership.—C. D. Wyman, chairman, Stone & Webster, Boston, Mass.; John A. Beeler, Denver City Tramway Company, Denver, Col.; George F. Chapman, United Railways of San Francisco, San Francisco, Cal.; H. M. Sloan, manager, Calumet Electric Street Railway Company, Chicago, Ill.; J. J. Stanley, Cleveland Electric Railway Company, Cleveland, Ohio.

Committee on Standard Rules.—E. G. Connette, chairman, Worcester Consolidated Street Railway Company, Worcester, Mass.; Richard McCulloch, United Railways Company of St. Louis, Mo.; E. C. Faber, general manager, Aurora, Elgin & Chicago Railway Company, Wheaton, Ill.

STANDING COMMITTEES OF THE AMERICAN STREET & INTERURBAN RAILWAY ENGINEERING ASSOCIATION

The names of the gentlemen composing the committee on standardization of the American Street and Interurban Railway Engineering Association were published in the STREET RAILWAY JOURNAL for April 7. Since that date President Adams has announced the composition of other standing committees, as follows:

CONTROLLING APPARATUS

J. S. Doyle, superintendent of car equipment, Interborough Rapid Transit Company, New York.

Hugh Hazelton, electrical engineer, the Hudson Companies, New York.

John Lindall, superintendent of motive power and machinery, Boston Elevated Railway Company, Boston.

MAINTENANCE AND INSPECTION OF ELECTRICAL EQUIPMENT

William Pestell, general manager, Worcester Steel Foundry Company, Worcester, Mass.

J. S. Doyle, superintendent of car equipment, Interborough Rapid Transit Company, New York.

W. D. Wright, superintendent of equipment, the Rhode Island Company, Providence, R. I.

MAINTENANCE OF WAY

F. G. Simmons, superintendent of construction and maintenance of way, the Milwaukee Electric Railway & Light Company, Milwaukee, Wis.

W. B. Reed, formerly engineer of way and buildings, New York City Railway Company, New York.

R. L. Crump, engineer, Ford, Bacon & Davis, Memphis, Tenn.

In addition to these committees the association has a standing committee on shop records and accounts. This is a joint committee, two members of which are appointed by the Accountants' Association and two members by the Engineering Association. No work has been done by this committee since the St. Louis convention, in 1904, at which time an excellent report was presented with splendid results. As both associations have so much other work on hand for this year, no report will be presented at Columbus. The chairman for the representatives of the Engineering Association is H. H. Adams, superintendent of shops, the United Railways & Electric Company, Baltimore, Md.

Besides the committees mentioned above the Engineering Association is represented on three committees of the American Street and Interurban Railway Association as follows:

President Adams, ex-officio, is a member of the executive committee.

R. B. Stearns, superintendent of the Northwestern Elevated Railways Company, of Chicago, is the representative appointed by the Engineering Association to serve on the insurance committee.

J. S. Doyle, superintendent of car equipment of the Interborough Rapid Transit Company, of New York, is the representative of the Engineering Association on the committee on papers and topics.

ANNUAL REPORT OF THE NEW ORLEANS RAILWAY & LIGHT COMPANY FOR 1905

At the annual meeting of the stockholders of the New Orleans Railway & Light Company, held Monday, April 9, the following directors were elected: E. C. Foster, R. M. Walmsley, Jos. H. DeGrange, W. R. Stauffer, Maurice Stern, T. H. McCarthy, Albert Baldwin, Hugh McCloskey, Geo. A. Hero, A. Brittin, Frank B. Hayne, Wm. Adler, Pearl Wright, of New Orleans; John W. Barr, Jr., Louisville, Ky.; A. M. Young, New York. The report gives the figures of earnings and expenses, etc., for the year, from Jan. 1 to Dec. 31, but that period from Jan. 1 to June 30, for the underlying companies, covers the period when the company was in the hands of the receiver, the figures being given for a year for comparative purposes. President Foster reports:

INCOME

	1905	1904
Passenger earnings	\$3,291,960	\$3,071,929
Electric light and gas earnings.....	1,705,807	1,541,575
Miscellaneous	95,941	60,839
Total earnings	\$5,093,709	\$4,674,344

EXPENSES

Operating expenses, railroad department	\$1,901,084	\$1,753,720
Operating expenses, electric light and gas departments	770,357	744,802
Total operating all departments.....	\$2,671,460	\$2,498,522
Net earnings from operation.....	2,422,249	2,175,821
Interest on funded debt, taxes and miscellaneous	1,784,226	2,149,840
Surplus available for dividends.....	\$638,023	\$25,980
Dividend on preferred stock.....	125,000
Surplus	\$513,023	\$25,980
Percentage total operating to total earnings	52.2	53.4

STATISTICAL STATEMENT

RAILROAD DEPARTMENT

Total miles single track.....	52.35
Total miles double track.....	63.33
Total miles special track.....	11.91
Total miles all track reduced to single.....	190.92
Total miles of street and right of way occupied by tracks, not including 11.91 miles of sidings.....	115.78
Gross passenger earnings per mile of single track...	\$17,242.62
Gross passenger earnings.....	\$3,291,960.00
Revenue passengers carried.....	65,021,214
Transfers redeemed	6,641,193
Revenue mileage	16,753,874
Eighteen horse cars.....	102,156
	99,897

In presenting the report President E. C. Foster, of the company, said:

"The New Orleans Railway & Light Company was organized under the laws of Louisiana, June 12, 1905, with a capital stock fixed at thirty million (\$30,000,000) dollars, divided into two (2) classes of issue, of which \$10,000,000 is non-cumulative 5 per cent preferred stock, \$20,000,000 is common stock.

"The company has a bonded indebtedness of \$30,000,000—of general 4½ per cent gold mortgage bonds, out of which there is held in escrow an amount equivalent to the outstanding bonds of the underlying companies amounting to \$12,806,000—at this writing.

"On July 16, 1905, the company acquired by purchase at receivers' sale, the properties owned, leased and controlled by the New Orleans Railways Company.

"The fiscal year covers the period from Jan. 1 to Dec. 31. The company therefore had a corporate existence of but five (5) months and sixteen (16) days; say, from July 16 to Dec. 31, 1905, and the New Orleans Railways Company from Jan. 1 to July 16, 1905, a period of six (6) months and fifteen (15) days. The

operations of the following acquired companies by the New Orleans Railway & Light Company, therefore, cover a period of six (6) months from July 1 to Dec. 31, 1905:

"New Orleans & Carrollton Railroad, Light & Power Company.

"St. Charles Street Railroad Company.

"Orleans Railroad Company.

"New Orleans & Pontchartrain Railroad Company.

"New Orleans Lighting Company, lessee

"For comparative purposes only, we give the earnings of these properties from Jan. 1 to Dec. 31, also the operating expenses, fixed charges and taxes and the net earnings, as compared with the corresponding period of one year ago, it being fully understood that the period from Jan. 1 to June 30, for these underlying companies enumerated above, covers the period during which the New Orleans Railways Company was in the hands of receivers. The figures are given for comparative purposes only:

	1905	1904
The gross earnings for that period were	\$5,093,709	\$4,674,344
The operating expenses.....	2,671,460	2,498,522
The fixed charges and taxes.....	1,784,226	2,149,840
Leaving a surplus for that period of..	\$638,023	\$25,980

"During the past three (3) years there has been expended on the property for betterments and improvements the sum of \$3,653,302.05. These improvements consist of:

New Orleans & Pontchartrain Railroad Company....	\$85,679
Real estate and other additions to railroad property..	188,957
Electric cars	390,967
New power houses	1,603,252
Betterment and reconstruction of tracks.....	431,008
Reconstruction of overhead lines.....	16,491
New tracks	45,978
Additions to electric light properties.....	255,042
Arc lamps, meters, transformers and appliances.....	147,475
New municipal lighting system.....	108,244
Addition to gas properties.....	179,990
New mains and services.....	200,212
Total	\$3,653,302

"The construction and betterment work in prospect is: The completion of the main power station, the completion of the addition to the Claiborne power station, the completion of the distributing system for the electric light and power department, the extension of tracks on St. Claude Street, the Levee & Barracks line, rehabilitating of tracks, the carrying on of the work of the extension of lines in the electric light department, the carrying on of the work of the extension of the mains and enlarging of the plant of the gas department, and new cars to be installed which have been purchased.

"The business for the past year has been very gratifying, considering the fact that we were afflicted during the summer season of 1905 by an unfortunate health condition; but, notwithstanding that fact, you will observe the gross earnings increased \$419,365.71.

"The business since Jan. 1, 1906, has been very gratifying.

The gross earnings for the month of January were.....	\$408,578
Operating expenses, fixed charges, taxes, etc.....	401,370

Surplus	\$97,207
The gross earnings for the month of February were....	\$506,507
Operating expenses, fixed charges, taxes, etc.....	392,873

Surplus	\$113,634
---------------	-----------

"So that the dividend declared on the preferred stock for the past three (3) months, payable on April 14, was more than earned during the first two (2) months of the year, and if the earnings continue the balance of the twelve months on the same ratio, as we have every reason to expect, there will be a substantial surplus in excess of the dividend on the preferred stock.

"The expenditures on the property in the way of maintenance we believe to be sufficient to maintain the property in its present serviceable condition.

"The accounts of the company were audited to June 30, 1905, and the accounts of the receivers to the close of the receivership, July 16, 1905."

ANNUAL MEETING OF THE BALTIMORE COMPANY

The stockholders of the United Railways & Electric Company, of Baltimore, held their annual meeting, Wednesday, April 11. This meeting was largely attended, owing to a belief that the stockholders would be acquainted in part with the details for raising additional capital with which to acquire land and erect modern car houses thereon. This question, however, was only incidentally touched upon in the annual report. The earnings were very gratifying, showing some \$900,000 over fixed charges, or considerably more than is required to pay interest on the income bonds. This sum was applied to extraordinary improvements, such as the company is not called upon every year to make. Contrary to expectation, there was no change among the directors. A decision made was to issue quarterly reports hereafter. The cause of the delay in announcing the new financial plan is the decision of the management to have the advice of experts in connection with the cost of building the new car houses, so it may be guided in determining the capitalization of the Maryland Electric Railway Company, through which the new funds will be provided.

An amendment to the by-laws was adopted providing for the creation of the office of general counsel of the company, to which Joseph C. France has already been elected. The annual report, which was submitted, showed earnings and expenses as follows:

Gross earnings of owned and leased lines.....	\$6,023,698.26
Operating expenses, maintenance, insurance, payments on account of principal of car trust certificates and \$58,258.73 placed to credit of accident reserve account.....	3,765,291.80
Earnings in excess of operating expenses, etc.....	\$2,258,406.46
Income from other sources	2,725.00
Income applicable to fixed charges, taxes, etc.....	\$2,261,131.46
Fixed charges, park and other taxes and interest on car trust certificates, etc. (but not interest on income bonds).....	2,230,066.54
Surplus for fiscal year carried to credit of profit and loss	\$31,064.92

Compared with 1905, gross earnings showed an increase of \$575,224.89, or 10.55 per cent; operating expenses and maintenance increased \$888,752.95; decrease in fixed charges, \$14,512.45; decrease in net results of 1905, due to heavy expenditures for reconstruction of track, purchase of new cars, etc., as compared with 1904, \$298,997.61. For the same reason, the operating and maintenance expenses amounted to 62.58 per cent of the gross earnings, as compared with 52.87 per cent for 1904, an increase of 9.71 per cent. The total number of revenue passengers carried was 122,318,438, an increase of 12,791,530. The number of transfers used was 49,292,821, an increase of 5,360,602; that is, over 40 per cent of the paying passengers availed of the transfer privilege, making the whole number carried 171,611,259. Continuing, the report says:

"Had it not been necessary to incur the heavy extraordinary expenses referred to, amounting to \$929,761.96, then the ratio of operating expenses to gross earnings would have been 47.05 per cent instead of 62.58 per cent.

"The total taxes paid by the company during the year, including cost of street paving, amounted to about \$550,000. The park tax paid for the last quarter was \$99,440.85, which was \$9,042.68 in excess of that for the corresponding quarter of 1904, and \$1,232.93 more than paid for the previous quarter, which latter can only be accounted for as above, that is, by the favorable weather during the last quarter and the rainy weather during the summer, and by the further fact that, during the summer months, the travel upon suburban lines is especially heavy, while during the fall and winter months city travel, which is subject to the park tax, increases.

"The Mayor and City Council of Baltimore being desirous of converting the city sections of the four turnpikes controlled by this company into regularly paved streets, is, agreeably to understanding with this and the turnpike companies, proceeding to acquire title by condemnation, with the understanding that the perpetual rights of way enjoyed by this company will be re-ceded to it upon the condition that the 9 per cent park tax on passenger earnings, which the Court of Appeals decided did not apply to these rights of way, will be gradually assumed after three years, say 1 per cent the fourth year, 2 per cent the fifth, and so on increasing 1 per cent per year until the full tax will be payable for the twelfth year.

"Referring to the recently published communication from the executive committee of this company to the Senate committee on corporations as to amendments then pending to the charter of the Maryland Electric Railway Company, which have since been enacted, it may be reiterated that it is proposed that the Maryland Electric Railway Company shall aid the management in its plans for the conservative development of the United's system. Immediately after the fire of 1904 the policy of reconstructing tracks out of income and acquiring new equipment on the car trust plan was adopted. It is proposed that the Maryland Electric Railway Company, which is controlled by friendly interests, shall finance the acquisition of the real estate, the erection of new car houses and buildings for the use of the United and the purchasing or building of such extensions to the United's system as may be deemed advisable. It was also set forth in the statement that the heavy cost of the new car house system and the building of suburban lines and extension should not, in the opinion of the board, be paid for out of income if other means could be devised, as it was not the intention of the management to defer payment of interest on income bonds any longer than was actually necessary."

BIDS FOR GEARY STREET RAILROAD

At a meeting of the Board of Supervisors of San Francisco, on April 9, four bids were submitted for the construction of the Geary Street Railway. Only one of these was within the appropriation of \$350,000, made by the last Board of Supervisors. The bids were:

Healy-Tibbitts Contracting Company.....	\$420,000
Deneen Building Company.....	359,500
Atlantic, Gulf & Pacific Company.....	369,000
C. E. Loss Company.....	347,000

The bids were referred to the public utilities committee, to report as soon as possible. The C. E. Loss Company is the contractor for the Ocean Shore Railway.

SUBWAY CHARTER GRANTED FOR PITTSBURG

The charter of the Fording-Morse syndicate, of Pittsburg, for the construction of a subway in the down-town section of Pittsburg has been approved by Governor Samuel W. Pennypacker. The application for the charter was filed on Dec. 29, 1905, under the name of the Pittsburg Subway Company. The route is as follows: Beginning at Smithfield Street and Oliver Avenue, running along Oliver Avenue to Liberty Street, along Liberty to Ferry, along Ferry to Third Avenue, along Third Avenue to Smithfield, along Smithfield to the place of beginning at Oliver Avenue, or 1 mile in all. The capital is \$50,000. The officers are: Horace F. Baker, Pittsburg, president; Horace F. Baker, Coleman E. Andel, Edwin K. Morse, Allegheny; Hugh H. Lyon, Avalon; Harrison M. Williamson, Allegheny, directors.

ANNUAL MEETING OF TECHNICAL PUBLICITY ASSOCIATION

At the second annual meeting and banquet of the Technical Publicity Association, held Thursday, April 5, at the Aldine Association, New York, the following officers were elected: President, F. H. Gale, General Electric Company; first vice president, H. M. Cleaver, Niles-Bement-Pond Company; second vice-president, C. B. Morse, Ingersoll-Rand Company; secretary, Rodman Gilder, Crocker-Wheeler Company; treasurer, H. M. Davis, Sprague Electric Company; members of executive committee, Robert L. Winkley, Pope Manufacturing Company, and G. M. Basford, American Locomotive Works; members election committee, C. W. Beaver, Yale & Towne Manufacturing Company; Chas. N. Manfred, Johns-Manville Company, and H. H. Kress, A. S. Cameron Steam Pump Works.

P. F. Kobbé, former president of the association and now an advertising specialist, was the guest of the evening, and gave an address on the general subject of advertising. An informal discussion followed, in which members and guests took part.

The membership of the association shows a steady increase, and its finances are in good condition. The following resolution was unanimously passed:

Resolved, That the association shall take active steps to secure definite information regarding the circulation of mediums in which the members of the association are interested.

AFFAIRS IN CHICAGO

At a special meeting of the Chicago City Council, held Saturday, April 14, the committee on local transportation was directed to frame ordinances providing for the "immediate unification, improvement and rehabilitation of the street railway service." Alderman Foreman, an opponent of Mayor Dunne's plan for municipal ownership, introduced the resolution, which was voiced by three-fourths of the Aldermen. The text of the resolution is:

Whereas, The paramount present need of the people of the city of Chicago is an immediate and radical improvement of the transportation facilities; and

Whereas, It is the duty and function of the City Council of the city of Chicago to make plans and provisions for the accomplishment of this purpose.

Resolved, By the Council of the city of Chicago, that the committee on local transportation be and it is hereby directed forthwith to take up for consideration the best method of securing immediate unification, improvement and rehabilitation of the street railway service of the city of Chicago.

Resolved, That the committee be and it is hereby directed to report to this Council its conclusions as early as practicable, in the form of an ordinance or ordinances providing for such unification, improvement and rehabilitation.

Alderman Foreman, in commenting on the resolution, said the resolution simply directed the committee to report the best means of remedying the present condition, and he did not know what kind of ordinances would be framed. Mayor Dunne knew nothing of the resolution until it was introduced. He added that he was desirous of getting as good service and as many improvements as was possible without militating against the municipalization of the lines. He could not, he said, give any permits for trolleyization until the claims of the ninety-nine-year act were settled beyond doubt.

Walter L. Fisher, formerly president of the Municipal Voters' League of Chicago, has been appointed special counsel in traction matters by Mayor Dunne. Mr. Fisher succeeds to the position held by Clarence S. Darrow, until his resignation last winter. The first work taken up by Mr. Fisher will probably be that of arranging for a test of the validity of the \$75,000,000 Mueller ordinance. He will also direct his attention to the question of lowering the tunnels.

A. B. du Pont, the special adviser of Mayor Dunne in traction matters, has recommended to the Mayor that the tops of the Washington Street and La Salle Street tunnels be knocked off and a flat roof be constructed in each tunnel, only high enough for the passage of cars. The flat roof would be of steel and concrete and could be constructed, according to Mr. du Pont, for \$60,000 for the two tunnels. It is figured that such construction would admit of the passage over the tunnels of vessels drawing 21 ft. of water, in accordance with the Secretary of War's order. This matter engaged the attention of the Mayor when in the East, and at Washington the Mayor, accompanied by Walter Fisher, special counsel for the city of Chicago, consulted with Secretary Taft concerning the removal or lowering of the tunnels under the Chicago River. By an act of Congress the tunnels, being considered an obstruction to navigation, were ordered either removed or lowered, and the Secretary of War was directed to see that this was done within a certain time. Secretary Taft heard both Mr. Dunne and W. W. Curley, for the Union Company, on the case, but will not make a decision for several days.

NEW PUBLICATIONS

Electric Railway Track Construction. By Max Diedrich, Berlin. Berliner Union Verlagsgesellschaft. 51 pages, paper covers. Price 3.50 marks.

The author is street railway engineer of the Berlin municipality, and his essay was written as a thesis for the degree of Dr. Ing. at the Königlicher Technischer Hochschule. He first takes up the subject of track location. This is followed by chapters on sub-construction, joints, special work, rails, bonding, etc. The historical side of the subject is touched upon, and the author illustrates by a series of sections, the gradual evolution of the present girder rail. A comparison is also given of methods of laying track in pavements of different kinds. No prices are given.

Adjuster's Manual for the Settlement of Accident and Health Claims. By C. H. Harbaugh, M. D. The Spectator Company, New York. 304 pages; leather covers. Price \$2.00.

This book is written to assist insurance companies, transportation companies and others in the adjustments of claims resulting

from accident and sickness. The author has classified under appropriate heads all conditions which can be met in dealing with this class of business, gives the causes and symptoms for each trouble, average period of total and partial disability under different conditions, hints as to whether fraudulent claims can easily be brought, and if so the customary way of simulating or exaggerating the injury, points on adjustment and the permanent effects. The book is divided into three parts, viz.: accidents, diseases and poisoning. It has been prepared throughout with the idea of its use by adjusters in mind, and should, in consequence, be of great value to those who have this work in charge.

STREET RAILWAY PATENTS

[This department is conducted by Rosenbaum & Stockbridge, patent attorneys, 140 Nassau Street, New York.]

UNITED STATES PATENTS ISSUED APRIL 10, 1906

817,156. Amusement Apparatus; Charles A. Carlson and Daniel H. Haywood, New York, N. Y. App. filed Jan. 6, 1906. Self-driven cars of the automobile type, run on an endless trackway. The walls of the building, inclosing the trackway, have scenery painted thereon, and revolve to give the illusion of a higher rate of speed.

817,169. Railroad Tie; Joseph Preund, Neaver, Pa. App. filed Aug. 12, 1904. A railroad tie having a reinforcing bar embedded in the tie and extending under the rail-base and having the up-turn outside said base, the tie and up-turn being arranged to extend up to, the upper part of the rail.

817,256. Electric Signaling for Trolley Railroads; Edward W. Lee, South Atlanta, Ga. App. filed Jan. 31, 1905. A trolley contact device, consisting of two copper-covered strips of wood fiber or other good insulation, forming a circuit maker and breaker, fastened to the underside of a short plank or block of insulation, which acts as a water-shed.

817,264. Electric Controlling Device for Cars; James H. K. McCullum, Toronto, Can. App. filed March 1, 1905. Provides a magnetic brake and control circuits by which the various combinations are automatically effected.

817,281. Automatic Intercommunicating Train Reporting System; Elmer E. Steiner, Knightstown, Ind. App. filed July 14, 1905. An auxiliary wheel carried by the trolley pole contacts with a special wire.

817,290. Electric Railway Switching Mechanism; Harry L. Young, Pueblo, Col. App. filed Oct. 5, 1905. A railroad switch system employing magnets at the switches which directly actuate the switch point and are energized by a special trolley connection, which is provided at a proper point along the track.

817,293. Automatic Railroad Signal; Jas. S. Anderson, Ames, Neb. App. filed Dec. 26, 1905. A number of contact-shoes mounted on top of the locomotive and adapted to engage with contact rollers supported adjacent to the track, in order to complete the necessary signal circuits.

817,299. Safety Car Fender; Frederick Cushman, Cleveland, Ohio. App. filed Jan. 31, 1906. Consists of a carrier and guard therefor, adapted to rise across its front, and fixed fulcrums for the carrier at about its middle and sides, on which the carrier is adapted to be shifted back and forth.

817,320. Street Car Fender; Denis Houlahan, Toronto, Can. App. filed April 21, 1905. Comprises two platform sections, one located above the other, and so attached to the car structure that under normal conditions they will be carried parallel with and slightly above the pavement of roadbed, and so arranged that under abnormal conditions the forward end of the lower section will move into contact with the pavement.

817,348. Track Instrument for Automatic Railway Block Signaling; Alfred J. Stecker, Detroit, Mich. App. filed March 27, 1905. A circuit-making tappet comprising a pair of hinged blades, adapted to be deflected by the car wheel to close one signal circuit when the train passes in one direction, and a second signal circuit when the train passes in the opposite direction.

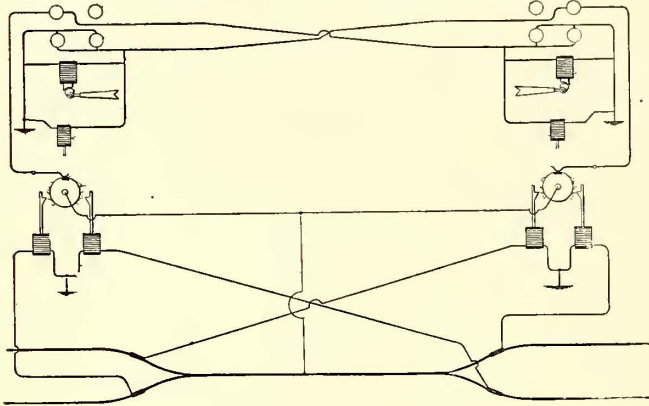
817,366. Electric Switch for Electric Railroad Cars; Otto Frank and Peter J. McCaffrey, Brooklyn, N. Y. App. filed April 1, 1905. A pair of magnetic valves control the respective inlets at the two ends of a pneumatic cylinder, which moves the switch arm, and a pair of springs are disposed to normally hold the arm in central relation.

817,368. Overhead Trolley Support and Switch; Byron E. Green, Iliion, N. Y. App. filed Sept. 28, 1904. A metallic box or casting for incorporation in the conductor at turn-outs, and having grooves to guide the wheel on to the proper wire.

817,454. Car Wheel; John Taylor, Troy, N. Y. App. filed

Sept. 7, 1905. A malleable-iron wheel center, having a hub, felly and spokes formed integral, the spokes being approximately H-shaped in cross-section.

817,463. Railroad Signal System; Rollin A. Baldwin and Geo. D. Foote, New Haven, Conn. A recording appliance at each entrance to the block section, which is adapted to make a record of each car which enters the section and to complete a signal circuit until all of such cars have again left the section. The device also records the number of cars which enter the section, so that a clear signal is not given until they have all left the same.



PATENT NO. 817,463

817,558. Car-Rail Hose Bridge; John S. Heator, Shelbyville, Ky. App. filed Oct. 24, 1905. An arched rail, provided with corrugated shoes at right angles thereto, adapted to rest upon the pavement.

817,562. Storm Curtain for Open Cars; Maria E. Holden, Yonkers, N. Y. App. filed Dec. 26, 1905. A curtain composed of waterproof slats, arranged to be wound upon winding posts in suitable castings at the ends of the car, whereby the curtains can be quickly adjusted by the conductor or motorman.

817,606. Electric Brake; George R. Yancey, Louisville, Ky. App. filed Aug. 7, 1905. A chain or rod is connected to extend throughout the entire train, and may be tightened to apply the brakes on all the cars by a motor-driven drum on the forward car.

817,699. Inclined Suspended Railway; Rollie B. Fageol, Des Moines, Ia. App. filed Sept. 21, 1905. Details of a suspended pleasure railway.

PERSONAL MENTION

MR. C. E. NEWCOMER has resigned as superintendent of the Albuquerque Traction Company, of Albuquerque, N. M.

MR. J. E. STARR has been retained by the New York Rapid Transit Commission as special expert to study the question of ventilation in the New York subway.

MR. V. RAY RONK, auditor of the Detroit, Monroe & Toledo Short Line, has resigned to become manager of the electric lighting and heating plant at Bowling Green, Ohio. Mr. Ronk's change is the result of the recent sale of the Monroe line to the Detroit United.

MR. JAMES F. LARDNER, manager of the Tri-City Railway Company, has been appointed general manager of the Tri-City Railway & Light Company, which has recently secured control of the public utility companies of Moline and Rock Island, Ill., and Davenport, Ia.

MR. FRANK S. GANNON, vice-president of the New York City Railway, has resigned to take up the duties of the presidency of the Atlantic & North Carolina, the Virginia & Carolina Coast and the Norfolk & Southern Railways. This system, now having 400 miles of track and three steamboat lines, will be extended by 200 miles of track within a year.

MR. LEMUEL BANNISTER, the founder of the English branch of the Westinghouse Electric Company, died at the Imperial Hotel, New York, April 13, after an illness of three years, with an affection of the throat. Up to three years ago Mr. Bannister was vice-president of the English Westinghouse Company. He lived in London, but when his health failed, he retired from business. Mr. Bannister was about 67 years old.

MR. CHARLES A. MUDGE, formerly chief engineer of the railway department of the Allgemeine Elektrizitäts-Gesellschaft, of Berlin, has been appointed consulting engineer of the Electro-Dynamic Company, of Bayonne, N. J. Mr. Mudge is engaged upon the design of a line of high-voltage, interpole, direct-current motors which the company will soon place on the market, as outlined in an article by Mr. G. Herbert Condict elsewhere in this issue.

MR. HARRY HARTWELL has recently been appointed assistant chief engineer, in charge of the maintenance of way department of the United Railroads, of San Francisco, Cal. Mr. Hartwell comes to the Pacific Coast from Nashville, Tenn., where he held a similar position with the Nashville Railway & Light Company. His experience in street railway engineering has been varied and thorough, comprising experience in New York City, London, England, and Brazil.

MR. A. W. JORDAN has been appointed general passenger agent of the Dayton, Springfield & Urbana, the Columbus, London & Springfield, the Columbus, Grove City & Southwestern and the Urbana, Bellefontaine & Northern lines, formerly known as the Appleyard lines and now a part of the Schoepf syndicate system. Mr. J. T. Horton has been appointed general freight agent of these lines, succeeding Mr. C. C. Collins, who recently went with the Western Ohio Railway in a similar capacity.

MR. W. B. BROCKWAY has resigned as auditor of the operating department of Ford, Bacon & Davis, and is now connected directly with Ford, Bacon & Davis, consulting engineers. In recognition of the cordial relations which have existed between Mr. Brockway and the auditors of the Newman and Ford, Bacon & Davis system of electric railways, the auditors of these companies recently presented Mr. Brockway a beautiful cut-glass water set. The presentation occurred at Nashville, Tenn., on March 19.

MR. FRED S. BORTON, of Cleveland, has entered the brokerage business in that city in partnership with his brother, Mr. T. E. Borton. Mr. Borton was formerly prominent with the Everett-Moore syndicate, and was secretary of the Cleveland Electric Railway, the Cleveland, Painesville & Eastern Railway and the Northern Ohio Traction Company. For the last two years he has been prominently identified with the Pennsylvania & Mahoning Valley Railway, representing Herrick, Parmelee & Crawford, of Cleveland, who control the property.

ON ACCOUNT of the rapid expansion of the business of the Westinghouse Machine Company, the board of directors has decided to enlarge the executive organization by increasing the number of vice-presidents from two to four, and has elected Mr. E. H. Sniffin and Mr. Arthur West to fill the new offices of third and fourth vice-presidents, respectively. Mr. Sniffin will be in charge of the sales department as heretofore, as his field of work has not been altered in assuming the new title. Mr. West, who has been chief engineer of the company, still retains that title and position.

MR. HENRY E. HUNTINGTON, president of the Los Angeles Railway Company, was waited upon by about 250 of the conductors on his lines a few evenings ago, and through a spokesman was presented with an engrossed and illuminated memorial, expressive of the appreciation by his employees of the unasked advance in wages given them Dec. 6. The presentation was made by Messrs. P. C. McNaughton, Frank R. Nye, John Collins, William Schultz and George F. Weber. Mr. Huntington acknowledged the token in a brief speech. The resolution is headed "An expression of thanks to Mr. Henry E. Huntington, president of the Los Angeles Railway Company," and follows: "We, the conductors and motormen of the Los Angeles Railway Company, in special meeting assembled this eighteenth day of December, nineteen hundred and five, desire to express to you, and to those associated with you, our hearty appreciation and gratitude for your good-will and liberality, manifested toward us hitherto on many occasions during the period of our service with the Los Angeles Railway Company and made especially evident to us on December the sixth by an unsolicited increase in our wage schedule. We take this occasion, at the beginning of the new year, to assure you, in recognition of your generous treatment of us and your kindly consideration for our welfare, that we shall make even greater effort to perform our duties in such manner as well befits trusted employees and public servants, doing faithfully and cheerfully our part in the way of aiding you to maintain a railway service that shall be efficient, comfortable and safe. Signed for the conductors and motormen by Frank R. Nye, William Schultz, John Collins, P. C. McNaughton, George F. Weber, committee."