

Street Railway Journal

VOL. XXVIII.

NEW YORK, SATURDAY, NOVEMBER 17, 1906.

No. 20.

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: Schofield Building.
London: Hastings House, Norfolk Street, Strand

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

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Of this issue of the Street Railway Journal, 8000 copies are printed. Total circulation for 1906 to date, 377,900 copies, an average of 8215 copies per week.

Inside vs. Outside Hung Brakes

In the last few years the inside-hung brake has been gradually gaining adherents until at the present time the majority of double trucks are built with brakes of this type. However, there are still many who prefer the brakes hung outside the wheel because of the better facilities this position offers for getting at the shoes when they are to be changed. Probably the chief objection to outside-hung brakes is the lever-

age exerted on the end of the truck frame, which in time, if the frame is not built heavy, will pull the ends down. Again, the slight flexibility of the truck frame induces a tendency for the shoes to chatter, which is both disagreeable to passengers and detrimental to the truck and the car in general. A point in favor of inside-hung brakes that is not usually considered is that the stresses on the truck resulting from the brakes are opposed to that resulting from the inertia of the car thrown upon the truck at the center bearing.

When the brakes are applied the inertia of the car body acting at the center bearing tends to tip the truck forward, throwing more weight on the front wheels and less on the rear ones. With inside-hung brakes the strain on the forward hangers is upward, while on the hangers of the trailing wheels it is downward or in such a direction as to tend to equalize the weight on each pair of wheels and to keep the truck in its normal position. With outside-hung brakes the opposite is true, the forward shoe tending to pull the front of the truck down still farther while the rear shoes push this end of the truck frame higher. The tipping of the truck is of course all taken by the springs. The greater this tipping, the greater the jar caused by the sudden release of the springs when the pressure on the brake-shoes is removed.

It must be admitted that with inside-hung brakes the adjustment and changing of the brake-shoes are difficult because of the limited space, but we do not believe this disadvantage should be considered seriously in view of the other advantages of inside-hung brakes over those outside hung.

Car Fires on the Street

One of the most annoying incidents of street railway operation is a fire on a car occupied by passengers. When such an occurrence happens on an elevated structure, or especially in a subway, the danger may be real and serious. Even on the surface the starting of a fire is liable to overtax the manager of the claim department for several days. Operating men have realized the danger which attends a fire on a tunnel or elevated car to the extent of providing extinguishers on each piece of rolling stock; and in subways of recent build, ample arrangement is made to enable the passengers to walk beside the track to the nearest station in case it becomes necessary to leave the cars. Every elevated structure should certainly have some provision of this nature, although it is a difficult task to handle a crowd of timid passengers on a narrow walk 30 or 40 ft. above the street. The best trained organization is needed when a fire occurs in such a position, for the invisible power of the so-called deadly third rail is an obstacle which uninformed passengers seldom dare to pass without great hesitation.

Although the actual physical consequences to the passengers in the case of a fire in a car operating on surface tracks are rarely serious, aside from the effects of unreasoning fright,

it behooves every officer in direct charge of transportation service to instill into his subordinates cool and clear-headed methods of meeting such an emergency. There is very seldom any particular danger from the fire itself on a surface car. The real danger lies with the passengers, who must be promptly but not nervously gotten out of the car at the first sign of trouble. Any evidence of trepidation on the part of the car crew is liable to precipitate a panic. Once the passengers are out, the fire can be attacked.

The actual putting out of such a fire is more a matter of hard-headed common sense than anything else. One of the first moves to make is to shut off the power, both at the platform switches and by pulling down the trolley. In a recent fire in a car on a crowded street neither motorman nor conductor appeared to have the least idea of how to meet the situation after the passengers were out, but ran around the car in an aimless sort of way while a janitor from a near-by building brought a pail of water and threw it upon the flames. The fire continued, and not until the trolley was pulled off the wire was it possible to extinguish it. Meanwhile the city fire department had been called, and the congestion of the street and tracks increased beyond all reason.

A surface car, as usually constructed, is both inflammable and expensive, and in view of the danger of its destruction from fire through short-circuits in the controller or other parts of the equipment, it would seem desirable to instruct the crew as to the best method of procedure in case of fire. Sometimes a handful of dirt, if in the country, or the sand pail, if carried, can be used to advantage, and again, an extinguisher carried on the car or an asbestos blanket two or three feet square can be effectively employed. The latter has the advantage that it takes up almost no space of value. We have known of fires on cars being promptly extinguished by a well-directed stream from a siphon or two of carbonic water, borrowed from a neighboring drug store. Where druggists are located on every block, as on many city streets, this method may often prove convenient.

But an ounce of prevention, of course, is better than a pound of cure, and while it is advisable to keep one's wits about one and have extinguishers or other provision for fires it is better to avoid the trouble if possible. First-class wiring and inspection are, of course, fundamentally important in this matter. It must never be forgotten that damage claims of magnitude may grow out of the most trifling occurrence, and a fire of any nature on a car is never to be treated lightly.

The Car Heating Question

With the coming of cold weather begins the annual reconsideration of all questions pertaining to car heating. When the electric heater entered the field it was generally believed that the whole problem was solved. To a certain extent the belief was on a sound basis, but the fact remains that electric heating has introduced some very serious problems of its own and that in some cases it has been replaced by other and intrinsically less desirable methods. We cannot at this writing take up a discussion of the relative advantages of electric and hot-water heating and heating by stoves for different classes of service, as this is a long story of itself, and has, moreover, been considered in these columns on former occasions. There are other questions connected with heating cars, however, which are almost if not quite as important as

the selection of the type of heater itself, and one of these is the degree of heat to be used in the car. Closely allied to this question is that of ventilation, because with the beginning of the heating season it is safe to expect the annual crop of discussions on this subject with the usual accompaniment of impracticable propositions. Now we want once more to go upon record as holding in the interest of the public as well as that of the railway company that the car-heating business in most American cities is considerably overdone and the whole situation would be relieved and the public health would be greatly improved if much less heating were attempted.

Fundamentally the main question is to what extent cars should be heated. That they should be warmed above the outside winter temperature everybody will agree. The passengers enter the cars after more or less active exercise and, sitting quietly, would be unpleasantly chilled if no attempt at heating were made. Yet it is a fact that during a period in which heating was cut out from accidental lack of generating capacity in one of our large cities, the crop of complaints was much less than one would have expected, and not a few passengers found themselves more comfortable than usual. Of course heating was off only during the peak, so that no cars were continuously unheated, and during the shopping peak the heat was on. Now passengers enter a car in their heavy winter outside garments designed to meet the external cold. There is no place or opportunity for laying these aside, and the most that can be done is to loosen them. Plainly this is no case for any such temperature as would be expected in a room, yet it is altogether too common to find cars injudiciously pushed up to a temperature that would be uncomfortable anywhere. For people wearing winter wraps, the heat in the car should be below that which tempts them to loosen these garments, for the moment they do so they are exposed to serious risk from drafts and it becomes quite impossible to ventilate the car properly without causing discomfort and some danger. Many a serious cold has been caught in a too well heated street car. If the heaters are worked enough to keep the car warm sufficiently for passengers protected as they would be on the street, all has been done that it is wise to do on the score of health alone. An actual temperature of anything over 50 deg. F. is getting to a point where ventilation is risky in winter weather.

Americans as a rule keep their houses far too hot, but they do not wear overcoats in them, while through evil precedent they seem to require overheated street cars for the sake of unbuttoning their overcoats and catching cold. If the heaters used were designed to take or give off about one-half the energy now usual, they would still be adequate to give all the heat that is really needed, and everybody concerned would be better off. We would like to see a systematic effort made toward educating the public to better hygienic conditions, and less fear of fresh, cool air. With a reasonable car temperature, the air can be kept moving without giving anybody a chill and there is some chance for proper ventilation.

These remarks apply particularly to city and suburban runs, though we think that interurban cars also are too often overheated. We realize that the temptation to keep the heaters going when electric heaters are used is always before the conductor. The people who protest against cold are usually more insistent in their ideas than those who protest against heat,—possibly because the latter can always find

refuge on the rear platform. Moreover, the average conductor has to spend a considerable portion of his time outside and likes a high temperature in the car to become warmed at intervals. Nevertheless we believe that it would be desirable to give the moderate temperature scheme a trial as the winter comes on, and think that if this is done the general condition in crowded cars would be very materially improved.

The Suburban Transportation Problem

No more important work is to-day being accomplished in the transportation field than the development of suburban traffic-handling methods along broader lines than are possible with simple extensions of local street railway service. While the conditions of any particular problem determine the exact methods desirable in meeting the actual or estimated needs of any given population distribution, it is becoming clearer each year that no single class of train or car service, and no single type of railway line is capable of fulfilling all the requirements of suburban transportation in and about any great city. Each transportation agency, within broad limits, occupies a sphere of its own. To a certain extent competitive operation is always present where the territories of different systems overlap, but as long as the systems are different in character, as long as like facilities are not duplicated, the economic usefulness of the street railway, the suburban trolley line, and the interurban railroad, steam or electric, is assured, provided the population density and the habits of the communities served are sufficient to justify these diverse facilities.

The most valuable feature of any modern transportation service is, for equal safety of operation, its time-saving ability. In the last analysis time is the pivot around which all modern industry swings, and the most highly organized tools are those which turn out the largest product in a given time. A difference of a few cents in passenger transportation rates cuts little figure provided there is a marked saving of time in one route over another, at least in American business life. In estimating the influence of high schedule speeds upon traffic one must realize the fact that the real point at issue is the elapsed time, not between railroad terminals or stations, but between the commuter's home and his office.

It is out of the question to expect a street railway operating over a public highway to provide very fast service, or even to run its cars at the rather moderate schedule speeds of 15 to 20 miles per hour. A schedule speed of 12 miles per hour means spending at least two hours a day on the cars for any commuter whose suburban home is 12 miles from the city, if he depends upon no faster means of travel. The lack of speed is compensated in a measure by the reasonable fare, the relatively frequent cars and the stops at numerous points along the route, so that as one approaches the city or as one gets farther and farther away from more rapid means of transit, the sphere of the suburban highway line broadens, until at last it merges with the city system and is unquestionably the best method of transportation to patronize. It is a very serious question how far it is profitable for an urban transportation company to carry on long-distance suburban service. Short-ride traffic is well known to be the most desirable for a street railway operating in urban territory, and the original function of the street car line—carrying passengers from door

to door and serving intermediate points—was sound economy from the business standpoint. Certainly it is more profitable to carry short riders in urban cars at six-tenths of a cent per passenger minute than to carry through passengers on a 12-mile suburban extension at less than one-tenth of a cent per passenger minute—which is the arithmetical rate of income on such a line with sixty minutes running time.

Steam railroad branch lines can seldom afford fast suburban express train service, although they cater to an intermediate field. When tracks can be provided for both express and local trains the long-distance and the suburban traffic can then be handled in the proper manner, and there is no reasonable doubt that electricity is the best motive power for the latter service. In some cases the situation can be met by the electrification of existing suburban tracks and the creation of additional stations en route; in others it may work out that the suburban service can best be provided by the construction and operation of separate tracks by an interurban electric transportation company, which will give high-speed service through quick acceleration between fixed stopping points along its route and the city terminal.

In the neighborhood of large cities the attempt is made to give suburban service—which in this case is also interurban within 10 to 20 miles of the urban terminal—by the through trains of a steam railroad trunk line. Such trains are frequently late on their schedules, and as they usually form part of a trunk line system, they are only incidentally operated for the benefit of the suburban cities traversed. It is safe to say that trunk line suburban service depending on through trains rarely has the economic value of the interurban railway, when it is considered that the latter carries the passenger from any point in one city to any point in the other, for about half the steam railroad fare, in more regular and frequent trains and with less annoyance from dust and smoke. Many competent steam railroad managers are now agreed that through and suburban service cannot be well handled by trunk line trains even though from six to twelve cars per train may be operated at morning and night. Special suburban trains cannot well be added to tracks already burdened with through passenger and freight traffic.

Whether the conditions justify the building of a high-speed electric line between cities already served by steam railroad connections and by trolley cars operating on the highways is a question which must be determined on its merits in each specific case. The cost of providing distinctly high-speed suburban service of the interurban order must be carefully weighed, the probable traffic analyzed, and existing conditions thoroughly gone over. If connections can be made with city systems so that through passengers can be delivered in the business districts with promptness after the cars leave the private right of way of the electrified tracks for high-speed service, much will be gained. Without mentioning specific projects of this character, it is worth noting that there are still engineering possibilities not made available for suburban rapid transit in some of our large urban centers, and it is extremely probable that the inauguration of such service, in financially justified cases, will in the long run stimulate the traffic of the older systems rather than cut seriously into them as is sometimes feared.

THE WINONA INTERURBAN RAILWAY

A passenger on the recently constructed interurban railroad between Warsaw and Goshen, Ind., may get some comfort from the fact that the portion of his fare usually devoted to the payment of dividends will be used in the maintenance of a trade school for the education of children who would other-



TERMINAL AT WINONA LAKE

wise be unable to obtain an education. The Winona Interurban Railway Company operating the line is a branch organization of the Winona Assembly and Summer School Association, which is most widely known through the Winona Assembly conducted by it during the summer months at Winona



LONG TANGENTS ON THE LINE OF THE WINONA INTERURBAN RAILWAY

summer, however, is about 450,000 people. It is partly for the purpose of furnishing better transportation facilities to this park that the Winona Interurban Railway was organized. The success of the Winona & Warsaw Railway, which is operated by the Winona Association between Winona Lake and Warsaw, facilitated the sale of the bonds for the new interurban line. This small road, after two years of operation, had earnings sufficient to meet the interest on its bond issue and a 6 per cent dividend on an amount of capital stock equivalent to the amount of the bond issue.

The organization of the Winona Interurban Railway Company, operating the Warsaw-Goshen line, is unique. Fifteen directors of the Winona Assembly are directors of the railway company, and each holds in trust for the assembly \$1,000 of the total of \$15,000 of stock issued by the company. The stock simply represents control and the road was constructed entirely on a bond issue.

The Warsaw-Goshen line, with which this article is mainly concerned, is only one division of an extensive system planned by the operating company to center at Warsaw. The line already constructed extends north of Warsaw to Goshen, 25 miles. A line south of Peru, 45 miles distant, will be put into operation within a few months, and plans are under way to extend lines east of Warsaw to Fort Wayne, 38 miles distant, and west 65 miles to Valparaiso, Ind. The east and west line will be built along a direct line from Fort Wayne to Chicago, while that extending from Peru to Goshen will con-



Lake, Ind. This assembly is carried on in a manner somewhat similar to the original New York Chautauqua Assembly, in a park embracing 2100 acres of land lying about Winona Lake and two miles east of Warsaw, Ind. The trade school already mentioned is conducted in the park throughout the year, and the students and instructors in the school, together with other permanent residents, bring the winter population of the park up to about 1500. The attendance during the

nect the interurban railway systems in the northern portion of Indiana with those surrounding Indianapolis.

The Warsaw-Goshen line was constructed almost its entire length on a private right of way, through a rich farming country averaging in population about 1200 people per mile, exclusive of terminal cities, of which Goshen has a population of 10,000 and Warsaw with 5000 people. It connects several trunk steam road lines running east and west and

thereby makes connections for steam road passengers en route to Winona Lake.

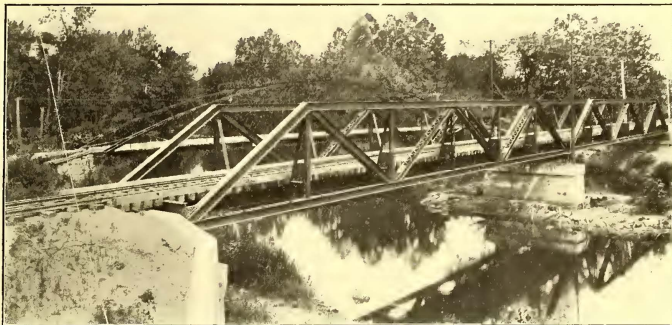
The Electrical Installation Company, of Chicago, carried out the contract for the construction of the complete railway system. The contracts for the power house, sub-stations, and the electrical equipment of the cars, however, were sublet by the Electrical Installation Company to the Allis-Chalmers Company, of Milwaukee. Sargent & Lundy, of Chicago, who designed the power house and sub-stations, acted as consulting engineers for the railway company.

TRACK AND ROADWAY

The line traverses comparatively level country, and as a consequence very little excavating and filling were required to get a roadbed free from excessive grades. However, a 12-ft. fill was necessary at the approach to a bridge over the Elkhart River, and at another point on the line a 11-ft. cut was made. The maximum grade on the line is $1\frac{1}{4}$ per cent and is about 1000 ft. long. At one point a 10-degree curve could not be avoided because of the topography of the country, but with this exception the line is free of sharp curves.

The only steel structure on the line is a two-span pony truss bridge over the Elkhart River, a few miles south of Goshen. The spans, which rest on concrete footings, are 96 ft. long and are designed to support a train of 60-ton cars. The only other structure worthy of mention is a 500-ft. trestle over a sink-hole north of Milford. The Big Four

some points, where the road is built on a gravel deposit, ballasting is done at very little cost. The gravel is simply dug out of the right of way and shoveled over on the track. Chestnut ties 6 ins. x 8 ins. x 8 ft. in size and rails of standard cross section and 70 lbs. in weight are employed. Outside of city limits the joints, which are made with four-bolt angle plates, are bonded with American Steel & Wire Company soldered bonds placed on the ball of the rail. In the



BRIDGE OVER ELKHART RIVER

towns, however, a compressed terminal bond is used. The two rails are cross-bonded at intervals of ten poles, or 1000 ft.

Sidings 500 ft. long are located 4 miles apart. At the present time the switch stands are lighted with oil lanterns, but it is the intention to equip and wire them for electric lights.

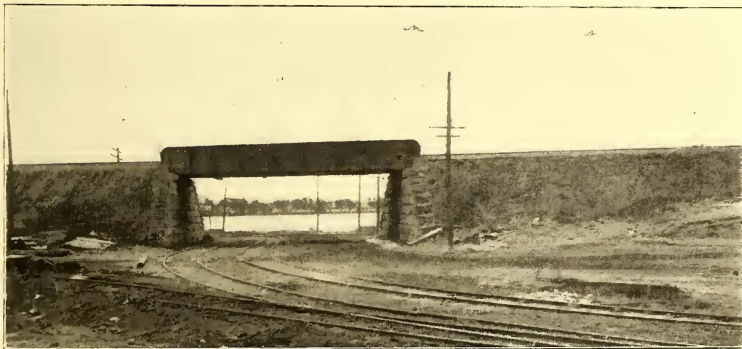
Two grade crossings are made with steam road tracks. At New Paris, where the tracks of the Wabash Railroad are crossed, interlocks are installed. It is the intention to avoid the present grade crossing with the Baltimore & Ohio Railroad at Milford Junction by the construction of a viaduct.

THE NEW POWER STATION

A new power station was built near the entrance to the Winona Assembly grounds and adjacent to Winona Lake. It is constructed on a plan which permits future extensions to be made without interference with the operation of the portion of the plant already in service.

The building consists of a steel frame with walls of red brick. The roof, which is liberally provided with skylights, is of cinder concrete. The floors are also of concrete. Two transverse fire walls divide the interior of the building into three sections, a coal storage room containing an elevated standard-gage track, a boiler room, and an operating room containing reciprocating engines, having below it a basement consisting of a high-tension bus structure compartment, a toilet room, and a room surrounding the engine foundations in which the condensers are located.

Near the center of the boiler room a Weber concrete chim-

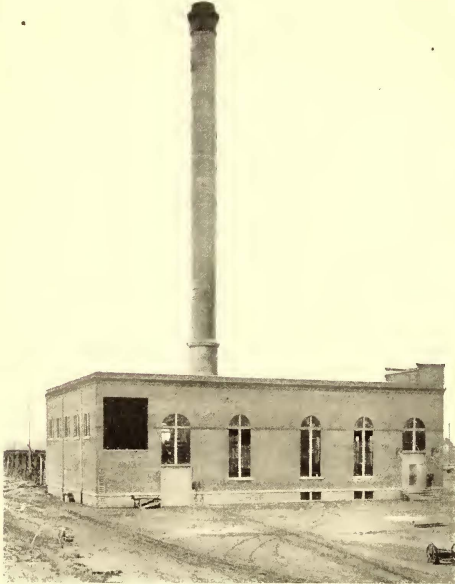


UNDER GRADE CROSSING NEAR THE TERMINAL AT WINONA LAKE

Railroad, which parallels the electric line, crosses this sink-hole on a fill which has caused the operating company an endless amount of annoyance, and to avoid the possibility of similar trouble it was thought best to trestle over the sink-hole. The ground at this point is of such a nature that a 20-ft. gas pipe sank into the ground its full depth by its own weight. The piles for the trestle were 70 ft. long and were driven into a bed of solid gravel.

The width of the roadbed is 15 ft. and the cuts, including ditches, are 20 ft. wide. The slopes are all $1\frac{1}{2}$ ins. to 1 in. The line is ballasted with 8 ins. of gravel under the ties. At

ney rises 175 ft. above the floor. The chimney is 8 ft. in inside diameter and rests on a concrete foundation 22 ft. square. On each side of it, with their rear walls a few feet distant from the fire wall between the boiler and operation rooms, are located two Babcock & Wilcox water-tube boilers designed for a working pressure of 150 lbs. Each contains

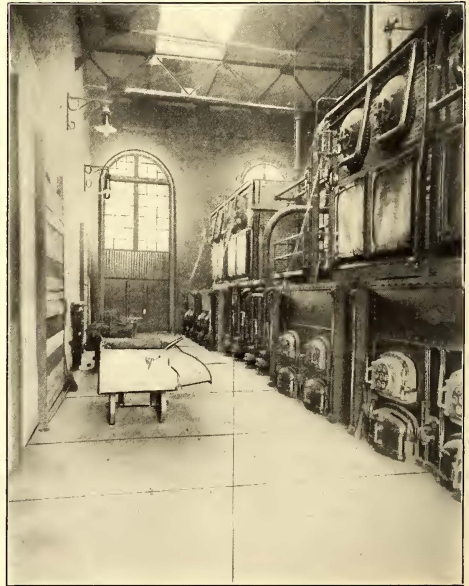


EXTERIOR OF WINONA POWER HOUSE

3000 sq. ft. of heating surface and is rated at 300 hp. The furnaces are hand-fired and are fitted with Kelly shaking grates. In order to obtain the best results from bituminous coal, which it was intended should be burned, the furnaces are equipped with coking ovens. The location of the concrete chimney with reference to the boilers permitted comparatively short flue connections. These are suspended above the boilers on a steel framework, and are built rectangular in shape of sheet steel 3-16 ins. thick. Hand-operated dampers are located in the connections to each boiler as well as in the main flues on each side of the chimney. In the space immediately in front of the chimney and between the two sets of boilers are installed two boiler feed pumps, two low-service pumps and a Cochrane feed-water heater capable of handling 52,000 lbs. of water per hour. A steel framework which supports the heater several feet above the floor serves also as a support for the numerous pipes leading to and from the pumps and heater. The boiler pumps are of the horizontal outside center-packed plunger type, and the low-service pumps are of the piston pattern. In ordinary operation of the plant the low-service pumps obtain their supply of water from a pumping basin outside the building and discharge into the Cochrane heater and into the circulating coils of the water-cooled high-tension transformers, and in addition in starting up the engines the duty of supplying pumping water to the condensers is imposed on them. All of the pumps and the engine of a steam-driven exciter exhaust into the feed-water heater, and the exhaust of the condenser pumps may also be turned into it. In addition to the steam exhausted into the heater, considerable economy results

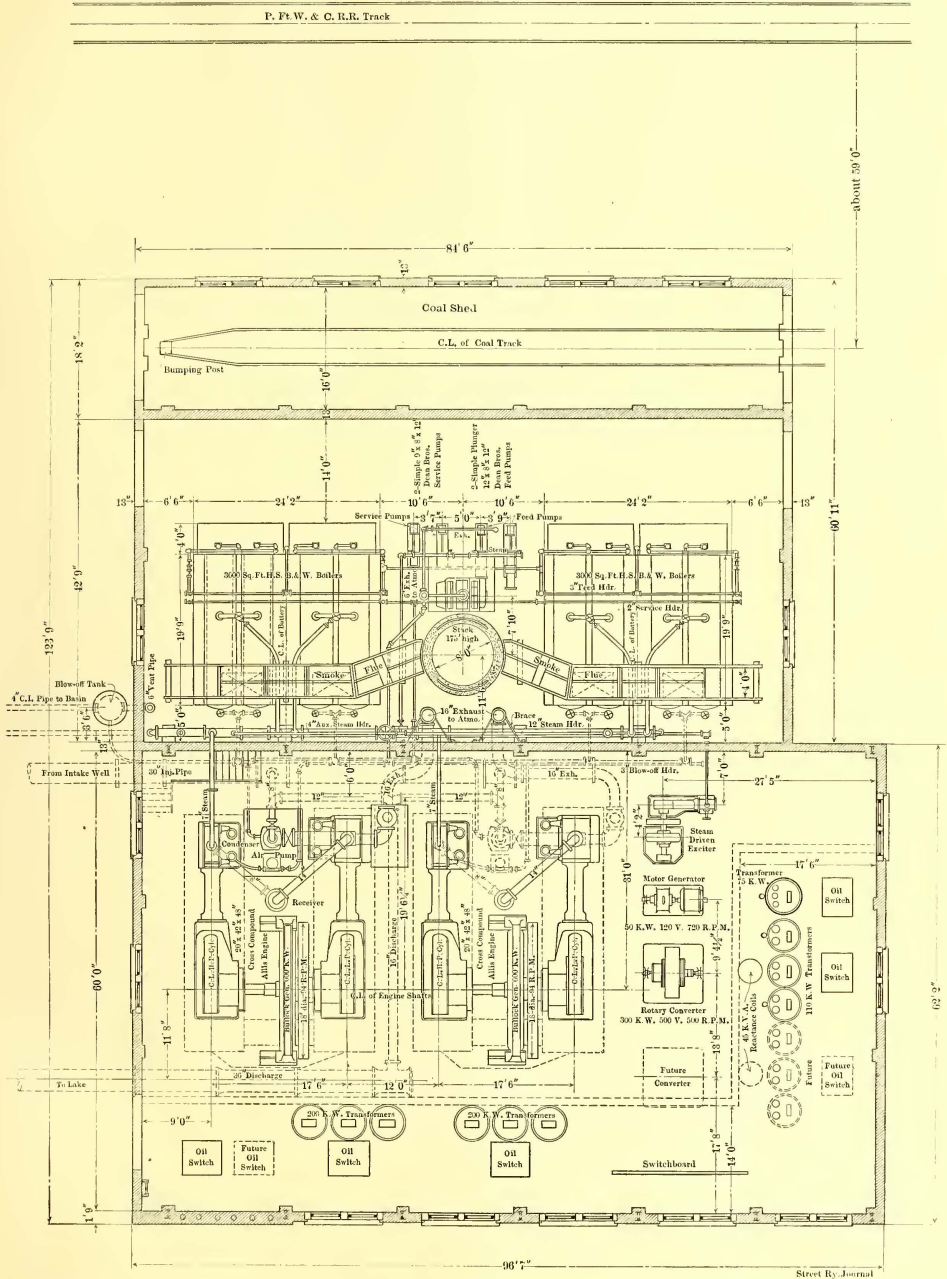
through piping into it the return water from the transformer cooling coils and by draining into it all of the steam traps connected to the piping system. The boilers have connections to a common blow-off header which is carried along the floor of the basement of the operating room. This header, which is 3 ins. in diameter, leads into a cast-iron blow-off tank located under the ground near the east wall of the boiler room, which tank in turn is drained into the lake.

Steam from each boiler passes through a 6-in. main into a 12-in. steam header supported by brackets on the operating room wall about 11 ft. above the floor of the boiler room. This header is divided into two sections by a 12-in. gate valve at its central point. Mains from two of the boilers and a main to one of the engines are connected to each section. The main header is supported in a manner that allows of considerable expansion and contraction. At its central point near the gate valve it is anchored firmly to the supporting bracket. At the other four brackets it rests between roller bearings and is held firmly in position by a pressure on the top obtained through heavy coil springs below the supporting bracket. The manner in which the large steam mains are brought to it also allows of considerable movement without inducing strains in the piping. Partly with this idea in view, the header is dropped down several feet below the top of the boilers and the large steam mains are brought to it by long, sweeping bends. Each of the boiler leads has one horizontal and one vertical bend in it, while the engine supply pipe



BOILER ROOM, SHOWING COKING OVENS

contains two vertical bends of large radius. These latter mains, which are 7 ins. in diameter, pass upward through the adjacent wall and into a separator immediately over the throttle valve of the engine. With the exception of the condenser pumps, which obtain their steam direct from the engine mains, all of the steam auxiliaries are connected to a 4-in. auxiliary steam header located directly above the main steam header, which in turn is connected to both sections of the main header.



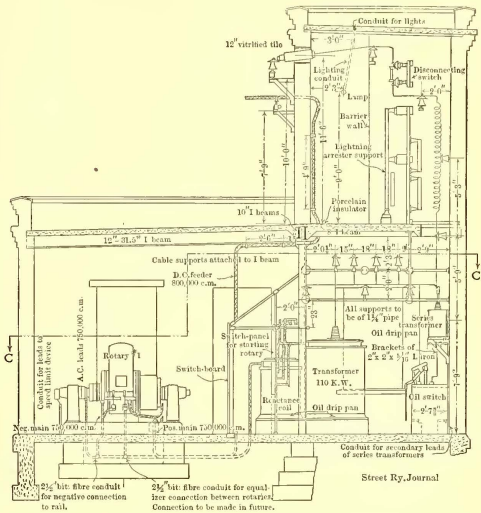
GENERAL PLAN OF MACHINERY, BOILERS AND PIPING IN THE POWER HOUSE OF THE WINONA INTERURBAN RAILWAY COMPANY

valves at the base of each set of transformers permit the oil to be drained from them into suitable drains in the basement. The cooling coils, which are of copper, are placed near the top of the tanks and, as has already been stated, obtain their supply of water from the low-service pumps in the boiler room and discharge into the Cochrane heater.

The high-tension bus structure in the basement, after extending almost the full length of the building, near the west wall makes a right-angled turn in order to reach the transformers of the sub-station and of the auxiliary apparatus. When the west extension to the building is made the bus structure will be extended west so that the whole structure will be T-shaped. The structure is built of repressed brick with concrete barriers. The three compartments are built one above another and the bus-bars of No. 2 bare copper wire are supported on Locke No. 408-B high-tension insulators. Near the east end of the structure the taps are taken off the buses for the outgoing high-tension lines. These after being carried through a high-tension oil switch are heavily insulated and enter vertical ducts in the wall of the building which lead to the lightning arrester compartment, built above the roof trusses at the northeast corner of the building. Specially constructed walls. Two pieces of bituminized fiber 1½ ins. and 4 ins. in diameter, respectively, are placed concentric inside a shorter piece 6 ins in diameter. The three pieces are held separate from each other by wooden bushings, and the whole is placed in a 12-in. vitrified tile in the wall of the building. The high-tension wire enters through the central conduit.

The auxiliary and sub-station apparatus in the west end of the station consists of a 300-kw Allis-Chalmers rotary converter with reactance coils, transformers and oil switch, the steam-driven exciter already mentioned and a motor-driven exciter set, together with a transformer and oil switch. Space

Allis-Chalmers three-phase transformer which lowers the voltage to that required for the motor. The rotary converter transformers are of the oil-insulated self-cooling type, and



GENERAL ARRANGEMENT OF SUB-STATION APPARATUS

are of 110-kw capacity each. The secondaries are connected to the converter through a set of reactance coils having a rating of 45 W. V. A.

THE SWITCHBOARD

The switchboard consists of thirteen panels of blue Vermont marble. No high-voltage apparatus whatever is mounted upon it, as all of the instruments connected to the high-tension system obtain their current through potential and current transformers.

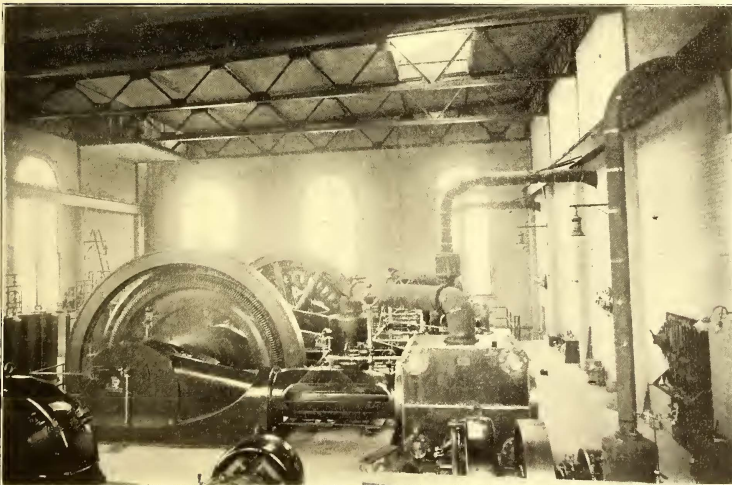
OILING SYSTEM

The main engines and other apparatus in the station are oiled by means of a central gravity oiling system. From a tank 7 ft. long and 2 ft. 6 ins. in diameter, located just under the roof in the boiler room, oil pipes lead to the bearings of the different apparatus. All surplus oil drains through a system

of pipes to a Turner gravity separator and filter in the basement of the operating room. After passing through the filter a duplex pump forces the oil into the elevated storage tank.

COALING FACILITIES

The station has direct track connections with the Pennsylvania Railroad and indirect connections by way of the electric line with the Big Four Railroad at Warsaw. A trestle per-



GENERAL VIEW OF INTERIOR OF GENERATING STATION

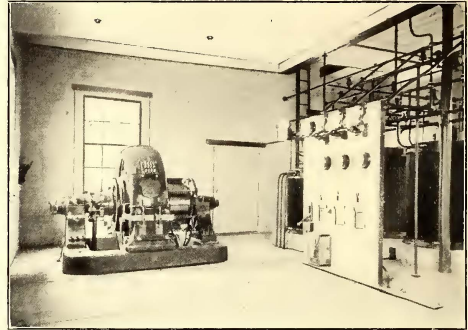
has been left for an additional rotary converter, and this, together with the necessary transformers and oil switches, will be installed immediately. The motor generator exciter set consists of a 75-hp, three-phase, 375-volt induction motor direct connected to a 50-kw, direct-current, 120-volt Allis-Chalmers generator. Current for the motor is obtained from the high-tension buses in the basement. Leads from these, after passing through an oil switch, go to a 75-kw oil-cooled

mits steam road coal cars to be switched into the south section of the building over the coal storage space. The track enters the building through an opening provided with Kinneer rolling steel doors and terminates in an Ellis bump post. The track in the building is supported on 32-in. steel girders



EXTERIOR OF SUB-STATION AT GOSHEN

LOW-TENSION LINE
 Outside corporate limits of towns, the single 3-0 grooved trolley wire is supported by a bracket pole line 21 ft. above the track. The poles, practically all of which are chestnut, are 30 ft. long. They have 7-in. tops and are set 100 ft. apart. The butts of these poles, as well as those of the high-tension line, are treated with Carbolineum. A single cross-arm carries two No. 9 iron extra BB telephone wires and a 700,000-circ.-mil aluminum feeder. In corporate limits the feeder is



INTERIOR OF GOSHEN SUB-STATION

about 12 ft. above a concrete floor which is at the same level as the boiler room floor. Only cars with hopper bottoms are accepted by the company, and the contents of these are easily dumped into the storage space under the track, from which it is hauled in trucks into the firing alley.

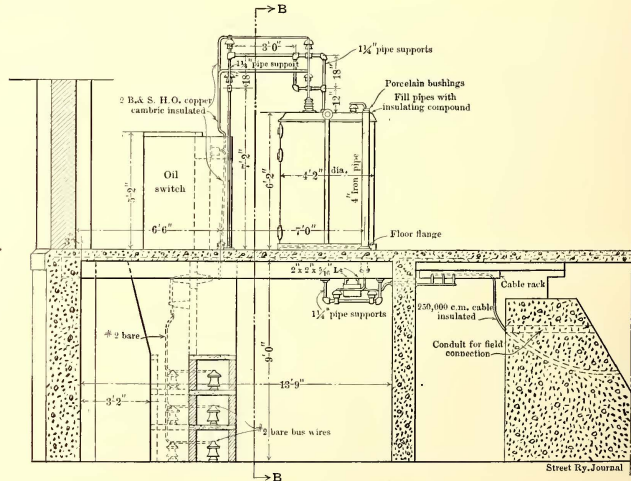
STATION LIGHTS

The station is well lighted by arc lamps suspended from ornamental brackets bolted to the walls and by clusters of incandescent lamps placed on the walls and at other convenient points.

THE HIGH-TENSION LINE

After leaving the station the high-tension wires, consisting of No. 4 copper conductors, are carried on a separate pole line to two sub-stations, one at a point midway between Warsaw and Goshen and the other at the southern limits of Goshen. The high-tension poles are 35 ft. long and are spaced 125 ft. apart. The three conductors are carried on a single cross-arm 10 ft. long, which is secured to the pole by means of a brace of angle iron in addition to the usual bolt at the gain. Two of the 408-B Locke insulators are located on one side of the pole at a distance of 36 ins. apart, while the remaining one is on the end of the cross-arm nearest the track. The lines are transposed every 10,000 ft. Through towns the high-tension line follows the track, but in corporate limits, and at highway crossings as well, extra high poles are employed. Where telephone lines are crossed, suitable baskets serve to protect these latter lines in the event of breakage of the high-tension conductors.

covered with insulation, but is otherwise bare. At intervals of ten poles, or 1000 ft., it is tapped in on the trolley line by means of regular feeder clamps and 2-0 lead-in wires. Garton lightning arresters are located on every twentieth pole a



CABLE ARRANGEMENT OF GENERATOR AND TRANSFORMER CONNECTIONS

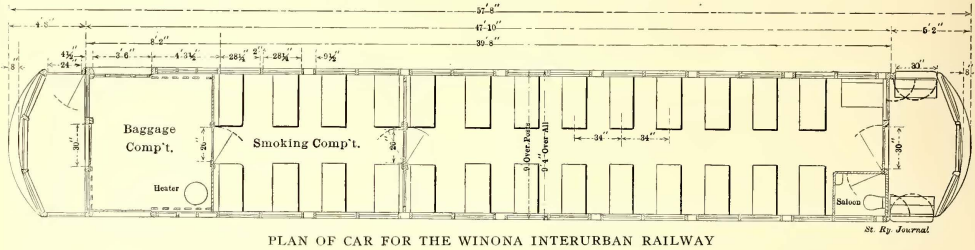
few feet below the bracket arm. These are grounded both to the rail and to a 7/8-in. gas pipe driven in the ground. At intervals of one-fourth mile, and at sidings as well, telephone jack boxes are located on the poles.

SUB-STATIONS

The two sub-stations are of similar construction. The

notable feature of the car bodies is their width, which is 9 ft. 4 ins. over all. The inside width is in fact only a few inches narrower than regular Pullman cars. The seats, which are provided with arm rests, are 40 ins. long and seat comfortably two people above the average size. Comfort to passengers was the prime reason for adopting this unusual width of cars. The cars are equipped for single-end operation. They are 57 ft. 8 ins. long over bumpers and have seats for fifty-four passengers in addition to the usual benches in the

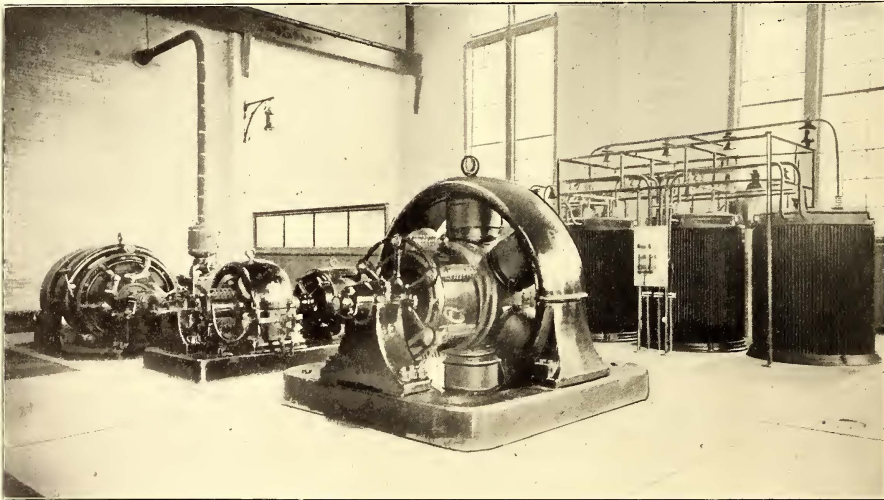
was followed in covering the heater pipes along the sill plank. A wood footrest extends out from the top of the sill plank over them, and the usual grated pipe covering between seats is straight and is screwed to this footrest. This construction not only removes the liability of shoes being burned by the pipes, but also prevents thoughtless or careless passengers from spitting on and behind the pipes. The cars are fitted with Christensen straight air brakes, and in addition are provided with Peacock hand brakes. The bodies are mounted



baggage compartment. This compartment is separated from the motorman's cab by a bulkhead which was built largely with the idea of adding strength to the car body. A sliding door is placed in the bulkhead, but with the exception of this one all the doors in the car are hinged. The toilet room in the rear of the passenger compartment is provided with a Dumer flush water closet which is supplied with water from

upon Baldwin trucks having a wheel base of 6 ft. 10 ins. These are provided with 36-in. steel-tie wheels and treads $3\frac{1}{2}$ ins. wide and flanges measuring $1\frac{1}{8}$ ins. deep and $1\frac{3}{8}$ ins. wide.

The electrical equipment of the cars was furnished by the Allis-Chalmers company. The four 75-hp motors are controlled direct by an Allis-Chalmers controller in the cab.



AUXILIARY AND SUB-STATION APPARATUS IN GENERATING STATION

a tank overhead. An enameled zinc lining in imitation of white tile greatly improves the sanitary condition of the toilet room. The passenger compartments of the car are finished in inlay mahogany and the floor is covered with inlay linoleum. Particular attention was given the lighting. In addition to a meridian lamp in the ceiling opposite each pier post, ornamental electroliers supplied with round frosted incandescent bulbs are placed on the deck sills immediately over each seat.

A Peter Smith hot-water heater is located in the rear portion of the baggage room. A somewhat unusual practice

The design of the controller, which is provided with two blow-out coils, is such that current is cut off from the motors even when the car is starting without any burning of the contact fingers. An unusual feature of the controller is that which by the use of the reverse handle permits the motor cut-out switch to be operated without removing the controller cover.

Particular attention was given to the wiring under the car. This is all in iron pipe conduit. Before being drawn into the conduit, however, the unusual precaution was taken of drawing the wires into cotton hose. The conduits are run from

the controller to the motors and resistances with as few bends as possible. Each of the two 2½-in. pipes carrying four resistance cables terminate near the rheostats in a specially designed junction box. The single wires leading to the proper rheostat terminal continue from the box in 1-in. cotton hose and in pipe conduit. The motor leads terminate in a specially designed junction box attached to the center sill of the car. The choke coil in the trolley circuit is shielded by an iron box and all the leads from it, including that one going to the lightning arrester, are in conduit.

CAR HOUSE AND REPAIR SHOPS

At the present time the equipment is being cared for in the shops of the Winona & Warsaw Railway Company. However, plans are being completed for enlarging the shops either by the construction of additional buildings or by utilizing a building now used as a generating station.

OPERATING FEATURES

The cars are geared to 50 m. p. h., but a speed of one mile in 48 seconds has been attained. The run of 25 miles between Warsaw and Goshen is consequently made without difficulty in one hour, so that with single-car trains only two cars are required to maintain a one-hour schedule, which is operated. In the winter months the interurban cars run only to Warsaw, but during the summer season when the Winona Assembly is in session they will continue on to Winona Lake, where a loop terminal is provided. The scheduled speed is practically the same as that of the paralleling steam road, but partly because this road runs but three trains each way per day and because of the facilities for handling baggage offered by the electric line, the steam road receives almost no local patronage from traveling men having several pieces of baggage. The electric line is so located that the cars pass the principal hotels in the terminal cities as well as in the small towns. Arrangements have been made whereby trunks are received at these hotels and are put off immediately in front of the doors, so that when he uses the electric line the traveling man is relieved of the necessity of paying one or two dollars in transfer charges. Baggage up to 150 lbs. is carried free, and the point is made to carry trunks on every car. H.

per cent reduction from the regular round-trip rate. Children between the ages of 6 and 12 are given a one-half rate. School tickets with no limit as to the age of the purchaser are also sold at one-half the regular rate. The use of school tickets is limited to the hours between 7 a. m. and 5 p. m., and a certificate is required from the school superintendent



INTERIOR OF STANDARD CAR

or teacher. At the present time freight in car-load lots cannot be handled because of lack of facilities, but express cars have been ordered and it is the intention to build up an extensive freight traffic. An independent station and ticket office is maintained at Warsaw, but at Goshen the company and the Northern Indiana Railway Company have a union station. At Milford the station is in a hotel, and at another point a restaurant man acts as agent. New stations will be built at New Paris and Waterford, and small way stations or shelters will be built at all of the cross-roads as required by law in Indiana.

The general offices of the company are at Winona Lake and are in charge of H. S. Dickey, general superintendent, to whom this publication is indebted for much of the information in this article. R. M. Murray as engineer of the system has general supervision of construction work, while the power house and rolling stock are under the immediate charge of Charles Sigler, master mechanic. Sol C. Dickey, president, and J. F. Beyer, vice-president of the system, are active in the supervision of the operation of the road.

Probably the most out of the ordinary operating feature of the road is that it is not operated on Sunday. From a financial standpoint this is largely due to the fact that Sunday operation would detract from the moral atmosphere of the Winona Assembly, and this is regarded of more importance than the slight increase of revenue that would be derived from Sunday operation, especially as the road has shown net earnings from commencement of operation largely in excess of fixed charges under the present plan of operating but six days in the week.



STANDARD CAR USED ON THE WINONA INTERURBAN RAILWAY

S. Hickey, general superintendent of the system, was formerly a steam road man, and regards this convenience to traveling men as of the utmost importance. For weights in excess of 150 lbs. the excess charge is 20 per cent of the ticket fare.

The regular fare is approximately 2 cents per mile. However, round-trip tickets good for thirty days are sold at a 10

OPERATING COSTS OF THE MODERN AUTO-BUS*

BY H. VELLGUTH,
Secretary of the German Street Railway Association

Despite the fact that auto-buses have been widely used in European cities for three or four years past, the writer has been unable to secure any useful data on their operating cost until within the last nine months. Part of the information thus obtained was extracted from the published reports of German omnibus companies, but by far the most valuable material has been secured either by oral intercourse or personal observations on the spot—particularly as regards conditions in England.

For convenient reference the writer has classified the companies investigated and given the principal features affecting their operation in condensed form, as follows:

GERMAN UNDERTAKINGS

Dettmardsdorf-Marlow, in Mecklenburg, length 3.8 miles; macadam paving; fairly level except grades of 1.32 and 1.18 on some 700-m stretches; two Daimler buses (one as reserve) rated at 16 hp to 21 hp at 700 r. p. m. to 800 r. p. m., with four speeds from 2.9 miles to 11 miles; actual maximum speed attained, 13 miles; weight, 3.9 tons empty; two compartments, one seating five second-class and the other eight third-class passengers, together with two extra seats near the driver; medium speed, 9.3 miles; no stops; in operation since Aug. 1, 1904; operating report covers twelve months to Aug. 1, 1905; five daily trips, totaling 14,118 miles; operated by the management of the Mecklenburg State Railways at Schwerin.

Partenkirchen-Mittenwald-Walchensee-Kochel, length, 32 miles; good mountain road; steepest grades, 5 per cent to 5½ per cent for a distance of 2.8 miles and 5 per cent for 1.7 miles; three N. A. G. buses (one reserve) of 20 hp to 24 hp capacity at 1300 r. p. m.; four speeds ranging from 3.1 miles to 21.7 miles; open construction of automobile character and roof for baggage; carries fourteen passengers; weight of bus when empty, 1.9 tons; running speed, including stops, 9.3 miles; in operation since June 1, 1905, and run only from June to the end of September; two to eight trips per day in each direction; operating report covers June 1 to the end of September, 1905; total run, 20,901 miles; operated by a Munich stock company and the postmasters in Partenkirchen, Mittenwald and Walchensee.

Southofen-Hindeland, 4.7 miles long; Bavarian government road not well suited for automobiles; grade up to 7 per cent; two 28-hp Daimler passenger vehicles; weight, 4.5 tons empty; four speeds from 3 miles to 13 miles; twenty-one seats; one 21-hp freight, rubber-tired vehicle; weight, 3.5 tons empty; maximum speed, 11 miles; carries 3 tons and has four speeds ranging from 3 miles to 11 miles; both styles of cars capable of ascending 12 per cent grades; sixteen daily passenger trips in summer and fourteen at other seasons; freight service according to requirements; opened on Aug. 1, 1905; operating report covers Aug. 1 to Dec. 31, 1905; in 184 days 11,441 passenger-miles were run and 2416 freight-miles; operated by the Royal Bavarian Traffic Ministry and the local postmasters.

ENGLISH UNDERTAKINGS

In London some 500 to 600 gasoline buses are now in service, the earliest ones having now run about twenty-one months. The paving is very good and is largely wood. The streets are mainly level. There are also about forty vehicles distributed in Hastings, Birmingham and Bath. One would

suppose that where so large a number of vehicles is in use it would be easy to secure the desired operating costs, but unfortunately this is not true, for most of these buses are owned by large companies whose securities are material for active speculation, hence the operating officials have been chary in giving out figures. However, a paper read by Mr. Manville before the London Automobile Club early this year provoked such attention, owing to the unfavorable light in which he placed the auto-bus as compared with the tramway, that the friends of the former were forced to produce real operating statistics.

AUTO-BUS STATISTICS

From the experience gained in Germany and England the writer has prepared a number of tables covering the approximate costs of auto-bus service for certain conditions as shown by the following figures:

COST OF A CITY INSTALLATION TO GIVE 630,000 CAR-MILES ANNUALLY

According to London conditions, 29,360 car-miles a year requires twenty-one vehicles, of which six must be kept as reserve. The daily work of a bus is therefore equal to 620,000 ÷ (15 × 365), or 113.4 miles.

A—Cost of Installation

21 cars at \$4,500 each without tires.....	\$94,500.00
21 sets of tires at \$637.50 each.....	13,387.50
21 × \$1,500 for storage, shops, operating capital, etc.....	31,500.00
Total	\$139,387.50

B—Operating Costs

	Per Car Mile	Total
General management .....	.01	\$6,250.00
Car men .....	.0344	21,500.00
Inspection .....	.0028	1,750.00
Gasoline .....	.052	32,500.00
Lubrication and lighting .....	.012	7,500.00
Tire replacement .....	.056	35,000.00
Maintenance of vehicles .....	.044	27,500.00
Insurance .....	.003	1,875.00
Total operating cost .....	.2142	\$133,875.00

C—Financial.

Interest at 4 per cent, sinking fund 1 per cent .....	.01116	\$6,969.50
Depreciation of vehicles (without tires) for every 124,000 miles, \$4,500.....	.036	22,500.00
Depreciation and maintenance of building, 1.5 per cent of \$20,000.....	.00048	300.00
Depreciation of shops and equipment, 16 per cent of \$6,250 .....	.0016	1,000.00
Total .....	.04924	\$30,769.50

Grand Total

Operating cost .....	.2142	\$133,875.00
Interest and depreciation.....	.04924	30,769.50
Grand total .....	.26344	\$164,644.50

The use of double-deck vehicles with thirty-four seats will therefore cost per seat-mile .26344 ÷ 34, or \$0.774 cents, and 30 per cent use, \$.258 cents per passenger-mile. This latter figure must be the fare to realize 4 per cent on the investment. The average fare, based on street railway experience that there are four passengers per car-mile, would be .26344 ÷ 4, or \$.06586. The corresponding costs per seat-mile on a street railway paying 4 per cent on the investment, giving the same service with cars seating twenty-four to thirty-seven passengers, and under German conditions, would vary from .00848 cents to .01308 cents, as against .02548 cents for the auto-bus.

For a country service with open vehicles weighing 1.9

* Abstract of an article in the Sept. 6 issue of the "Archiv für Eisenbahnen."

tons and carrying fourteen passengers, the minimum costs would be as follows for the conditions given herewith:

Length, 7.44 miles; schedule, 120, 60 and 40 minutes for a daily service between 5 a. m. and 9 p. m., equivalent to 43,400, 86,800 and 130,200 car-miles annually.

A—COST OF INSTALLATION.

	43,400		86,800		130,200	
	Per Car Mile.	CAR-MILES Total.	Per Car Mile.	CAR-MILES Total.	Per Car Mile.	CAR-MILES Total.
2 cars (1 reserve), 3 cars (1 reserve) and 5 cars (2 reserve)—at \$3,750 each without tires.....		\$7,500		\$11,250		\$18,750
2, 3 and 5 sets of tires at \$540 each.....		900		1,350		2,250
Storage and shops.....		3,500		3,750		4,250
Shop equipment.....		1,500		1,500		1,750
Miscellaneous and operating capital.....		1,350		1,400		1,750
Totals.....		\$14,500		\$19,250		\$28,750

B—OPERATING EXPENSES.

	.0172	\$750	.0108	\$950	.0076	\$1,000
Management, legal, stationery						
Cost of two, four, six drivers, including all appurtenances, at \$3,750.....	.0172	750	.0172	1,500	.0172	2,250
Gasoline.....	.0300	1,312.50	.0300	2,625	.0300	3,937.50
Maintenance of cars.....	.0480	2,100	.0480	4,200	.0480	6,300
Lubrication and lighting.....	.0120	525	.0120	1,025	.0120	1,575
New sets of tires for every 10,168 miles at \$4,500 each	.0440	1,925	.0440	3,850	.0440	5,775
Fire and accident insurance.....	.0030	131.25	.0030	262.50	.0030	393.75
Totals.....	.1714	\$7,493.75	.1650	\$14,412.50	.1618	\$21,211.25

C—INTEREST, DEPRECIATION AND SUMMARY.

Sinking fund 1 per cent, interest 4 per cent.....	.0164	\$725	.0108	\$962.50	.0108	\$1,437.50
Depreciation of cars, \$3,750 for every 83,000 miles.....	.04	1,750	.04	3,500	.04	5,250
Depreciation of buildings, 2 per cent.....	.0012	50	.0008	57.50	.0008	62.50
Depreciation of shop equipment, 16 per cent.....	.0044	200	.0028	240	.0020	255
Total C.....	.0020	\$2,725	.0544	\$4,760	.0536	\$7,005
Total B.....	.1714	\$7,493.75	.1650	\$14,412.50	.1618	\$21,211.25
Grand total.....	.2344	\$10,218.75	.2194	\$19,172.50	.2151	\$28,216.25

According to these figures the seat-mile would cost \$.2344, \$.2194 or \$.2151 ÷ 4 equal to \$.0536, \$.0515 or \$.0513. Assuming an average seat use of 50 per cent, the cost per passenger-mile would be \$.0334, \$.0312 or \$.0306.

It appears that on the smallest railway systems the total cost per car-mile runs from \$.096 to \$.160. The higher figure is based on a one-hour headway and the lower on a more frequent schedule. Under the same seat-use conditions as before (an average of seven passengers), the cost per passenger-mile would vary from \$.0137 to \$.0228. It will be seen that in this case also the auto-bus is the more expensive. If the investigation is carried further it appears that the auto-bus does not compare favorably wherever the headway is less than two hours.

A GUIDE TO CINCINNATI

Robert Lee, superintendent of the Cincinnati Traction Company, has compiled a pocket booklet containing a complete guide to the city. All streets, public buildings, flats, apartment houses, interurban railways, railroad depots, hospitals, places of amusement, parks, hotels, colleges, banks, etc., are located and the nearest street car line indicated. The book is to be distributed among the conductors of the Cincinnati Traction Company so that they may direct passengers to any points and be able to answer questions about the city.

THE DISTRIBUTION OF POPULATION BY FACILITIES OF RAPID TRANSIT

Lynden Macassey, M. A., LL. D., secretary of the late Royal Commission on London Traffic, recently presented some interesting facts and statistics upon this subject at the meeting of the British Association at York. According to Dr. Macassey the only permanent and comprehensive cure for concentrated population in modern cities is by adequate provision of means of rapid transit. Instances are cited from Liverpool, in certain of whose suburbs the houses erected between 1900 and 1903 increased 85 per cent, while within the city they decreased 40 per cent; from Leeds, where corresponding changes occurred following electrification; from Brooklyn, nine of whose outside wards increased in population between 1890 and 1900 100 per cent, while in the central wards the increase was only 18 per cent, etc.

The tendency of industrial progress is toward urban aggregation, as most industrial establishments naturally gravitate to the cities, principally on account of the special facilities afforded for sale and distribution, though fortunately few require location within the actual commercial center. The resulting direction of growth depends largely upon the discreet location of the railway and tramway lines. This is demonstrated clearly in the cases of Boston and St. Louis, as well as in that of London.

The 693 sq. miles known to-day as Greater London contain an estimated population of 7,150,000. Without adequate means of internal transit it is, however, evident that there must be severe congestion in the central districts, and without comprehensive means of transit great local concentration in outside districts, when only a few are opened up for residence. Both of these conditions are found in London to-day. In "Inner London" there is a population of 1,500,000, and no less than 25.4 per cent of it is living in overcrowded conditions, that is, with two persons per room in tenements of one to four persons per room. The lower East Side of New York is still more thoroughly congested. There are below Fourteenth Street and east of the Bowery 455,000 persons piled on 979 acres, 465 persons to the acre, or one-fourth of the population of Manhattan Borough actually living in one-twelfth of the area of the island, and this district was increased by 34 per cent at the last census. This section is made up largely of foreigners, and so far rapid transit facilities have not reached it, but when this is done the author did not think they could resist its dispersive force.

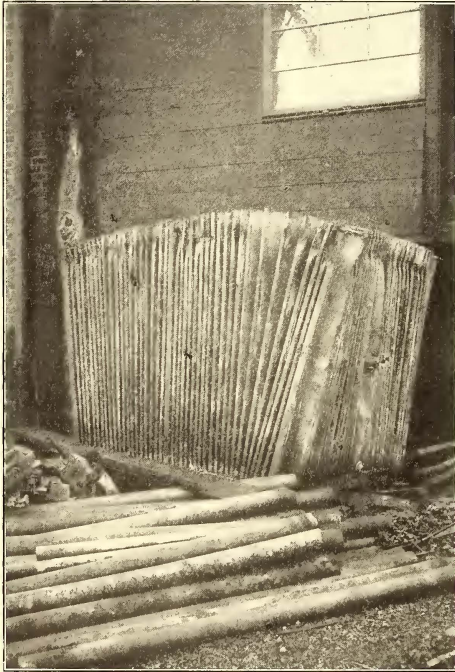
The three qualities of transportation service which affect the various classes of the community are (1) "time" of the journey from the place of residence to work; (2) the "cost" of the journey, and (3) the "convenience" of the agency of transit, in other words, its accessibility, frequency of service and comfort of traveling, etc. In America the dispersive power of the uniform 5-cent fare is that which is relied upon; but uniform fares have been tried and have failed in Germany and will always, in the speaker's opinion, under European conditions.

The speaker then defined the functions of the different means of transit, viz, surface tramways for the short haul, subways or elevated railways for the medium length of haul, and suburban railroads for the longer distances. For effective distribution the systems should be worked in harmony as in Boston.

The Ohio State Railroad Commission has notified all the electric railways in the State that they will be expected to file their freight and passenger schedule and tariffs by July 16.

MEETING THE COMPLICATIONS WHICH FOLLOWED A FIRE IN THE POWER HOUSE OF THE DETROIT, YPSILANTI, ANN ARBOR & JACKSON RAILWAY

A recent fire in the power house of the Detroit, Ypsilanti, Ann Arbor & Jackson Railway at Ypsilanti, Mich., emphasized the necessity of installing oil-cooled transformers in a part of the building separated by fire walls from the engine



CASE OF BURNED OIL-COOLED TRANSFORMER

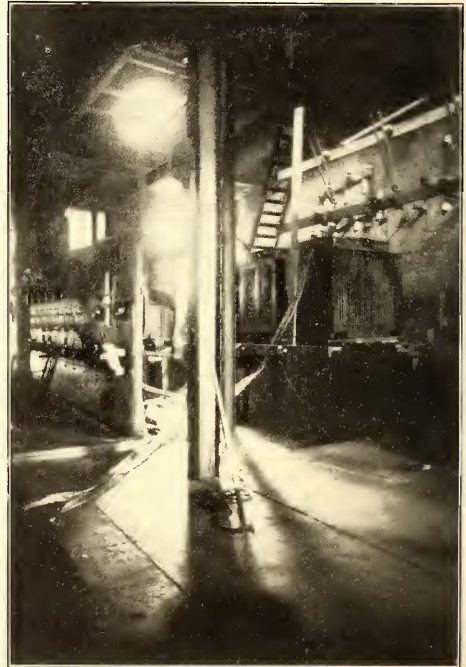
rooms, and taxed the ingenuity of the management to devise means for keeping the systems in operation.

About 9:30 o'clock on the day of the accident a 500-kw transformer located in the basement of the power house was discovered to be on fire. The station was shut down immediately and the city fire department called. Three lines of hose were turned on the outside of the transformer case to prevent it getting hot and bursting, for in such an event the burning oil would have flown over the basement floor and caused the fire to spread. When the fire was finally extinguished, at 12 o'clock, it was found that the direct-current switchboard near the transformer had fallen down, that the alternating-current board was badly cracked, and that the insulation had been burned off the lead-covered cables connecting the machines, switchboards and transformers for a distance of 30 ft. from the burned transformers. The framework carrying the high-tension switches had also been destroyed. C. M. Bange, master mechanic of the system, began at once the work of restoring the service. At 1:30 o'clock one 250-kw direct-current machine was put into operation. At 5:30 o'clock a second one was started. Three 200-kw transformers were obtained from a sub-station, and with the aid of these two 250-kw alternating-current machines were

started at noon Tuesday. The following Friday all of the eight generators in the station were in operation.

In order to get the machines in service as soon as possible, some interesting emergency features were resorted to. The direct-current instruments and switches were mounted on a temporary wood board and the direct-current cables from which the insulation had been burned were laid out on top of the main floor and temporarily insulated by encasing them in two-inch linen fire hose. A temporary high-tension frame for the stick type switches was also constructed. When the station was shut down several cars were left dead on the line. Wagons were put into service by the company to carry the passengers into the larger towns.

Examination of the transformer in which the fire occurred disclosed the fact that the coils were not injured beyond being water soaked, although the corrugated case was damaged beyond repair. The fact that the oil burned at the surface only and that this surface was kept above the coils



TEMPORARY FRAME FOR HIGH-TENSION SWITCHES AND HOSE IN WHICH THE BURNED CABLES WERE PLACED

by water thrown in by the hose saved the coils from injury. The water-soaked coils were first dried out by surrounding them with steam pipes for three days, and the drying was finished by sending a small current through them for a period of two days. For the corrugated transformer case there were substituted two cases without corrugations, an inner one filled with oil and an outer one in which water is kept circulating by means of a hose. The transformer encased in this manner was kept in operation for a month or more. At an average of about 50 per cent of full load it ran at a temperature of approximately 120 degrees. Mr. Bange has designed a permanent case for the transformer that will hold about six barrels of oil. The oil will be cooled by water pipes, all the joints in these being outside of the case.

STREET RAILWAY PARK SERVICE AT BURLINGTON, VT.

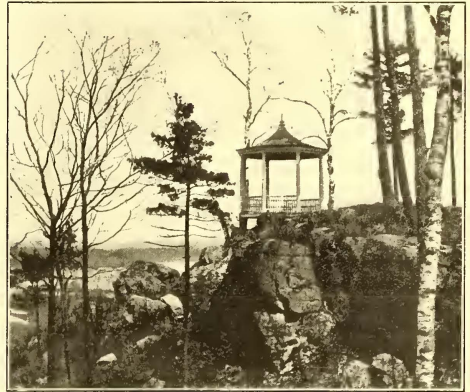
The location of Burlington, Vt., on a strip of land about 2 miles in width, extending from the mouth of the Winooski River to a point 6 miles south, along the east shore of Lake Champlain, renders it one of the most attractive cities in the East. Under such favorable conditions as to surroundings, the incentive to park development has been strong, and the lines of the Burlington Traction & Military Post Street Railway Company are an important factor in rendering the city's pleasure grounds accessible to the population of the community. This year the estimated population of Burlington is 22,000, but within a three-mile radius of the city hall are 30,000 inhabitants.

The principal parks served by the company are Battery Park, Fort Ethan Allen Park and Queen City Park. The first-named pleasure ground is a broad esplanade with military bastions overlooking the lake front near the shipping district. The Adirondack Mountains are visible directly across the lake. This park is a quiet spot without amusement features, but on account of its accessibility from the business district it is largely patronized. Twenty-minute service is given to this resort and also to Fort Ethan Allen Park, which is the most noted recreation ground at the north of the city.

Two typical photographs of Fort Ethan Allen Park are shown herewith. The park covers an area of about 15 acres, and about 57 acres in addition have been set apart for public use in the future. The park belongs to the city, no admission being charged for its use. A handsome stone gateway and the stone tower shown were given by the Society of the American Revolution. The beauty of the grounds and the

the river in the near future, to increase the attractiveness of this park.

Twenty-minute service is also given to the village of Winooski, where excellent views may be had of the Green Mountain ranges, the fare for the trip being 5 cents. The Military Post line handles a large passenger traffic over a 6-mile route between Burlington and the government post at Fort Ethan Allen, via Essex Junction. Twelve troops of



THE PINNACLE, ETHAN ALLEN PARK

United States cavalry and two of artillery are stationed here.

At the south end of the city is another natural recreation spot called Queen City Park. This also has a twenty-minute service, double-headers being run to and from the park on Sundays. A single fare is collected. A large summer hotel is located on the grounds, and the place is inhabited by numbers of cottagers who make the trip daily to and from the city by trolley. Swings, rustic chairs, tables and other picnic facilities for visitors' use are provided. A large golf course is served by the same line. The company also publishes a neat folder, describing the attractions of the parks on its system.



THE TOWER, ETHAN ALLEN PARK

superb view from the memorial tower have drawn many passengers thither on the street railway, who would otherwise fail to reach the spot. A 5-cent fare is charged, and on the return trip transfers are given to any other point reached by the company's lines. The tower is located on the original farm owned by Gen. Ethan Allen, and it is 24 ft. square at the base, 18 ft. square at the neck and 40 ft. high. It was dedicated on the 128th anniversary of the Battle of Bennington. It is planned to establish a fleet of rentable boats on

REVERSING A COMPOUND-WOUND MOTOR

In connecting a compound-wound motor to operate in both directions, unless precautions are taken to prevent it there exists the liability of having the two field windings assist in one direction and oppose in the other. This condition is especially likely to obtain when reversal of rotation is effected by reversing the field. In such cases the precaution consists in being certain that both field windings are reversed. In railway work, however, the motor used is generally a machine adapted from generator duty and the starting device is an ordinary car controller, which effects reversal of rotation by reversing the armature on moving the reverse lever to reverse position. With such a controller, then, it is necessary to simply connect the trolley, ground and resistance wires to their respective controller posts. Connect the armature terminals to posts A_1 and AA_1 or to posts A_2 and AA_2 and the series field winding to the corresponding controller field posts. The shunt field is connected permanently across the line. The controller then handles the armature and series field as if they were the windings of a series car motor and it does not handle the shunt field winding at all. The only precaution to be taken is that the two field windings be so connected in the first place that they turn the armature in the

same direction. Where the car controller used is the one that reverses the field instead of the armature, as in some of the older types of controller, the only change necessary is to connect the motor series field wires to the controller armature posts and vice versa. Where there is any doubt as to the regularity of connections, the series winding can be omitted, the controller field posts jumped and the machine operated as a simple shunt motor.

FIELD COIL ROASTING

A contributor writes that at the time the editorial on "Testing Motor Fields" was published in the STREET RAILWAY JOURNAL for Sept. 1, he was experimenting along the same lines, hoping to find a test to tell the difference between a good set of fields and a bad one. These experiments, conducted with a differential voltmeter applied across the standard and test fields carrying current in series, the latter being subjected to a mechanical pressure of about 200 lbs., seem to indicate that a well-roasted field is easily distinguished from a perfect one.

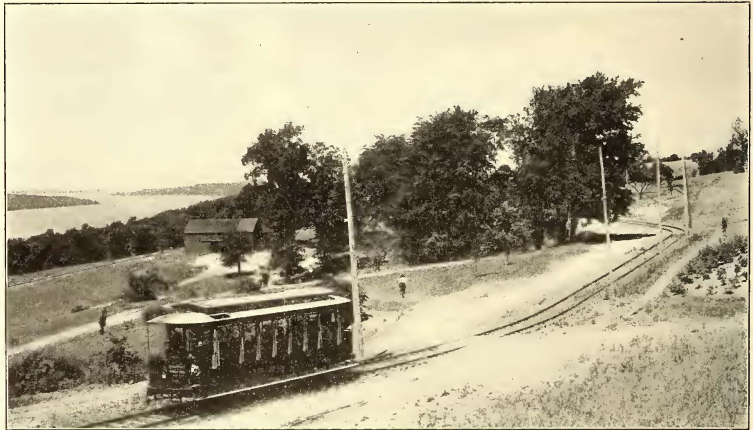
While it is easy to distinguish between these extremes, there is an intermediate condition which is not readily reached by tests such as those made. Thus, four new coils against four new ones gave a differential deflection of 0. Each of the new sets balanced against a suspected set gave a differential deflection of two volts (four GE-1000 coils, current 30 amps, Weston 50-volt differential meter). On balancing good and bad coils against each other one at a time, the entire differential deflection of 2 volts was found to be due to deflection of two coils,

the remaining two showing perfect. The coils were then ripped open and all looked bad enough, there being no doubt about roasting in all. Each coil winding was then cut in the center, to divide it into halves, 200 lbs. weight laid on each coil, and the insulation tested between the severed sections with a 500 voltmeter on a 480-volt line. The two coils indicated low by the differential voltmeter showed zero insulation at 480 volts; the two that showed up well in the differential test showed perfect insulation at 480 volts, although it could be seen that the cotton insulation, the only kind on the two good ones, was parched. While the tests so far are too insufficient in number to draw conclusions, it would seem that the field insulation might be considerably deteriorated without immediate bad effect on the operation of the motor. This possibility suggests that where sparking indicates roasting, first, eliminate other probable causes, such as error in the set of the brushes or loose or open frame parts; then try the motor and if it still sparks, go after the fields and armature with the testing machine, and where there is doubt, with the naked eye.

The Ohio Supreme Court has held that cities may grant street railway franchises where part of line is on right of way.

SCENIC LINES IN ITHACA

To the Ithaca Street Railway and its progressive management is due much of the picturesque development Ithaca has enjoyed in recent years. Renwick Park is now accessible by the company's lines; Cornell Heights, a beautiful residence section to the northeast of the city, was opened through its enterprise, and many of the wonderful Ithaca views only available to the pedestrian and hill climber in former years are now made possible to all. One of the most romantic trolley rides imaginable is the ride locally known as "The Loop." The visitor to Ithaca at this time will notice a number of new closed cars on this section of the company's system which were built in Philadelphia at the works of the J. G. Brill Company and are exact duplicates of other cars now operating on the lines in Ithaca. The complete itinerary of cars over "The Loop," starting from the Lehigh Valley Railroad station, is through the city of Ithaca to Cornell University Campus, a distance of $2\frac{1}{2}$ miles, the maximum grade being about 13 per cent; Cornell Heights is next reached, the return journey being made to the southerly terminus of the



CAYUGA LAKE, SEEN FROM CAYUGA HEIGHTS, ITHACA, N. Y.

road, thus completing the loop; the entire distance is about $4\frac{1}{2}$ miles. Cascadilla Glen, Fall Creek Gorge and "Inspiration Point," as their names will imply, are the particular beauty spots of the ride. The accompanying illustrations tell at a glance the extraordinary beauties of this country. The open summer cars which are portrayed therein run over that portion of the system known as the Cayuga Heights Railway, skirting the lake for the entire distance, through Cayuga Heights, another residential suburb of Ithaca, and on to Renwick Park, situated on Cayuga Lake. This line has a continuous grade of about 10 per cent and is operated largely—as is the Cornell Heights loop—as an excursion road during the summer months. In addition the patronage derived from the students and faculty of the University has a great bearing on the receipts of this line. Another branch of the system is the Cayuga Lake Electric Railroad, running from the center of the city to Renwick Beach Park, a distance of 2 miles. Unlike other lines in the vicinity, this line is practically level and its chief source of revenue is the summer park travel.

The open cars mentioned are also of Brill manufacture; the closed cars are of that builder's standard construction and measure 18 ft. 10 ins. over the panels; length over the crown pieces and the vestibules is 28 ft. 3 ins.; width over the sills,

7 ft. 10½ ins. The type of truck is the No. 21-E with a wheel base of 7 ft.; motors installed are of 40-hp capacity each. Specialties of the builder used on these cars are seats, sand boxes, angle-iron bumpers, gongs, signal bells, etc.

MILAN GOLD MEDAL FOR B. R. T. SOCIAL WORK

William H. Tolman, the vice-president of the jury on political economy at the Milan Exposition last summer, who has just returned to the United States, has announced that the gold medal for "social economy" has been awarded to the Brooklyn Rapid Transit for its arrangements for the comfort of its employees in the way of reading rooms and clubhouses at the various car houses. M. le Mercier, the chief engineer of the French railways in the East, who was the judge, was much interested in the photographs exhibited by the Brooklyn Rapid Transit, depicting the comforts enjoyed by motormen and conductors in their leisure hours. As is well known to readers of the STREET RAILWAY JOURNAL, the principal clubhouse of the Brooklyn Rapid Transit Benefit Association is in East New York, at Broadway and Fulton Street, and there are eight smaller clubhouses, situated in the company's car houses in various parts of Brooklyn.

The Y. M. C. A. of the Los Angeles-Pacific Railway employees at Sherman—an institution that has flourished because of the enthusiasm of the men themselves and the generous aid given them by the company—was given another benefit in the form of proceeds from a balloon route excursion

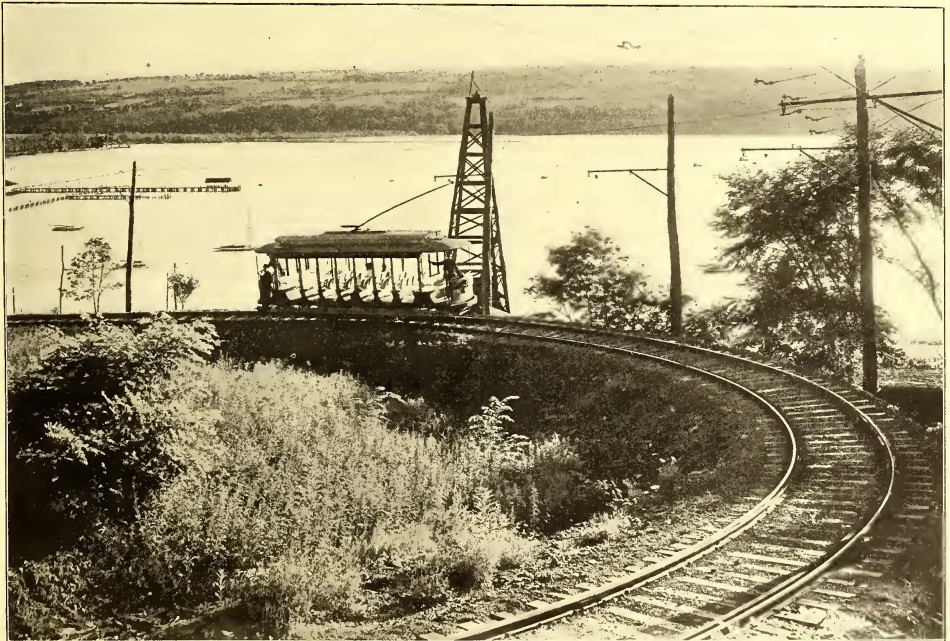
TRACKLESS TROLLEY AT MILAN

One of the interesting features of the Milan Exposition was the daily practical operation of a trackless trolley built by the Societa per la Trazione Eletttrica, of Milan. The same company had already built a number of these vehicles



TRACKLESS TROLLEY STEERING AROUND A WAGON

for both freight and passenger work, notably the Spezia-Portoverde line described in the STREET RAILWAY JOURNAL of May 12. The illustration shows how easily an omnibus of this type can be steered on the roadway without leaving the wire, even at speeds up to 25 km (15 miles) an hour. In



A RIDE ALONG THE LOOP ROUTE OVERLOOKING CAYUGA LAKE

sion on Sept. 21. The trip included all resorts on the route, in cars donated by the company and under special direction of an extra committee of the railway Y. M. C. A.

view of the little capital available for constructing standard electric railways in Italy, the excellent roads of that country, this method should find wide application there.

A SIMPLE ELECTRIC SIGNAL SYSTEM

A great fault of most signal systems for electric railways lies in their complexity, since the more complicated the apparatus the greater is the possibility of failure. It was the recognition of this fact that led to the invention of the Natchod system, made by the United States Engineering Company, of Philadelphia. In this method the necessary elements have been reduced to the minimum number, there being only one line wire, no moving parts in the trolley switch and a relay perfectly sealed in an oil tank.

The system is for single-track electric railways, or for double-track lines wherever it is necessary to converge them for a distance into single track. It indicates automatically the presence and direction of a car on the block of single track, by signal lights at the turnouts forming the terminals of the block.

The equipment, in duplicate at each end of the block, consists of a signal box, Fig. 1, containing the lights; Fig. 2, the relay; and an overhead trolley switch, Fig. 3, located in each branch of the wire. A single overhead wire runs the length of the block, connecting the boxes.

On an unoccupied, or "clear" block, white signal lights are always burning. The signal is automatically set when a car enters a block, by the passing of the trolley wheel under the switch on the wire. This temporary bridging of the two parts of the switch by the metallic trolley wheel, which is done without movement of the switch itself, actuates the relay. The white lights are thereby extinguished, and a cautionary green light is displayed at the entering end of the block, and a red light, a danger signal, at the other end. When the car passes out of the block its trolley runs under a switch similarly situated, extinguishing both lights and leaving the block clear, with the white lights burning.

The signal box with the lights is mounted on a pole about 100 ft. in advance of the entering car, as it passes under the switch, so that the motorman must see the green lamp light up before he proceeds. This gives him *prima facie* evidence that the red danger signal is displayed at the far end, since the two lights are in series; and one cannot burn without the other.

By a simple counting mechanism in the relay any number of cars up to fifteen may enter the block in succession and occupy it at the same time, and cars may be continuously entering and leaving, but the lights will remain so long as there is a car on the block. The signals will indicate clear only when the number of contacts at the leaving end equals that on the switch at the entering end.

To prevent change of signals at the distant end, when a car has entered the block, a cut-out magnet is arranged in that relay to open the circuit and render that trolley switch inoperative. Should a motorman for any reason improperly enter a block against a red light—which indicates an approaching car—his car cannot change the signals as previously set. This is important in placing the responsibility for an accident caused by such an occurrence; and the motorman's knowledge of the fact that he cannot destroy the evidence of his passing the light will restrain him from attempting to disobey the signal set.

The circuits are arranged so that, on the resumption of

power after a temporary interruption, the signals will reappear, indicating the same as before the interruption.

The signal box shown in Fig. 1 is of cast iron, in two parts. It is weather proof. All abutting surfaces are provided with dustproof felt gaskets. The upper part, bolted to the pole, contains the three signal lamps and the lenses, which are provided with hoods to prevent false illumination from outside light. There are also hoods in the interior, confining the light of each lamp to its own lens. The five incoming wires pass into the case from below through watertight bushings, and are provided with enclosed fuses. The entire front is hinged to give access to the lamps and fuses. The lower part of the box, containing the oil, hangs from the upper by studs and encloses the relay, which is removable as a unit. All connections from the relay to the lamps above are made by spring contacts, so that merely by taking off four nuts a relay may be removed and another substituted without disturbing the wiring in any way.

The relay shown in Fig. 2 controls the circuits of the signal lamps, and is actuated by the short-circuiting of the switch by the trolley wheel. In other systems it has often happened that a relay properly installed and adjusted has failed through the gradual loosening of screws and nuts induced by the constant hammering of the magnets. In this signal the relay consists of a number of magnetically operated switches completely immersed in a tank of oil and effectually sealed against the entrance of all foreign matter. The oil cushions the otherwise violent magnet blow so the parts cannot get out of adjustment through vibration. Among the mechanical advantages is the replacement of pivots by direct acting, short stroke and powerful plunger magnets. This construction results directly from the use of oil switches. Without these, multiplying levers would be required to increase the breaking distance on account of the arc. The ratchet and pawl mechanism is self-locking. The continuous lubrication prevents wear, while the breaking of circuits under oil obviates burning of the contacts. The adoption of oil for insulating and cooling purposes has become quite general with some

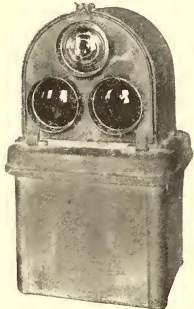


FIG. 1.—SIGNAL BOX

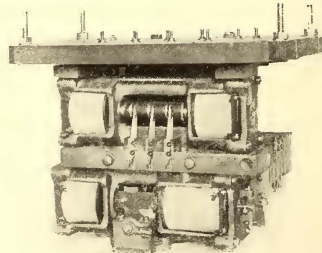


FIG. 2.—THE RELAY

classes of electrical apparatus, and its application to signal work should prove of the highest benefit.

The trolley switch, Fig. 3, is made of two pieces of light angle-iron placed back to back, with insulating blocks bolted to the ends. To these are secured two flexible metallic contact strips set at 45 degrees to the horizontal, one connected to the trolley wire, the other to the signal box. In operation the contact strips are bridged by the trolley wheel, they being formed to receive the wheel gradually and to avoid shock. The trolley wire is raised above the path of the wheel for the length of the contact strips. The switch is without moving parts, does not project below the trolley wire, nor does it require cutting of the latter. There are four switches for

each block, placed in advance of the frog. Their position overhead permits automatic action, and yet precludes tampering with the signals by unauthorized persons.

An important advantage, as already mentioned, is that this system requires but one line wire. The manufacturer recommends No. 12 iron wire, weatherproof insulation. Where the poles are rather well filled with wires, the hanging of several additional lines for a signal system entails quite an expense. It is evident also that, besides the saving in cost of wire and labor in erecting, the liability to accident to one wire is less than to several. The current in the line is one-half ampere when the signals are set. The line must be well protected

Kuhlman Car Company's plant in Cleveland will be delivered shortly. Additional proof of increased business is shown in yet another order for rolling stock of the typical closed type, the order being placed with the American Car Company. The single-truck type of semi-convertible car illustrated has been seen a number of times in these columns, and has found great favor in Tennessee, where the climate demands a car that is light and airy, the winters being for the most part short and mild and the summers long. The cars in the present instance measure 21 ft. 4 ins. over the end panels and 30 ft. 4 ins. over the vestibules; width over the sills, 7 ft. 10½ ins. Included in the framing are side sills 5 ins. x 8 ins., the



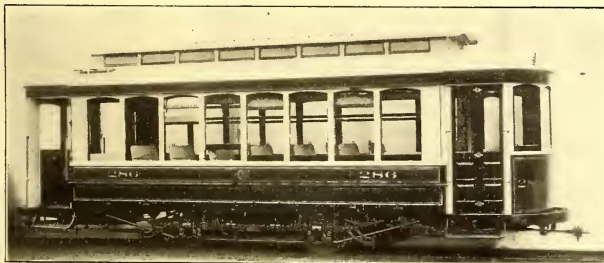
FIG. 3.—TROLLEY SWITCH FOR SIGNAL SYSTEM

with lightning arresters, which are not included in the signal equipment furnished.

The installation of this method comprises only the stringing of one line wire, the hanging of four trolley switches, the erection of two signal boxes on poles, and making taps according to the diagram furnished.

RAILWAY ACTIVITY IN CHATTANOOGA, TENN.

The Chattanooga Railways Company, which is a consolidation of the Rapid Transit Company and the Chattanooga Electric Railway Company, is now actively engaged in putting its road in first-class shape and planning extensions to its system. The entire work involves an expenditure of at least a million and a half dollars. The Market Street, Mission Ride, Chickamauga Park and Oak Street lines were re-laid last summer with new rails and ties embedded in concrete; a 7-in., 80-lb. rail, laid in concrete, is now standard with the company, and all the lines are being thus equipped as rapidly as possible. The same amount of activity has marked the company's building operations, car shops costing



SINGLE-TRUCK, SEMI-CONVERTIBLE CAR FOR CHATTANOOGA

about \$85,000 and a car house costing about \$140,000 now assuming definite proportions; these buildings are of concrete, brick, stone and steel and absolutely fireproof. By next spring it is expected that cars will be running over the several new divisions of the road now planned.

A number of Brill grooveless-post semi-convertible cars have been pressed into service on the Mission Ridge line, and ten more of the same type now being constructed at the G. C.

end sills measuring 4½ ins. x 8 ins.; the window system permits of a seat 36 ins. long and an aisle space of 22 ins. The inside finish of the car is of mahogany. The Brill No. 21-E truck on which the car body is mounted has a wheel base of 7 ft. 6 ins.

PROGRESS OF OPERATIONS ON VARIOUS PENNSYLVANIA BORES

Operations were recently begun in tunnel A of the Pennsylvania extension under the East River. This tube is the least advanced of the four, and the men are just now beginning to get out of rock into sand and gravel. This is the northernmost of the tubes. Tunnel B has gone out furthest into the river bottom from the Manhattan shore, the shield having progressed 900 ft. from the shaft near First Avenue. Tunnel C is about 600 ft. out from the shaft, and tunnel D nearly 900 ft. Tunnel A is only 150 ft. long.

The company has adopted a number of devices to protect the men from the ill effects of compressed air. The latest of these is an independent supply of compressed air for every lock. In case of fire or accident in a lock nearer the shore than the one in which the men are working, the men will continue to receive their air as though nothing had happened.

The Rochester, Syracuse & Eastern and the Rochester & Nyack Bay Railroads have entered into an agreement with several other roads in New York State to adopt the mileage-book plan in the sale of tickets for trips on the road. Under the agreement each one of the roads will sell \$12 worth of tickets for \$10, with the understanding that the conductor will not detach less than 10 cents worth of coupons at one time. None of the books will be accepted for use on the city lines. Besides the roads mentioned, those which have entered the agreement to issue the books are the Syracuse Rapid Transit Company; Auburn & Syracuse Electric Railway; Fonda, Johnstown & Gloversville Railway; Schenectady Railway; Utica & Mohawk Valley Railway; Elmira Water, Light & Railway Company.

LEGAL DEPARTMENT*

THE DOCTRINE OF "LAST CLEAR CHANCE"

A rule of law which is denoted by the phrase "Last Clear Chance" cuts a very considerable figure in determining the liability of street railroad companies for damages in accident cases. Concisely stated, the doctrine is that a "plaintiff may recover damages for an injury caused by the defendant's negligence, notwithstanding the plaintiff's own negligence exposed him to the risk of injury, if such injury was more immediately caused by the defendant's omission, after becoming aware of the plaintiff's danger, to use ordinary care for the purpose of avoiding injury to him." As street railway companies and the public have equal rights in the streets, and as persons are compelled to cross tracks upon which cars are practically in perpetual motion, complex and unique situations of fact are constantly arising. Under such circumstances it is only just to hold that an injured person had not subjected himself to all the possibilities growing out of an original slight act of negligence. On the other hand a railroad company should not be held liable under the "last clear chance" doctrine if its employee had acted with ordinary common sense and prudence in an emergency with which he was suddenly confronted.

The tendency is to administer the doctrine rather strictly against street railroad companies, and the recent decision by the Appellate Court of Indiana, in *Indianapolis vs. Bolin* (June, 1906, 78 N. E. 210) affords an illustration. It appeared that plaintiff turned to go across a street car track when the car which struck his vehicle was 225 feet away and beyond an intersecting street. The car was running at the rate of 20 miles per hour, and when about 60 ft. from plaintiff he discovered its excessive speed. He then quickly attempted to turn his horse aside and avoid a collision, but failed. When plaintiff first saw the car he underestimated its speed because of the distance, and assumed that it was far enough away to enable him to cross. No effort was made by the motorman to check the speed of the car prior to the accident, and it ran 140 ft. or more after the collision before it was stopped. It was held that plaintiff was not guilty of contributory negligence as a matter of law.

The following language from the dissenting opinion by Judge Comstock, in which one of the other judges concurred, contains a strong plea for the exemption of the company from liability.

"The motorman was not bound to anticipate that appellee would turn upon the track. When the appellee turned, the danger became imminent upon the hypothesis that he would continue across the track. The car was then 60 ft. off. It required this distance to stop the car. This gave the motorman no time to apprehend the dangerous situation in which the appellee had placed himself. Up to the time of plaintiff's entering upon the track, no danger was to be apprehended from the speed of the car, for the accident occurred between crossings. The motorman had as much reason to anticipate that appellee was in time to cross the track in front of the moving car as had the appellee to believe that he could do so. If two parties are contemporaneously in fault and by their mutual negligence an injury ensues to one, the doctrine of 'last clear chance' does not apply. *Robards vs. Indianapolis* St. Ry. Co., 32 Ind. App. 207; *Everett vs. Los Angeles*, etc., R. Co., 115 Cal. 105, 43 Pac. 207, 46 Pac. 889, 34 L. R. A. 350. If it had been apparent to the motorman that the horse was frightened or that appellee for any reason had lost control of the horse and was in danger, then it would have been the duty of the motorman to stop the car if possible. *Citizens' St. Ry. Co. vs. Lowe*, 12 Ind. App. 54, 39 N. E. 165, and cases cited. The doctrine under consideration applies when it is apparent that the party is in a position of danger from which

he cannot extricate himself. *C., C. & St. L. R. Co. vs. Klee*, 154 Ind. 430, 56 N. E. 234; *Krenzer vs. P., C. & St. L. R. Co.*, 151 Ind. 587, 43 N. E. 649, 52 N. E. 220, 68 Am. St. Rep. 252; *Dull vs. C., C. & St. L. R. Co.*, 21 Ind. App. 571, 52 N. E. 1013. To justify the application of the doctrine in this case, the motorman must have had the 'last clear chance'; that is, evident and last to have avoided the danger after he had learned of it and knew that the safety of appellee depended solely upon him. Daily observation of human conduct does not lead to the conclusion that sane adults will place themselves in positions of open danger. The motorman was not required to assume that the appellee would court danger or disregard all prudence, and when appellee's danger became apparent there was not time and space to stop the car."

Nevertheless, there is strong ground for holding that one may attempt to cross a street railroad track, a car being 225 ft. away, without being guilty of contributory negligence as matter of law. It is argued, with much point, that a person using the street is not bound to anticipate that a street car will be run at an excessive rate of speed or that it will not be under such control that it may be stopped within a distance of 225 ft. With regard to the "Last Clear Chance" doctrine, a distinction may be drawn between street railway and steam railroad cases. (See *Illinois Cen. R. Co. vs. Ackerman*, United States Circuit Court of Appeals, 144 Fed. 959.)

CHARTERS, FRANCHISES AND ORDINANCES

ARKANSAS.—Waters and Water Courses—Obstruction—Street Railroads—Liability.

An ordinance of a city authorizing the construction of a street railroad required that the company should construct its tracks with suitable bridges, drains, or pipes at all gutters, so as to permit a flow of water under the same. The constructing company built the roadbed across a depression or drain which crossed a street without putting in a culvert, and thus forced more water to pass under a bridge over a creek, which was also partially obstructed by the placing of a bent under the bridge to strengthen the same, after which the creek became still more obstructed by brush and dirt, whereupon, during a heavy rain, it overflowed and caused damage to plaintiff's building. Held that the railway company having altered the flow of the water, it was bound to see that the creek should not become further obstructed and to provide against its overflow from such obstruction.—(*Ft. Smith Light & Traction Co. vs. Soard*, 96 S. W. Rep., 121.)

GEORGIA.—Carriers—Street Railroads—Transfers—Mistake in Transfer—Unreasonable Conditions—Threatening Expulsion—Damages—Trial—Instructions—Evidence to Sustain.

1. Although a street railway company may not be required by law to carry a passenger on any other line than the one over which the car originally boarded runs, still, if such company holds out that it will, when fare is paid on the first car, issue a transfer giving the right to ride on other cars of its lines, a request for a transfer is an acceptance of this offer, and the delivery of the transfer completes a contract under which the passenger is entitled to demand the right to ride on both the original car and the transfer car; and the amount paid to the conductor of the first car is the consideration for the right to ride on each car. The right to ride on the car to which the passenger is transferred is in no sense a gratuity.

2. If a mistake is made by the conductor of the first car in issuing a transfer, and the passenger presents the transfer to the conductor of the second car and gives a reasonable explanation of the mistake of the conductor of the first car, the conductor of the second car must at his peril determine whether the passenger is entitled to ride upon the transfer, notwithstanding it does not upon its face show such right.

3. A condition on a transfer issued by a street railway company that "the holder, by accepting, agrees that, should any controversy arise as to its validity, holder will pay fare and call at company's office for correction" is unreasonable and void.

4. A threat by the conductor of the second car to expel a passenger on account of a mistake in the transfer slip is a legal wrong, giving the passenger a right of action against the company, notwithstanding there is nothing insulting in the words or manner of the conductor, further than a mere threat to expel might be deemed an insult.

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

5. In an action brought to recover damages for a threat to expel a passenger from a street car, who presented a transfer to the conductor which was defective through no fault of the plaintiff, but who, under the facts of the case, was entitled to a ride on the car, the measure of damage is not limited to the amount paid to prevent an expulsion, but general damages may be recovered as for an inexcusable trespass, even though there be no aggravating circumstances connected with the threat of expulsion.

6. While the evidence demanded a finding in favor of the plaintiff so far as the right to recover was concerned, the erroneous instruction in relation to the worldly circumstances of the parties was of such a character as to require the granting of a new trial.—(Georgia Ry. & Electric Co. vs. Baker, 54 S. E. Rep., 64c.)

ILLINOIS.—Street Railroads—Transfer of Franchise—Legislative Recognition—Constitutional Law—Due Process of Law—Ordinance Providing for Universal Transfers on Street Railways—Courts—Jurisdiction of Federal Courts—Federal Question.

1. The effect of the incorporation in 1861 of the West Division Railway Company to take over, so far as related to the West Side in Chicago, the rights of the South Side Railroad Company, which held a franchise to operate street railroads on both the South and West Sides, together with the act of 1865 ratifying all transfers of rights between the two companies and the subsequent action of the City Council since that time in dealing with the two separately, was, at least prima facie, to entirely segregate the companies and to divest the South Side Company of all rights and incidental obligations on the West Side.

2. A city ordinance requiring a street railroad company to accept transfers issued to passengers by other companies, in no way connected with it, and to carry such passengers over its lines without charge, is unconstitutional and void as depriving such company of its property without due process of law; and it is immaterial that the requirement is reciprocal and that in operation the effect of the ordinance might be to increase business to such an extent that the companies would suffer no loss.

3. A suit to enjoin the enforcement of an ordinance requiring a street railway company to carry without pay passengers holding transfers from other car lines is cognizable in equity on the ground of preventing a multiplicity of suits and is within the jurisdiction of a Federal court, where the invalidity of the ordinance is alleged on the ground that it deprives the company of its property without due process of law in violation of the Federal Constitution.—(Chicago City Ry. Co. vs. City of Chicago. Eckels et al. vs. Same. In re Universal Transfers, 142 Federal Rep., 944.)

IOWA.—Taxation—Street and Interurban Railroads.

Code Supp. Sec. 2033a, requires that any railway operated on the streets of a city or town by other than steam power, which extends beyond the limits of such city or town to another city or town shall be known as an interurban railway. Sec. 2033b makes all the statutory provisions relative to railways in general applicable to interurban street railways, and Sec. 2033c declares that any interurban railway shall, within the corporate limits of any city or town acting under a special charter upon such streets as it shall use for transporting passengers and such freight, as it may carry in its passenger or combined baggage cars only, be deemed a street railway and subject to the laws governing street railways. A company owning street railway systems in two cities connected them by an interurban line in such a manner that the interurban traffic passed over but one or two blocks of the existing street railway lines, and in the main traversed only its own tracks which were not within the city limits. The accounts of the interurban line and the existing street railway systems were separately kept; the only apparent connection between the two, other than common ownership, being the giving of transfers from each line to the other. Held, that the entire system should, for purposes of taxation, be regarded as an interurban line.—(Waterloo & C. F. Rapid Transit Co. vs. Board of Sup'rs of Blackhawk County et al., 108 N. W. Rep., 316.)

MASSACHUSETTS.—Eminent Domain—Elevated Railroads—Damages—Set-Off of Benefits—Status—Evidence—Admissibility.

1. St. 1894, p. 764, c. 548, Sec. 8, provides that the location of a railway on any public way shall be deemed an additional servitude, and entitles persons having an estate in such way or abutting premises, and who are damaged by reason thereof, to recover compensation in the manner provided. Sec. 9 declares that an owner on the street through which the elevated way is constructed shall be allowed damage only to the amount that his estate has been damaged more than it has been benefited or improved in value. Held, that owners of land in the street and abutters on it

are obliged to set off all benefits that might be the subject of an assessment of betterments if the railway were a public improvement erected under a statute at the city's expense, notwithstanding the different rule provided by Sec. 11 for the assessment of damages for taking private land outside of ways.

2. In a proceeding under St. 1894, p. 761, c. 548, to recover damages caused by the location and construction of an elevated railway, evidence is not admissible for the purpose of showing damages to business conducted on the property affected, but only to show the diminution in value of the property for use in the business.—(Peabody et al. vs. Boston Elevated Ry. Co., 78 N. E. Rep., 392.)

MISSOURI.—Street Railroads—Leases—Ordinances—Contracts Between Companies—Construction—Creation of Principal and Agent—Creation of Partnership—Lease—Operation—Companies and Persons Liable for Injuries.

1. A municipal ordinance authorizing enumerated street railway companies and their successors and assigns severally to sell, convey, or lease their property rights, privileges, and franchises to any of the companies enumerated, or to a company designated, its successors and assigns, and authorizing the company acquiring the property rights and franchises of the enumerated companies to hold the same during the term of the ordinance, authorizes a purchaser of the property and franchises of the enumerated companies to lease the same to the designated company without the special consent of the municipality, notwithstanding Const. Art. 12, Sec. 20, forbidding a street railway transferring its franchise without first obtaining the consent of the municipality.

2. A street railroad company entered into a contract with another street railroad company, which recited that the former, in consideration of the covenants of the latter, leased its railways, etc. The contract divested the former company of the possession and use of its properties for forty years in consideration of a specific rent to be paid by the latter company and the performance of other duties in the nature of rent, and provided for the restoration of the property to the former at the end of that term and for re-entry if the latter defaulted in the performance of its covenants during the term. The contract did not provide that the latter should conduct the business in the name or for the benefit of the former, except as in so far as the former was benefited by the consideration to be paid by the latter. Held not to establish an agency, whereby the former company was principal and the latter agent.

3. The contract did not make the two companies partners.

4. The contract was a lease.

5. A contract entered into by one street railway company with another street railway company provided that in consideration of the covenants made by the latter company the former leased its railway to the latter. The latter company agreed to pay an annual rental to operate the railway of the former at its own expense and make the necessary repairs, to pay all the floating debts of the former, together with assessments of all kinds, and to apply all money not needed for current liabilities or interest turned over to it by the former, or on hand at the date of the lease, or received by the former thereafter from the rent of useless property to the improvement of the demised property. Held, that the former company was not bound to turn over to the latter company any money received by the former from any source, so that whatever rent the latter paid would not be repaid to it.

6. Since Rev. St. 1899, Sec. 1187, expressly authorizes a street railway company to lease its property, and since Sec. 4160 provides that when technical words having a peculiar meaning are used in a statute they shall be understood according to their technical import, a street railroad company leasing its property and franchises to another street railroad company is not liable for an injury to a passenger resulting from the negligence of the employees of the latter company; the word "lease" importing a contract by which one person divests himself and another person takes possession of property for a term.—(Moorshead vs. United Ry. Co. et al., 96 S. W. Rep., 261.)

MISSOURI.—Sales of Other Property—Evidence—Value—Eminent Domain—Sufficiency—Appeal—Questions Reviewable—Waiver in Trial Court—Inconsistent Position—Opinions—Value of Property—Harmless Error—Admission of Evidence—Withdrawal from Jury—Witnesses—Cross-Examination—Scope—Eminent Domain—Proceedings—Instructions—Measure of Compensation.

1. In condemnation proceedings, sales of similar property to that involved, made in the neighborhood about the same time, is admissible on the question of damages.

2. Evidence as to the amount which the condemning party had paid for other land in the neighborhood purchased for the same purposes as the land sought to be condemned was inadmissible.

3. In condemnation proceedings, wherein evidence was introduced as to the amount paid by the condemning party for other lands in the neighborhood, the evidence held sufficient to show that such other lands were purchased for use in connection with the land sought to be condemned, or that the vendors knew such fact.

4. Where, in proceedings to condemn land, the landowner, on exceptions filed to the report of commissioners, opened the case and offered evidence as to the amount paid by the condemning party for lands in the neighborhood purchased to be used for the same purposes as those for which the land involved was sought to be condemned, the condemning party, by introducing evidence of prices paid by it for other property, did not preclude itself from complaining on appeal that the admission of evidence as to the price paid for other land was error.

5. In condemnation proceedings, there was no error in permitting the owner to give his opinion as to market value where it appeared that he was familiar with the property and its location and had been for a number of years.

6. In condemnation proceedings, it was proper to admit evidence showing an increase in the value of property in the neighborhood by reason of the acquisition of property by certain corporations, where such holdings were acquired prior to the condemnation proceedings.

7. In condemnation proceedings, while it may be proper to show a failure to agree upon the amount to be allowed for the property, it is not competent to go into details of the negotiations for the purchase, or to show different amounts offered for the property by the condemning party.

8. Where, in condemnation proceedings, a witness testified as to what price the corporation had offered for the property, prior to the institution of condemnation proceedings, but the testimony was withdrawn from the jury by an appropriate instruction, the error was cured.

9. In condemnation proceedings, there was no error in admitting testimony to show the elements of the value of the property by reason of its being located near certain railroad tracks and suitable for switching purposes.

10. In condemnation proceedings, it was proper to exclude the testimony of a witness that he had offered to sell defendant property near the location of the land involved for certain amounts, and that he had declined to take it.

11. In condemnation proceedings, it was proper to exclude questions to defendant on cross-examination as to certain other property being offered to him in the neighborhood for specific amounts, and that he declined to take it.

12. In condemnation proceedings, the court instructed that "fair market value" meant the price which property would bring when offered for sale by one willing, but not obliged, to sell, and bought by one willing, but not obliged, to buy; that it did not mean the price which property could bring at forced sale, but what it would bring in the hands of a prudent seller, at liberty to fix the time and conditions of sale. Held, that the instruction was not erroneous, because of the statement as to "a prudent seller," etc.

13. A general rule, in estimating the compensation to be allowed on condemnation of a parcel of land, is that reference should be had to the use for which the property is suitable, having regard to the existing business or wants of the community, or such as may be reasonably expected in the immediate future.

14. In condemnation proceedings, the court instructed that, in determining the value of the land in controversy, the jury might take into consideration its location, the uses and purposes for which it was suitable or adaptable, considering the location, and having regard, not only to the existing business wants of the community, but to such uses as might be reasonably expected in the near future, together with all the surroundings and conditions as shown by the evidence; that the jury might take into consideration other bona fide sales of property in the vicinity and similarly located; and that in determining the uses and purposes for which the property was suitable or adaptable the jury were not confined solely to the use, if any, made of the land at the time it was taken. Held, that the instruction was proper.

15. In condemnation proceedings, the condemning party requested an instruction that "the market value" of property means its actual value, independent of the purposes for which it is to be used by the condemning party; that is, the fair market value of the property, as between one who wants to purchase and one who wants to sell, not what could be obtained for it in peculiar cir-

cumstances, when greater than its fair price could be obtained, nor its speculative value, nor the value obtained through the necessities of another, nor, on the other hand, is it to be limited to that price which the property would bring when forced off at auction under the hammer; that the question is, if defendant wanted to sell his property, as to what could be obtained for it on the market from the parties who wanted to buy and would give its full value. Held, that the instruction amounted to a detailed explanation of the term, "market value," cautionary in its character, and, certain features of it not having been fully embraced in other instructions, it was erroneously refused.—(Metropolitan St. Ry. Co. vs. Walsh et al., 94 S. W. Rep., 860.)

MISSOURI.—Railroads—Location of Road—Filing Profile Map—Abandonment of Chartered Route—Eminent Domain—Condemnation of Railroad Right of Way—Evidence—Abandonment of Location—Condemnation Proceedings—Appeal—Presumptions—Presentation of Questions in Lower Court—Pleading—Parties.

Rev. St. 1899, Sec. 1056, requiring a railway company, before constructing any part of its road, to file a profile map in the office of the County Clerk of the route intended to be adopted in that county, is not satisfied with a profile map of a part or section of the route in the county.

2. A railroad corporation has no right to willfully abandon any part of its chartered route, notwithstanding Rev. St. 1899, Sec. 1161, declaring that, if a company does not begin the work of construction within two years and finish it within ten years, it shall forfeit its corporate charter, provided that, if the company has in the meantime built a portion of its road, it may retain and operate that portion.

3. Where a railroad company seeks to condemn land for a railway from Kansas City to Swope Park, relying on a charter to build a road from Kansas City to Lees Summit, the burden is on the company to show that Swope Park is on the line of the chartered route from Kansas City to Lees Summit.

4. Where a railroad charter authorized the construction of a road from Kansas City to Lees Summit, it is not authorized to condemn land for a road from Kansas City to Swope Park, even if Swope Park be on the line between Kansas City and Lees Summit, where the whole record shows a purpose only to build to Swope Park.

5. Where a petition in condemnation proceedings alleges that a railroad charter authorized the construction of the road from Kansas City to Swope Park, and that a profile map of "said railroad" had been filed in the office of the clerk of the county court, but the evidence showed that the charter was for a road from Kansas City to Lees Summit, the failure of the property owners on appeal to incorporate in the record the profile map which was introduced in evidence does not raise the presumption that it was in compliance with the charter.

6. In condemnation proceedings by a railroad, where the answer alleges that the petition does not aver that the owners of all parcels of land sought to be condemned, lying within the county, have been made parties defendant, the objection that it is not alleged that no agreement could be made between the railroad company and those who were not made parties cannot be first made on appeal.

7. Rev. St. 1899, Sec. 1264, providing that in proceedings to condemn land the owners of all such parcels as lie within the county or circuit shall be made parties defendant, providing that it shall not be necessary to make any persons parties defendant unless they are either in actual possession of the premises to be affected or have a title appearing of record, is mandatory, and not to be construed as merely directory, in order to harmonize with Sec. 1267, providing that any number of owners resident in the same county or circuit may be joined in one petition.—(Kansas City Interurban Ry. vs. Davis et al., 95 S. W. Rep., 881.)

NEW YORK.—Street Railroads—Franchises—Police Regulations—Power of City—Constitutional Law—City Charter—Relocation of Street Railroads—Validity—Impairment of Contract—Mandamus—Scope of Remedy—Change of Location.

1. Where a city granted a franchise to a street railway company, authorizing it to construct, maintain, and operate a street surface railway in the streets of the city, such franchise, though a contract between the city and street car company, was subject to the police power of the city to regulate the manner in which the street should be used.

2. Geneva City Charter, Laws 1897, p. 444, c. 360, Sec. 65, as amended by Laws 1905, p. 1032, c. 462, provides that if any street in which a street surface railway is now or shall hereafter be

operated shall be paved, repaired, or altered, etc., the board of public works shall have power to require the railroad corporation operating such street surface railway to change its grade and line to conform to such alteration or improvement in such manner as the board shall designate, at the expense of such railroad company. Held, that such provision was not unconstitutional, as an impairment of the contract rights of a street railroad operating its line on the north side of a street under a franchise acquired from the city, though the required change of location would necessitate a large expenditure on the part of the railroad company.

3. Where a street railway was under a legal obligation to change the location of its line on the demand of the city's board of public works, preliminary to the improvement of the street, the city was entitled to compel such change by mandamus.—(People ex Rel. City of Geneva vs. Geneva, W., S. F. & C. L. Traction Co., 98 N. Y. Sup., 720.)

WASHINGTON.—Eminent Domain—Necessity—Public Purpose—Evidence—Power for Electric Railway—Location.

1. A corporation organized to construct and operate electric street railways in two cities and a connecting electric railway will not be denied the right to proceed to condemn land to be flooded in connection with a water power to create electricity because it has not obtained franchises from the cities and a right of way between them, and so has not shown that the power will be needed for a public purpose; but it is enough that it has obtained the greater part of its right of way, that it is negotiating with the cities for the franchises, that the terms thereof have been practically agreed on, and that it is proceeding diligently with such matters; nothing being shown that will prevent ultimate accomplishment.

2. Though the articles of incorporation show that some of the objects for which a corporation was formed were purely private, it may exercise the power of eminent domain; its petition and testimony showing that it desires to condemn for the purpose of obtaining power to carry on its business as a public carrier.

3. The general statement in the testimony of the president of an electric railway company, purposing to erect a dam of a certain height to create power and seeking to condemn land which the dam will cause to be flooded, that all the power which could be developed by the dam would be required, and that if the company could get along with less it would be satisfied to take less, is sufficient, without any estimate of horse power required or proposed to be developed, in the absence of controverting evidence, to justify the finding that no more was proposed to be taken by condemnation than the necessities required.

4. Under Laws 1903, p. 366, c. 175, Sec. 2, providing that an electric railway company may appropriate property for right of way or for any corporate purpose, and imposing no limitation as to location, it may condemn land for power purposes, however distant from the railway.—(State ex Rel. Harlan vs. Centralia-Chehalis Electric Ry. & Power Co., 85 Pac. Rep., 344.)

LIABILITY FOR NEGLIGENCE

ALABAMA.—Street Railways—Injuries to Pedestrian on Track—Complaint—Allegation of Negligence—Negligence—Wantonness—Contributory Negligence—Defense—Trial—Instructions—Assumption of Undisputed Facts—Infants—Injury to Pedestrian on Track—Errors in Instructions—Cured by Other Instructions—Duty to Request Instruction—Ignoring Facts.

1. A complaint in an action against a street railway company for the death of a child struck by a car, which alleges that a car ran against the child, and that he died by reason of and as a proximate consequence of the negligence of the company in or about the management of the car, sufficiently charges simple negligence in the management of the car.

2. A complaint in an action against a street railway company for the death of a child struck by a car, which alleges that the company wantonly caused or allowed the car to run against the child, and thereby wantonly and intentionally caused the death of the child, sufficiently charges an intentional wrong.

3. Contributory negligence is no defense to a count charging the intentional killing of a person.

4. It is not reversible error to assume in an instruction an undisputed fact.

5. A child between 7 and 14 years of age is prima facie incapable of exercising judgment and discretion, but evidence may be received to show capacity.

6. An instruction in an action against a street railway company for the death of a child struck by a car, which, after hypothesizing the failure of the motorman to do all that a rea-

sonably prudent motorman would have done under the circumstances to save the life of the child, fails to further hypothesize that the failure proximately caused the injury, is erroneous.

7. An error in an instruction in an action against a street railway company for the death of a child struck by a car, arising from the failure to hypothesize that the failure of the motorman to do what a reasonably prudent person would have done under the circumstances to save the life of the child proximately caused the injury, is cured by an instruction that if the motorman failed, after he became aware of the peril of the child, to do all in his power with the means at hand to save the child, and that the death was the proximate cause of such failure, the motorman was guilty of wantonness, authorizing a verdict for the plaintiff, though the child was guilty of contributory negligence.

8. Where the complaint in an action against a street railway company for the death of a child struck by a car charged that the company was guilty of simple negligence, and of wantonness and an intentional killing, and the court charged that plaintiff's case was made out on the jury being satisfied that either the first or second count of the complaint was true, it was the duty of the company to request a charge explanatory of the effect of contributory negligence on the count charging simple negligence, if it deemed that important.

9. Mere capacity on the part of a child under 14 years of age to know danger is not necessarily sufficient to make him guilty of contributory negligence in doing a thing which would be negligence in one of mature age.

10. An instruction in an action against a street railway company for the death of a child struck by a car, which ignores the duty of the motorman to keep a lookout for persons on the track, is properly refused.—(Birmingham Ry., Light & Power Co. vs. Jones, 41 S. Rep., 146.)

ARKANSAS.—Evidence—Opinion Evidence—Rate of Speed—Instructions.

1. In an action for injuries sustained by plaintiff in a collision between his vehicle and a street car, the testimony of a witness that the car was running at the usual rate of speed that cars traveled along that street, and that it was a pretty good rate as it was down grade there, was competent.

2. Defendant requested an instruction that a street car has a right of way paramount to that of ordinary vehicles, but that such right does not prevent others from driving along or across its tracks when they will not interfere with the cars. Such part of the instruction was refused, but the court gave the remainder of the instruction, that if the employees in charge of a car see one driving upon the street by the side of the car track and in the direction from which the car is approaching, they have a right to presume that he will not attempt to cross the track, and that they may go on without checking the speed of the car until they see he is likely to go upon the track, when it would become their duty to give extra alarm, and as a last resort to check the speed of the car or stop it. Held that that part of the instruction given contained all proper information for the jury.—(Little Rock Ry. & Electric Co. vs. Green, 93 S. W. Rep., 753.)

ARKANSAS.—Street Railroads—Injuries to Person on Track—Contributory Negligence—Question for Jury—Trial—Instructions—Objections—Sufficiency—Appeal—Submitting Issue to Jury—Harmless Error.

1. In an action against a street railway company for injuries received in a collision with a car, it appeared that plaintiff alighted from a car on the side next to a parallel track, and on stepping thereon he was struck by a car. Held that whether he was guilty of contributory negligence precluding a recovery was, under the evidence, for the jury.

2. A general objection to an instruction defining the measure of damages, in an action for personal injuries, does not reach the objection that the court erred in including as an element of damage pecuniary loss, in the absence of evidence of such damage.

3. The error in submitting to the jury, in an action against a street railway company for injuries in a collision with a car, the issue of the incompetency of the motorman because of the absence of evidence on the question, was not prejudicial, where, in obeying the instructions, the jury found that he was negligent.—(Ft. Smith Light & Traction Co. vs. Carr, 93 S. W. Rep., 990.)

CONNECTICUT.—Street Railroads—Rights of Street Car and Traveler—Care of Traveler—Trial—Trial by Court—Findings of Fact—Evidence—Best Evidence—Appeal—Correction of Findings—Application—Objections—Injury to Traveler in Collision—Findings—Evidence—Sufficiency.

1. The rights of a street car and a traveler are equal, and the right of each must be exercised with due regard to that attach-

ing to the other, and so as not to interfere with it unreasonably.

2. The driver of an ordinary vehicle is justified in proceeding to cross a street railway track in the face of an approaching car only when he has reasonable ground for believing that he can pass in safety where both he and those in charge of the car act with reasonable regard to the rights of each other.

3. A finding of the trial court, in an action against a street railway company for the death of a traveler in a collision with a car, that each party to the collision was in fault and that the fault of the decedent contributed to the injury, is a conclusion of fact, and must stand, unless inconsistent with other facts found.

4. In an action against a street railway company for the death of a traveler in a collision with a car, the court found that decedent was struck by a car while attempting to cross the track; that the view of one traveling toward the track was almost shut off until he came within 50 feet of the track, and partially obscured until he came within 30 feet; that the accident occurred on a warm day, when there had been no frost for 48 hours, and the tracks were in their usual condition; that the motorman had never run a car on the track before the day of the accident; that he testified that by applying the brake and on its failure reversing the power he could stop a car within 10 feet, if the rails were in good condition; that the car was running on a slight downgrade at the rate of about 20 miles an hour; that the motorman at a distance of about 250 feet from the place of the accident saw the head of the horse approaching; that he sounded his gong and shut off the power, but made no other effort to slacken the speed. Held that the findings were not inconsistent with a finding that each party to the collision was in fault, and that the fault of the decedent contributed to the injury.

5. Where, in an action against a street railway company for the death of a traveler in a collision with a car, a copy of a report of the accident, made to the company, was by stipulation of the parties given the position of the original report, the copy was the best evidence of the contents of the report, and the motorman who made it could not be asked whether it contained any statement that the rails were slippery, so that he could not bring the car to a stop before the collision.

6. Where the objections to an application to rectify an appeal by making changes in the finding are apparent on the face of the application, a motion to dismiss the application is improper, and the place to urge the objections is in such brief as may be filed in opposition to granting it.

7. The court, on appeal, will entertain the application of appellant to rectify the appeal by making changes in the findings with respect to matters to which he has not otherwise presented exceptions.

8. As an application to rectify an appeal by making changes in the finding is in its nature a summary proceeding, the court on appeal will consider a deposition taken in support of the application, though not finished until the day before the opening of the term.

9. A finding, in an action against a street railway company for the death of a traveler in a collision with a car, that the decedent saw and heard the car before he stopped his team before entering on the track, was promptly inferred from proof that decedent had the opportunity to see and hear the car.

10. A finding, in an action against a street railway company for the death of a traveler in a collision with a car, that decedent could have remained where he stopped his horse, from 6 to 10 feet from the track, on the approach of the car, is properly drawn from a finding that decedent on approaching the track drove his horse at a walk, which gait was maintained until he saw and heard the car when he stopped the horse from 6 to 10 feet from the track.—(McCarthy v. Consolidated Ry. Co., 63 Atl. Rep., 726.)

ILLINOIS.—Carriers—Injury to Passenger—Question for Jury—Trial—Evidence—Failure to Object—Motion to Strike—Damages—Personal Injuries—Aggravation of Condition—Pleading—Declaration.

1. In an action against a street railway company for injuries to a passenger, held, that the question whether plaintiff was injured through the negligence of defendant was one for the jury.

2. Where, in an action for injuries, no objections were made by defendant to the introduction of certain evidence, a motion to strike such evidence on the ground that it failed to show that the conditions were caused by the accident was properly overruled.

3. In an action for injuries to a passenger, held, that the question whether her physical condition had resulted from the accident was one for the jury.

4. The fact that injuries caused through the negligence of another were aggravated by an organic tendency existing in the person injured does not preclude recovery.

5. Allegations of the declaration in an action for injuries that plaintiff was hindered and prevented from transacting and attending to her affairs, and lost and was deprived of great gains and profits which she might and otherwise would have acquired, was sufficient to warrant the introduction of evidence that plaintiff earned on an average of \$300 a year making dresses, etc.—(Chicago Union Traction Co. et al. vs. May, 77 N. E. Rep., 933.)
ILLINOIS.—Limitation of Actions—Commencement of Action—Amendment of Pleading—Master and Servant—Injuries to Servant—Vice Principal—Instructions—Assumption of Risk—Command of Master.

1. Where an original and amended pleading, in an action for injuries to an employee of a street car company, declared on the negligence of the company in failing to furnish proper assistance and in furnishing an incompetent gripman of a cable train, and were filed within two years after the injuries occurred, additional counts, based on the same grounds of negligence, and filed after the expiration of two years, were not barred by limitations, though the original and amended pleading stated the cause of action defectively.

2. In an action for injuries to an employee of a street car company, evidence that he made complaint of the insufficiency of his help in moving cars to the company's foreman in charge of the barns, and that the foreman instructed him to go ahead and he would soon send help, was sufficient to authorize an instruction that, where a master confers authority on an employee to take charge of a class of workmen, the employee in directing the men, is not a fellow servant, and his directions are the commands of his master.

3. Where the employee of a street railway company was ordered to move cars in the car barns without proper assistance, on a promise that he would be furnished assistance, he did not assume the risk of injury, unless the danger was so imminent that no man of ordinary prudence would engage in the work.—(North Chicago St. Ry. Co. vs. Aufmann, 77 N. E. Rep., 1119.)
ILLINOIS.—Trial—Instructions—Preponderance of Evidence—

Appeal—Prejudice—Modification—Misconduct of Attorney—Curing Error.

1. An instruction that the preponderance of the evidence is not alone to be determined by the number of witnesses testifying to a particular fact or state of facts, but that, in determining the same, the jury "should" take into consideration the opportunities of the several witnesses for seeing and knowing the things of which they testify, their conduct and demeanor while testifying, their interest or lack of interest, if any, in the result of the suit, the probability or improbability of the truth of their several statements, etc., was not erroneous in that it peremptorily required the jury to consider only the elements outlined, and excluded the element of the number of witnesses.

2. Where in an action for injuries to a passenger on a street car, the issue litigated was whether plaintiff was injured by the car from which he was alighting being prematurely started, or by reason of her attempting to alight from the car before it stopped, and there was nothing within the issues requiring submission of the question whether the carrier had exercised such care as it reasonably could consistent with the mode of conveyance adopted, defendant was not prejudiced by an instruction that, if plaintiff was a passenger on the car as alleged, and had paid her fare, defendant was bound to exercise the highest degree of care and foresight for the safety of passengers consistent with the practical operation of its road.

3. It was not error for the court to modify an instruction that the jury should not infer from the giving thereof that plaintiff had been injured, or that defendant was liable, so as to charge that the jury should not understand or assume that the court intended to express any opinion on the issues involved.

4. The sustaining of an objection by the trial court to a remark made by plaintiff's counsel, and a direction that the jury should disregard the same, cured the error.—(Chicago Union Traction Co. vs. Yarus, 77 N. E. Rep., 1120.)
INDIANA.—Street Railroads—Use of Street—Reciprocal Rights

Crossing Track—Negligence—Speed of Car—Question for Jury—Assumption of Diligence—Contributory Negligence—Evidence—Last Clear Chance.

1. Where a street railroad company is authorized to operate its tracks on a city street, both the street car company and those traveling on the street in vehicles are required to use the street at all times with just regards to the rights of the other.

2. The driver of an ordinary vehicle may proceed over a street railroad in front of an approaching car when, and only when, he has reasonable ground for believing that he can pass in safety, if both he and those in charge of the car act with reasonable regard to the rights of others.

3. Where, in an action for injuries to the driver of a vehicle in collision with a street car, it was charged that the car was being run at a high and dangerous rate of speed, which was the cause of the accident, the issue so tendered was for the jury to determine with reference to existing conditions and circumstances.

4. A traveler on a street, on which a street railway is operated, is entitled to assume that the street car company will exercise at all times with just regard to the rights of the other.

5. Plaintiff turned to go across a street car track when the car which struck his vehicle was 225 feet away and beyond an intersecting street. The car was running at the rate of 20 miles per hour, and when about 60 feet from plaintiff he first discovered its excessive speed. He then quickly attempted to turn his horse aside and avoid a collision, but failed. When plaintiff first saw the car he underestimated its speed because of the distance, and assumed that it was far enough away to enable him to cross. No effort was made by the motorman to check the speed of the car prior to the accident, and it ran 140 feet or more after the collision before it was stopped. Held that plaintiff was not guilty of contributory negligence as a matter of law.

6. The doctrine of "last clear chance" is applicable to an action for injuries to the driver of a vehicle which occurred in a collision with an approaching street car.—(Indianapolis St. Ry. Co. vs. Bolin, 78 N. E. Rep., 210.)

INDIANA.—Negligence—Pleading—Negating Contributory Negligence—Injury in Another State—Application of Statutes—Trial—General Verdict—Operation and Effect—Special Verdict.

1. A complaint for negligent injury to personal property must show that the plaintiff was without fault.

2. Where a complaint for negligent injury occurring in another State to personal property is filed in the courts of Indiana it must negative contributory negligence of the plaintiffs, though such negation is not necessary at common law, and though it will be presumed that common law is in force in the other State.

3. Acts 1869, p. 58, c. 41, providing that in all actions for damages brought on account of the alleged negligence of any person, copartnership or corporation causing personal injuries or the death of any person, it shall not be necessary for the plaintiff in such action to allege or prove the want of contributory negligence on the part of plaintiff or on the part of the person for whose injury or death the action may be brought, applies only to cases relating to personal injury or death, and does not change the rule of pleading in actions for injury to personalty.

4. Where a complaint for injury to personalty averred that when plaintiff's covered spring wagon laden with heavy freight and a large amount of various kinds of produce, and being drawn by a team of three mules, then and there being driven for the plaintiff by a competent and experienced driver, with due care and prudence, eactwardly and along and over the track of defendant street railway in a public highway, it was struck by one of defendant's cars, there was a sufficient negation of contributory negligence on plaintiff's part.

5. A general verdict finds all the material allegations of the complaint to be true.

6. Special findings control only when there is an irreconcilable conflict between them and the general verdict.—(Cincinnati, L. & A. Electric St. R. Co. vs. Klump, 77 N. E. Rep., 869.)

INDIANA.—Street Railways—Action for Injuries—Question for Jury—Burden of Proof—Contributory Negligence—Driver of Vehicle—Negligence—Trial—Appeal—Failure to Reserve Exceptions—Admission of Evidence—Instructions—Record—Questions Presented—Special Findings—Inconsistency with Verdict—Operation—Persons Near Track—Care Required of Railroad.

1. In an action against a street railway for injuries to plaintiff in a collision between her vehicle and a car, the question as to plaintiff's contributory negligence in driving on the track held one for the jury.

2. In an action against a street railway for injury to plaintiff in a collision between her vehicle and a car, the burden was on defendant to show contributory negligence.

3. One driving along a street railway track in daylight has the right to suppose that, if a car is approaching from the rear a proper lookout is maintained and that ordinary care will be exercised not to injure him.

4. Where a question as to negligence or contributory negligence is so presented that jurors, as reasonable men, might fairly differ as to the deduction to be drawn, the question is for the jury.

5. The admission of testimony will not be reviewed on appeal where no exception appears to have been reserved to the question by which the testimony was elicited.

6. In an action against a street railway for injuries to plaintiff in a collision between her vehicle and a car, the complaint in its preliminary allegations characterized as negligence a running at high speed, and a failure to sound the gong, but the allegation concluded with a charge of negligence in running the car upon and against plaintiff's buggy. Held, that an instruction submitting the doctrine of last clear chance was not outside the issues.

7. Where neither the language nor substance of instructions complained of can be found in the briefs, they will not be reviewed.

8. In order to justify judgment on special findings notwithstanding the general verdict, the answers must make out a case of such antagonism on some vital point as not to be capable of being removed by any evidence admissible under the issues.

9. Where a motorman saw one driving a vehicle in the same direction turn on the track ahead of the car in order to pass a wagon, he was not at liberty to continue to proceed at a high speed without sounding the gong.—(Indianapolis St. Ry. Co. vs. Marschke, 77 N. E. Rep., 945.)

INDIANA.—Carriers—Injury to Passenger—Action—Question for Jury—Instructions.

1. In an action against a street railroad for injuries to a passenger, held that the question whether she was guilty of contributory negligence in descending to the lower step of the car and making ready to alight when it should come to a full stop was for the jury.

2. In an action against a street railroad for injuries to a passenger, the court instructed that a higher decree of care is imposed on street railways than on steam ones, and that if plaintiff, on giving her ticket to defendant's conductor, notified him that she wished to be put off at a certain regular stopping place, it was the duty of defendant to carry plaintiff safely there, and that its duty was not discharged until it had set her down as safely as the means of conveyance and the circumstances of the case would permit. Held, while the opening statement of the instruction was not commendable, the instruction was not erroneous.—(Wabash River Traction Co. vs. Baker, 78 N. E. Rep., 195.)

INDIANA.—Carriers—Injury to Passengers—Negligence—Complaint—Sufficiency—Relation of Passenger and Carrier—Appeal—Harmless Error—Errors in Ruling on Demurrers—Release—Pleading—Prima Facie Proof—Husband and Wife—Rights and Liabilities of Husband.

1. A complaint, alleging that a street railway car negligently approached a switch at a dangerous rate of speed and negligently ran into the switch at such dangerous rate of speed, and that by reason thereof the car left the track, thereby negligently throwing a passenger from her seat and injuring her, sufficiently charges negligence as against a demurrer.

2. A complaint alleging that a street railway car negligently approached a switch at a dangerous rate of speed and negligently ran into the switch, and that by reason thereof the car left the track, thereby negligently throwing a passenger from her seat and injuring her, sufficiently charges the negligent derailment of the car.

3. A complaint alleging that plaintiff took passage on a street car at a designated point to be carried to another designated point shows the relation of carrier and passenger.

4. Where, in a personal injury action, the answer tendered the issue of payment and settlement and a paragraph of the reply was a general denial, the overruling of a demurrer to another paragraph of the reply, alleging that there was no consideration for the settlement, was not prejudicial to the company, since the evidence pertinent to the issue was admissible under the answer and the denial in the reply.

5. The exhibit filed with an answer in a personal injury action was a copy of a check and a voucher showing that it was on account of damages and reciting: "The indorsement of this voucher by the payee constitutes a release in full" The reply averred that the plaintiff did not enter into any contract or indorse the check or voucher, or authorize any one to do so for her. Held that the agreement relied on by defendant could not become effective until the check and voucher were indorsed by the plaintiff or some one authorized by her, and the reply sufficiently pleaded that that was not done as against a demurrer.

6. Proof of a derailment of a street car and a resulting injury to a passenger thereon raises a presumption of the carrier's negligence amounting to prima facie proof, making it incumbent on the carrier to produce evidence to rebut the presumption, and that the accident could not have been prevented by the exercise of the highest practical care.

7. A husband is legally bound to pay a bill for medical treatment incurred in the treatment of his wife unless she agree to pay it herself, and where a wife was injured by the negligence of another and a physician was called to treat her, the husband had a right to recover the expense incurred in addition to any damage that might result from the loss of services of the wife, and any amount received in settlement of the claim of the wife and her husband for that purpose was, in the absence of a special agreement to the contrary the property of the husband.—(Indiana Union Traction Co. vs. Kinney, 78 N. E. Rep., 203.)

INDIANA.—Appeal—Pleadings—Review—Record—Railroads—Killing Stock—Right of Way—Failure to Fence—Complaint—Appeal—Exceptions to Conclusions of Law—Scope—Trial—Findings of Court—Exceptions—Effect—Covenants—Covenants Running with Land—Railroad Right of Way—Agreement to Fence—Deeds—Covenants.

1. An appellate court, in reviewing the sufficiency of a complaint, may refer to the entire records and briefs of counsel on both sides, in order to determine on what theory the complaint proceeds.

2. In an action against a railway for the death of plaintiff's cow, plaintiff alleged that the grantor of plaintiff's lessor contracted to convey a right of way to the railroad company by a written contract containing a condition precedent requiring the railroad company to build a sufficient fence along the right of way before taking possession of the land, that such grantor subsequently sold the adjoining land to plaintiff's lessor by a deed conveying all rights and covenants running with the remaining unsold portion and that plaintiff had leased the land from such purchaser, that the railroad company failed to fence as required by the covenant in its contract, and negligently left paints and oils on its right of way accessible to plaintiff's cow, from which she drank and died. Held that the cause of action so alleged was not founded on the deed to the railroad company, which was not alleged to contain the covenant to fence, but was founded on the written contract, and was therefore sufficient.

3. Where an exception was reserved to the court's conclusion of law at the time such conclusion was stated, such exception was sufficient to raise any question which might be presented thereon.

4. An exception to the court's conclusion that plaintiff was entitled to recover from the defendant a certain sum of money operated as an admission that all the facts had been fully and correctly found.

5. A covenant in a contract for the sale of land to a railroad for a right of way, by which the railroad agreed, before taking possession of the land, to construct a sufficient fence along the same as a condition precedent, operated as a covenant running with the land, for the failure to perform which the railroad was liable in damages to a tenant of a subsequent grantee of the adjoining land.

6. It was immaterial that such covenant was not carried forward into a deed conveying such right of way to the railroad company.—(Indianapolis Northern Traction Co. vs. Harbaugh, 78 N. E. Rep., 80.)

INDIANA.—Carriers—Liability for Injury of Free Passenger—Action for Injury to Passenger—Instructions—Appeal—Review—Harmless Error—Pleading—Variation.

1. A passenger on an electric car, although carried free, is still a passenger, and the carrier owes him the duty of exercising such skill as is consistent with the situation and the service undertaken and the greatest possible care for his safety, and any negligence by which the passenger is injured is actionable.

2. Defendant, an electric street railroad company, offered the free use of three of its cars to take members of a women's convention for a ride about the city. The offer was accepted, the plaintiff's ward became one of the passengers, and was injured in a collision. The cars were operated by the regular employees of defendant. Held that in an action to recover for the injury an instruction that defendant was liable for want of ordinary care, and that the burden of proof to show negligence rested on the plaintiff, was at least sufficiently favorable to defendant.

3. Under Burns' Ann. St. Ind. 1901, Sec. 394, which provides that no variance between the complaint and evidence shall be deemed material unless defendant was actually misled to his prejudice, and which also requires the defendant to call attention

to the fact, and authorizes the court to order the pleadings amended to conform to the proof, where no objection on the ground of a variance was made during a trial, the action of a court in construing the complaint in its charge as covering the case made by the proof, even if such construction was erroneous, did not constitute error prejudicial to the defendant, since the court had power to order the complaint amended.—(Indianapolis Traction & Terminal Co. vs. Lawson, 143 Fed. Rep., 834.)

INDIANA.—Appeal—Complaint—Attack—Street Railroads—Care Required—Sufficiency—Injuries to Travelers—Negligence—Contributory Negligence—Evidence—Question for Jury—Instructions—Trial—Assumed Facts—Care Required.

1. A complaint cannot be successfully attacked for the first time on appeal, unless there is a total failure to allege some fact essential to the existence of a cause of action in addition to uncertainty or mere inadequacy of overments.

2. Where a complaint is tested for the first time on appeal by an assignment of error, it will be held sufficient if it contains facts enough to bar another action.

3. It is the duty of a street railroad company in the operation of its cars, when it sees a person in peril from which he cannot extricate himself, to so act as not to increase the danger; and if it fails to exercise such care, and its failure results in injury, it is liable therefor.

4. Where, in an action for injuries to the driver of a vehicle from collision with a street car, a paragraph of the complaint averred that, because of a ditch along the side of defendant's track, there was not sufficient room for plaintiff to drive without driving on the track, and that defendant's servants in charge of the car could by the exercise of reasonable care have discovered plaintiff's peril in time to have avoided plaintiff's wagon and injuring him, but that after discovering plaintiff's position they negligently ran such car at a high and dangerous rate of speed until it struck plaintiff's wagon, causing the injuries complained of, it was sufficient as against attack for the first time on appeal.

5. In an action against a street railroad company for injuries to the driver of a vehicle caused by a collision in the street, evidence held to require submission of the question of defendant's negligence and plaintiff's contributory negligence to the jury.

6. An instruction charged that it was a motorman's duty to exercise reasonable care to discover any person or vehicle on or near the track in front of the car which he was operating, and if he discovered a vehicle in charge of a person upon the track or so near as to be likely to be struck by the car, and he had reason to believe that the person was unconscious of his danger or unable to avoid it, it was the motorman's duty to use every reasonable effort to stop the car, and if he failed to do so his employer was guilty of negligence justifying a recovery. Held that such instruction was not erroneous, as assuming that the car could have been stopped.

7. In an action for personal injuries, an instruction was not erroneous because it omitted the question of plaintiff's contributory negligence, where such issues were fully covered by other instructions.

8. Where, in an action for personal injuries caused by a collision between a street car and plaintiff's vehicle, there was no evidence that the car was stopped, or any attempt made to stop it, before the collision, an instruction was not erroneous in that assumed such facts.

9. Where plaintiff, because of a ditch in the side of a street, was compelled to drive his wagon partially on defendant's street car track for some distance, and defendant's motorman, as he approached plaintiff from the rear, could have seen plaintiff's perilous position in time to have prevented the collision which followed and the consequent injury to plaintiff, the motorman was properly charged with the exercise of the highest degree of care.—(Indianapolis Traction & Terminal Co. vs. Smith, 77 N. E. Rep., 1140.)

IOWA.—Trial—Instructions Not Warranted by Evidence—Street Railroads—Injuries to Persons on Track—Children—Action—Instructions—Care Required—Instructions—Conformity to Facts and Evidence.

1. An issue in respect of which there is no evidence or upon which a recovery could not be had should not be submitted to the jury.

2. In an action against a street railroad for the death of a four year old child, the court instructed that ordinary care is that degree of care and prudence that a reasonable and prudent man would exercise under similar circumstances, and that it was the duty of defendant's motorman to exercise ordinary care. Another instruction stated that it was the motorman's duty to

use ordinary care in doing all he reasonably could to slacken the speed of the car, or to stop it, after it was apparent or would have been apparent to a prudent and cautious man that the child was about to cross the track, so that it was reasonably probable that, unless the speed of the car was checked or the car stopped, there would be a collision. Held that, in the absence of a request for a more explicit instruction, defendant could not complain of the first one on the ground that it might have led the jury to believe that defendant discharged its duty toward the child by the same care which ordinary persons use under ordinary circumstances, irrespective of the fact of decedent's tender years.

3. Where the motorman of a street car saw a child cross the track in front of the car going in a direction that would carry him out of danger of collision as it would appear to a reasonably prudent man, taking into consideration the size of the child, the motorman had the right to presume that the child was not in danger, and was not required to slacken the speed of the car or stop it, unless from the actions of the child it was reasonably apparent, or would have been so to a reasonably cautious man, that the child was intending to recross the track dangerously near the car.

4. Where, in an action for the death of a child run over by a street car, it appeared that decedent was struck by a handhold fastened to the side of the car and thrown so that his head struck the rail between the trucks, there was no error in refusing to instruct with reference to the duty of defendant to equip the cars with a fender.—(Hanley vs. Ft. Dodge Light & Power Co., 107 N. W. Rep., 593.)

KENTUCKY.—Street Railroads—Collision with Pedestrian—Right to Cross—Instruction—Notice from Standing Wagon.

1. A requested instruction in an action against a street railroad company for injury to a boy who suddenly jumped from behind a covered wagon standing beside the track and, starting to cross, was struck by a car, that defendant did not have the exclusive right to the part of the highway covered by its tracks where the injury occurred, and plaintiff had a right to cross said tracks, is objectionable as seeming to indicate that plaintiff had a right to cross at the time and under the circumstances shown.

2. The mere proximity to a street railroad of a standing wagon is not notice as matter of fact to a motorman that some one is behind it who may suddenly attempt to cross the track.—(Cornelius vs. South Covington & C. St. Ry. Co., 93 S. W. Rep., 643.)

MASSACHUSETTS.—Street Railroads—Use of Streets—Care Required—Trial—Instructions—Province of Jury—Invasion Request to Charge—Refusal.

1. Where a street railway is lawfully using a street for the operation of its cars, it is only bound to exercise the care required of an ordinarily prudent and careful man under similar circumstances to prevent injury to a traveler also using the street.

2. In an action against a street railway company for injuries to a traveler by a collision, a request for a ruling that the traveler was not guilty of negligence as a matter of law in attempting to drive across the track, if he judged at the time this could be safely done because of the distance of the car from the point where he must cross, was properly refused as invading the province of the jury.

3. It is not error to refuse a request to charge which was adequately covered by the instructions given.—(Rubinovitch vs. Boston Elevated Ry. Co., 77 N. E. Rep., 895.)

MASSACHUSETTS.—Carriers—Passengers—Injuries—Negligence—Question for Jury—Contributory Negligence—Rules Regulating the Transportation of Passengers—Effect—Proof of Rules—Waiver of Rules—Evidence—Declaration of Servant—Appeal—Harmless Error—Erroneous Exclusion of Evidence.

1. Evidence in an action against a street railway company for injuries to a passenger riding on the front platform of a car, received while attempting to alight in consequence of the sudden starting of the car, examined, and held that the question of the company's negligence was for the jury, in the absence of proof of rules relating to passengers riding on the platform and evidence that the passenger knew of such rules.

2. Evidence in an action against a street railway company for injuries to a passenger riding on the front platform of a car, received while attempting to alight in consequence of the sudden starting of the car, examined, and held that the question of his contributory negligence was for the jury, in the absence of evidence of rules relating to passengers riding on the front platform and evidence that the passenger knew of such rules.

3. Where a carrier establishes a rule either prohibiting passengers from riding on the front platform of its cars, or stating that if passengers ride on the front platform they do so at their own

risk, a passenger, who with knowledge of the first rule, intentionally violates it, or with knowledge of the second rule chooses to take the risk, cannot recover for an injury thereby received.

4. That a street railway company had established a rule providing that if passengers chose to ride on the front platform of a car, they did so at their own risk, may be proved by the testimony of a passenger riding on the front platform of the car and suing for injuries received while alighting from the car.

5. Where a passenger knew that on certain cars of a street railway company there was a notice stating that passengers choosing to ride on the front platform did so at their own risk, it was not necessary for the company, in order to defeat an action by the passenger for injuries received while alighting from the front platform of a car, to prove that he also had seen such notice on the particular car on which he was riding.

6. That a street railway company regularly permitted passengers to ride on the front platform of its cars, did not show a waiver on its part of a rule providing that if passengers chose to ride on the front platform, they did so at their own risk.

7. Admissions of liability made by a servant who is not a general agent or while not engaged in the performance of a duty are inadmissible to bind the master.

8. Proof that a motorman stated immediately after an accident to a passenger sustained while attempting to alight from a car that he was under the impression that the passenger had previously left the car was admissible in support of the passenger's claim that he was thrown off by the sudden jerk of the car occasioned by the negligence of the motorman.

9. Where, in an action against a street railway company for injuries received by a passenger while attempting to alight from a car, there was a failure to show a violation of any duty owed by the company to the passenger the erroneous exclusion of evidence proving a statement made by the motorman immediately after the accident, was immaterial.—(McDonough vs. Boston Elevated Ry. Co., 78 N. E. Rep., 141.)

MASSACHUSETTS.—Death—Actions for Causing—Negligence of Decedent—Burden of Proof—Street Railroads—Injuries to Pedestrians—Contributory Negligence—Dangerous Place Defective Hearing—Evidence.

1. In an action against a street railway for the death of a pedestrian struck by a car while deceased was walking along the track, the burden was on plaintiff to prove that deceased was in the exercise of due care.

2. Where deceased was killed by being struck by a street car while he was walking on the track, the fact that the walking was better there than in the highway was no excuse for his assuming such dangerous place, when he could have walked on the highway with safety.

3. Where deceased, at the time he was killed while walking on defendant's street car track, was 78 years of age and very deaf, his want of hearing made it incumbent on him to be more alert in the use of his other senses.

4. Deceased, a man of 78 years of age and very deaf, was killed by being struck by a street car running 8 or 10 miles per hour on a wet track while deceased was walking along the track. He was first seen walking beside the track some 500 feet away from the car, and soon after he was seen walking between the rails, which he continued to do until he was struck. The motorman sounded the gong, and one of the witnesses testified that it seemed to him that the motorman was doing everything possible to bring the car to a standstill. During the time deceased was visible he did not once look around to see whether a car was coming. Held that deceased was guilty of contributory negligence as a matter of law.—(Adams vs. Boston & N. St. Ry. Co., 78 N. E. Rep., 117.)

MICHIGAN.—Carriers—Street Railroads—Negligence—Injuries to Passengers—Action—Declaration—Sufficiency.

A declaration in an action against a street railway, alleging that defendant negligently permitted a live electric wire resembling a rope to be suspended from the roof of the car whereon plaintiff was a passenger, and at the rear platform, and that, believing such wire to be a rope, plaintiff's hand came in contact therewith, that he received a shock of electricity "and was unable to release his hands from contact with the wire until relieved by the power being shut off," and that, without any fault or negligence on his part, he was injured, etc., was sufficient to support a judgment based thereon.—(Hopkins vs. Michigan Traction Co., 107 N. W. Rep., 900.)

MISSOURI.—Street Railroads—Negligence—Height of Trolley Wire.

For an electric railway company to permit its trolley wire at a point where its line crossed a railroad to sag several feet below

the height of twenty-two feet above the railroad track, required by Rev. St. 1899, Sec. 1179, whereby a brakeman on top of a freight train on the railroad was injured, is negligence, making it liable for the injury.—(Smedley vs. St. Louis & S. Ry. Co., 93 S. W. Rep., 295.)

MISSOURI.—Carriers—Care in Transporting Passengers—Injury to Passenger Alighting from Street Car—Appeal—Harmless Error.

1. A carrier of passengers is bound to exercise the care a very prudent person would exercise under similar circumstances.

2. It was the custom of a street railway company to stop its cars to receive and discharge passengers at a switch, about fifty feet from an intersecting street, though an ordinance required the stopping of cars for taking and discharging passengers after crossing intersecting streets. A car on which a passenger was riding stopped at the switch. The passenger, using ordinary care, undertook to alight, and the car was started before he could alight, causing him to fall. Held that the company was liable for the injuries received.

3. Where instructions present the theory of the defense fully, and are favorable to the defendant, it has no ground to complain that error was committed in refusing other instructions asked.—(Gilroy vs. St. Louis Transit Co., 92 S. W. Rep., 1152.)

MISSOURI.—Street Railroads—Operation of Cars—Crossing Accident—Contributory Negligence—Last Clear Chance—Trial—Instructions—Curing Error—Injury to Persons on Track—Last Clear Chance—Evidence.

1. Where plaintiff desiring to cross a street car track, immediately after the passing of a west-bound car, attempted to cross the track without waiting until the west-bound car had proceeded far enough to be out of his line of vision so that he could see a car approaching from the west on the opposite track by which his vehicle was struck, and he was injured before he had time to cross the track, he was guilty of contributory negligence.

2. Where the motorman of a street car could have stopped his car and avoided a collision with plaintiff's wagon if he had used reasonable care and kept a vigilant watch ahead on the first appearance of danger, plaintiff was entitled to recover for the injuries sustained, notwithstanding he was guilty of contributory negligence.

3. In an action for injuries to plaintiff in a collision between a street car and his wagon, an instruction objectionable as ignoring the defense of contributory negligence was cured by other instructions that though defendant's agents failed to sound any bell or gong and did not stop or slow up the car and avert the collision, and did not keep watch for persons on or approaching the track, and did not stop the car in the shortest time and space possible on the first appearance of danger, still, if plaintiff saw the approaching car, or, by looking, could have seen the car in time to have kept his horse and wagon off the track, and avoid the collision, and failed to see or heed what he saw, then plaintiff could not recover, etc.

4. Where two persons on the front platform of a street car by which plaintiff's wagon was struck, testified that they saw plaintiff's horse on the track 150 feet distant from the crossing, and that the motorman made no effort to apply the brakes until the car had run from 75 to 100 feet from the point where the horse was first seen on the track, and the car, after it struck the wagon, did not run its length, such evidence was sufficient to justify an inference that if the motorman applied the brakes when he first saw, or, by the exercise of ordinary care, would have seen, the horse on the track, the car would have been stopped in ample time to have avoided the collision.—(Rodgers vs. St. Louis Transit Co., 92 S. W. Rep., 1154.)

MISSOURI.—Carriers—Injuries to Passenger—Evidence—Negligence.

1. In an action for injuries to a person attempting to board a street car, where it is shown that the usual signal for starting the car was given at such a time as to cause injury to the plaintiff, the presumption is that it was given by the conductor.

2. Where other persons had boarded a street car before the plaintiff, and she attempted to board it while it was still standing, the conductor's failure to see her, and his act in starting the car while she was attempting to board it, was negligence.—(Kohr vs. Metropolitan St. Ry. Co., 92 S. W. Rep., 1145.)

MISSOURI.—Street Railroads—Personal Injuries—Persons on Track—Evidence—Weight—Negative Testimony—Operation—Signals—Ringing Bell—Duty to Warn Person on Track—Contributory Negligence—Infant—Personal Injuries—Damages—Evidence—Admissibility—Appeal—Disposition of Cause—Reversal—Remittitur.

1. Testimony of a bystander that no bell was rung as a train

approached a boy standing on the track is not devoid of probative value as against the testimony of those riding on the train that the bell was rung.

2. Where the gripman on a street railroad train saw a boy standing on the track a distance of 60 feet ahead, it was his duty to ring the bell to warn the boy of the train's approach, and his failure to do so was negligence for which the company was liable.

3. Whether a boy seven years old was guilty of contributory negligence in stopping on a street railroad track without looking to see if a car was approaching is a question for the jury.

4. In an action by an infant to recover for personal injuries, testimony of his father that he paid the physician who treated the infant a certain sum was inadmissible.

5. Error in the admission of evidence that the father of the infant plaintiff, in an action for personal injuries, paid a certain sum for physician's services cannot be cured by a remittitur of the amount stated to have been paid, but the entire judgment must be reversed; such evidence tending to show the seriousness of the injury, thereby affecting the amount of damages recovered.—(Butler vs. Metropolitan St. Ry. Co., 93 S. W. Rep., 877.)

MISSOURI.—Carriers—Injury to Passenger—Instructions—Damages—Personal Injuries—Excessive Damages.

1. In an action against a street railroad for injuries to a passenger, the petition alleged that the car in which plaintiff was riding was permitted to run upon a curve at an excessive and dangerous rate of speed and to strike the curve with sudden and unusual force, and there was evidence that the car did strike the curve with violence. The court instructed for plaintiff that, if the car struck the curve with violent and unusual force, etc., plaintiff was entitled to recover, and instructed for defendant that plaintiff was required to prove by the greater weight of evidence that her injuries were caused by the car entering the curve at a rapid and excessive speed, and by striking the curve with violent and unusual force. Held that the instruction given for plaintiff was not erroneous on the ground that it did not expressly require the jury to find that the car was being run at a "rapid, excessive, and dangerous rate of speed."

2. Where, in an action for injuries, plaintiff's physician testified that plaintiff was confined to her bed for three weeks and that his bill amounted to \$226 and that plaintiff's neuroasthenic condition would be permanent and that she could stand on her feet only a short time and could only walk a little, and one other physician testified that he was of the opinion that plaintiff would recover, but it would take some time, while a third thought that she would recover in a month, a verdict for \$5,500 was not excessive.—(Chadwick vs. St. Louis Transit Co., 93 S. W. Rep., 798.)

MISSOURI.—Carriers—Injuries to Passengers—Negligence—Evidence—Instructions.

Where, in an action against a street railway company for injuries to a passenger while attempting to board a moving car which he had signaled to stop, the evidence made out a prima facie case, which entitled him to go to the jury on the question of negligence in suddenly increasing the speed of the car, instructions on the theory that if the passenger was guilty of contributory negligence in attempting to board the car he could not recover, though the employees in charge of the car saw his perilous situation and made no effort to stop the car and avoid the injury, were erroneous for one who negligently places himself in a position of peril does not thereby license another to negligently injure him.—(Coleman vs. St. Louis Transit Co., 93 S. W. Rep., 920.)

MISSOURI.—Street Railroads—Injuries to Pedestrians—Crossing Accident—Presumption of Care—Contributory Negligence—Care after Discovery of Danger.

1. Where deceased, before attempting to cross defendant's street car tracks, was partially concealed by certain wagons on an intervening track, the motorman was entitled to presume that deceased would look and see the car before going on the track, and was not bound to anticipate that deceased was likely to go onto the track in front of the car.

2. Where deceased, a full grown man, approached defendant's railroad track from behind a wagon which so obstructed his view that he could not see whether or not a car that he knew was liable to be coming was actually coming, and entered on the track without looking or pausing until the obstruction to his view had passed, he was guilty of contributory negligence, precluding a recovery.

3. Where deceased stepped onto defendant's street car track from behind a wagon loaded with boxes, which prevented defendant's motorman from seeing him, the first appearance of danger was when deceased emerged from behind such wagon, and the motorman, having then done everything in his power to prevent

the accident, was not guilty of negligence.—(Hafner vs. St. Louis Transit Co., 94 S. W. Rep., 291.)

NEW JERSEY.—Carriers—Alighting from Street Car—Contributory Negligence.

1. A standing trolley car is an invitation for a passenger to alight, and he has the right to assume that the car will not be moved, without signal or notice to him, while he is openly and expeditiously so doing.

2. It is no negligence per se to rise from a seat and step to the side of a slowly moving open car which is coming to a stop, for the purpose of getting upon the runboard to alight when the car does stop.—(Davis vs. Camden, G. & W. Ry. Co., 63 Atl. Rep., 843.)

NEW YORK.—Carriers—Injury to Passenger—Negligence—Proximate Cause.

A passenger, owing to the crowded condition of the car and platform, was obliged to stand on the first step of the car, and to maintain his position he held to the stanchions on the side of the steps. A fellow passenger on the platform, while attempting to pass to the bumper on the rear of the car, came in contact with the passenger, causing him to loosen his hold on the stanchions, and throwing him to the ground. Held that the proximate cause of the injury was, not the negligence of the company in permitting the car to become overcrowded, but the act of the fellow passenger, for which the company was not liable.—(McVay vs. Brooklyn, Q. C. & S. R. Co., 99 N. Y. Sup., 266.)

NEW YORK.—Carriers—Street Railroads—Injuries to Passengers—Negligence—Proximate Cause—Question for Court.

1. A passenger on a street car who was smoking struck a match, and then threw it away while lighted, so that it ignited the frock of a female passenger, which blazed and caused a panic in the car, because of which plaintiff either was thrown, pushed, or jumped from the car and was injured. The motorman then stopped the car and acted promptly in the emergency in extinguishing the fire. Held that such facts were insufficient to establish negligence on the part of the railway company.

2. The fact that the passenger was permitted to smoke on the front seat of the car, in violation of a rule of the company, was not the proximate cause of the injury.

3. Where there is no dispute as to the facts, the question of the proximate cause of an injury is for the court.—(Fanizzi vs. New York & Q. C. R. Co., 99 N. Y. Sup., 282.)

NEW YORK.—Street Railroads—Injuries to Travelers—Contributory Negligence—Evidence.

Plaintiff, the driver of a mail wagon, was injured by a street car striking the step of his wagon as the car was rounding a curve. Plaintiff knew the rear end of the car would swing out, and he stopped when the part of the car which struck the wagon was 65 feet distant from him. Plaintiff's horse was under complete control, and the car approached slowly, leaving plaintiff sufficient time to have pulled in nearer the curb, and if he had driven close to the curb, so that the hub on the left side of his wagon projected over the curb, there would have been a clear space of 15 inches at the place of the collision between plaintiff's right hub and the nearest point approached thereto by any part of the car. Held that plaintiff was guilty of contributory negligence, precluding a recovery.—(Waters vs. United Traction Co., 99 N. Y. Sup., 763.)

NEW JERSEY.—Corporations—Extension of Period of Existence—Special Acts—Street Railroads—Right to Occupy Street—Lease—Corporate Existence of Lessor.

1. Act April 21, 1876 (P. L. 1876, p. 235, Gen. St. p. 972), providing that it shall be lawful for any corporation at any time before the expiration of its charter, or of the period named in its certificate of incorporation, to file with the Secretary of State a certificate declaring its desire to extend the period of its existence not exceeding 50 years, whereupon its period of existence shall be so extended, should be construed as not giving to specially chartered corporations existing before the passage of the statute the right to continue to enjoy beyond their charter existence exceptional powers, privileges, or franchises given them by their original charters, and as so construed the statute is not objectionable as a violation of Const. art. 4, Sec. 7, par. II, declaring that the Legislature shall pass no special act conferring corporate powers.

2. Under Act March 14, 1893, Secs. 1, 2 (P. L. 1893, p. 302; Gen. St. pp. 3235, 3236), authorizing the incorporation of traction companies, and providing that such companies shall have power to enter upon any street or highway upon which any street rail-

way is constructed, with the consent of the persons operating the same, and maintain and operate such railway, etc., a traction company which enters upon a street containing street railway tracks, and operates such tracks by the consent of and under lease from the company which constructed the tracks, is entitled to maintain the tracks in the street, even though at the time of the lease the lessor's corporate existence had ceased by the limitations of its charter.—(Mayor, etc., of Jersey City vs. North Jersey St. Ry. Co., 63 Atl. Rep., 906.)

NEW YORK.—Evidence—Admissions by Agent or Employee—Negligence—Master and Servant—Injuries to Servant—Sufficiency of Evidence.

1. In an action against an electric company for death of its street lamp trimmer, killed by an electric shock while in the performance of his duty, testimony of a witness that a former superintendent of the company had condemned the hoods of the lamp, and that he heard him say that the hoods were no good, that they were not safe, is not admissible against the company.

2. Evidence in an action against an employer for death of an employee, killed while trimming an electric lamp in the course of his duty, held insufficient to sustain a verdict against defendant.—(Gardner vs. Schenectady Ry. Co., 98 N. Y. Sup., 1034.)

NEW YORK.—Street Railroads—Injuries to Traveler—Contributory Negligence.

A passenger on alighting from a street car passed behind the car, and started to walk diagonally across an adjoining track, when he was struck by a car approaching from the opposite direction. Had he looked he could have seen the approaching car, which was a short distance from him, and approaching rapidly. His waiting for a moment until the car had passed would have avoided the accident. Held that he was guilty of contributory negligence as a matter of law.—(McGreevy vs. New York City Ry. Co., 98 N. Y. Sup., 1024.)

NEW YORK.—Appel—Disposition of Cause—Effect of Change in Facts.

Where there was no error in the trial of an action for personal injuries, but the jury awarded damages on the theory that plaintiff would suffer paralysis as the result of his accident, the probability of that result resting on the opinion of a physician, who stated that the paralysis would occur within a period of two or three years from the date of the accident or not at all, and that period has substantially elapsed before the hearing of the case in the Court of Appeals, an affirmation of the judgment will be without prejudice to the right of defendant to move for a new trial.—(Fogel vs. Interborough Rapid Transit Co., 77 N. E. Rep., 1022.)

NEW YORK.—Street Railroads—Persons on Track—Negligence—Evidence.

Defendant's car was proceeding south in a thinly populated part of New York on a dark night at a speed of 5 or 6 miles an hour. Plaintiff's decedent appeared in front of the car either on the opposite track or between the two tracks driving certain cows. As soon as he was seen, the motorman, who was looking in his direction, attempted to stop the car and rang the bell, but deceased paid no attention to the bell. When the car was 20 feet from him, he attempted to cross the track on which the car was proceeding, and before the car could be stopped he was struck. Held insufficient to establish negligence on the part of the railway company.—(Beirne vs. Union Ry. Co. of New York City, 99 N. Y. Sup., 584.)

NEW YORK.—Street Railroads—Injuries to Persons on Tracks—Contributory Negligence—Care Required as to Persons Crossing Street—Action for Injuries—Instruction.

1. Where, in an action against a street railroad for injuries to one struck by a car while crossing the track, it appeared from her evidence that she looked each way for a car before leaving the curb, but then proceeded across the street without again looking, she failed to show affirmatively freedom from contributory negligence.

2. A motorman is not required to use the highest degree of care to avoid an injury to one crossing the street, but only ordinary care.

3. In an action against a street railroad for injuries to one struck by a car while crossing a street, an instruction that if defendant's servant did not have the car under control, and the injuries were caused by defendant's negligence, plaintiff was entitled to recover, was erroneous as ignoring the question of contributory negligence.—(Solomon vs. New York City Ry. Co., 99 N. Y. Sup., 529.)

NEW YORK.—Carriers—Injuries to Passengers—Platforms—Warning—Evidence.

1. Where a subway platform was constructed according to law, and the space left between the edge of the platform and the cars was necessary to a safe passage of the cars along the platform, the carrier was not guilty of negligence merely because of the existence of such space, rendering it liable for injuries to a passenger who fell into the same while attempting to board a train.

2. Where a carrier of passengers maintained a subway station platform with a space 9 ins. wide between the edge of the platform and the subway cars, it was bound to give such timely warning to passengers about to board the cars as ought to be and naturally would be heard and understood by the passengers who were giving ordinary attention to their surroundings, though it was not bound to give a specific caution to a particular passenger.

3. In an action for injuries to a passenger while boarding a subway train, by falling into a space between the depot platform and the train, evidence that no warning of the existence of such space was given. Held insufficient to sustain a finding to that effect.—(Coogan vs. Interborough Rapid Transit Co., 99 N. Y. Sup., 382.)

NEW YORK.—Trial—Motion to Dismiss Complaint—Evidence, How Considered—Street Railways—Negligence—Injuries—Contributory Negligence—Sufficiency of Evidence.

1. Where, in an action for injuries through negligence, defendant moved to dismiss the complaint on the ground that plaintiff failed to show himself free from contributory negligence, that it affirmatively appeared that he was guilty of contributory negligence, and that no negligence had been made out against defendant, it was to be assumed that plaintiff's evidence was true, and he was entitled to the most favorable inference deducible from the evidence.

2. Where it appeared that, while plaintiff was standing on the hub of his wagon, bending over and lifting out a heavy stone, he was struck by a street car, which was approaching at a high rate of speed; that no signal was given until the car was within a foot of the plaintiff; that no car had passed upon the track for 20 minutes, and that, even if plaintiff at the time of getting on the wheel of the wagon had looked up the street, he could not have seen the car by reason of the fact that it was then on a cross street—it could not be said as a matter of law that he was guilty of contributory negligence.—(Volosko vs. Interurban St. Ry. Co., 99 N. Y. Sup., 484.)

Jenks and Miller, JJ., dissenting.

NORTH CAROLINA.—Street Railroads—Collisions—Injury to Traveler—Contributory Negligence—Question for Jury—Trial—Instructions—Evidence to Sustain—Operation of Cars—Care Required—Injury to Traveler in Collision with Car—Evidence—Instructions—Obligation of Traveler and Street Car on Street—Injury to Traveler in Collision with Street Car.

1. Evidence in an action against street railroad company for injuries received by a traveler in a collision with a car examined, and held that the question of his contributory negligence was for the jury.

2. Where there was no evidence that plaintiff lingered on the track, an instruction authorizing a verdict for the company on the traveler's failure to turn off the track when called on by a servant of the company was properly refused; there being no evidence that the traveler was injured by failing to turn off the track.

3. Where a street car is moving at a lawful rate of speed, and a traveler comes on the track, the company is required to use ordinary care, giving the signals, lowering the speed, and stopping the car, if reasonably necessary, and where the car is properly equipped and the equipments are used with reasonable promptness, the company will not be liable for an injury sustained, but where the car is moving at an excessive rate of speed, and by reason thereof the signals cannot be given or the appliances used, the exercise of ordinary care, the company will be liable for an injury, because it has, by the excessive speed, brought about a condition which it cannot control.

4. Where, in an action against a street railroad company for injuries to a traveler in a collision with a car, the evidence showed that the car was run at an excessive rate of speed, a requested instruction declaring that the company, on the traveler suddenly driving his wagon across the track, was only required to use ordinary care to avoid injuring him, was properly modified by adding: "and the car was not running at an excessive rate of speed."

5. The running of a street car at a rate of speed in excess of that fixed by a municipal ordinance is evidence of negligence.

6. A traveler and a street car have in common the right to use

the street, but, as the car must run on the track or not at all, the traveler must change his course and use the unoccupied portions of the street and thereby give way to the car to prevent a collision, and the servants operating the car must move it at a reasonably safe speed, and equip the car with signals and means.

7. Where a motorman in charge of a car sounded the gong, or where the car approaching a traveler made sufficient noise to be heard by him before he attempted to cross the track, and notwithstanding either the sounding of the gong or the noise of the car, he undertook to cross the track when the car was so close that a collision could not, by the exercise of reasonable care, be avoided by the company, he was guilty of contributory negligence, precluding a recovery.—(Davis vs. Durham Traction Co., 53 S. E. Rep., 617.)

PENNSYLVANIA.—Street Railroads—Injury to Pedestrian—Negligence—Evidence—Negative and Positive—Contributory Negligence.

1. Where a person crossing a street car track is run over by an electric car, whose lights have gone out, rapidly moving down a steep grade, the question of the company's negligence is for the jury.

2. Where persons looking for a street car in the direction from which he is coming, declare that the car which is directly in their sight had no headlight burning and was in complete darkness, their evidence was not negative in distinction to positive evidence.

3. Where a person is injured while crossing a street car track, and testifies that he stopped, looked, and listened before passing on the track, and was struck by a car which he did not see, because the lights were out and no headlight was burning, the question of his contributory negligence is for the jury.—(Cox vs. Schuylkill Valley Traction Co., 63 Atl. Rep., 599.)

RHODE ISLAND.—Carriers—Injuries to Passengers—Setting Down Passengers—Invitation to Passenger to Alight.

1. In an action for injuries to a passenger, evidence that a depression into which she stepped on alighting from the car had been there for a long time, that at the time of the accident grading was being done to level up the ground adjacent to the rails near by, that the defendant had established a white pole as a stopping place near the point of the accident, and that the depression was hid from view as she sat in the car, was sufficient to import notice to the defendant of the unsafe condition of the ground and to make out a prima facie case of its negligence.

2. The stopping of a street car and call of the conductor, "Butler Hospital," was a sufficient invitation to a passenger to alight and to justify her in believing that she could alight with safety.—(Tilden vs. Rhode Island Co., 63 Atl. Rep., 675.)

TEXAS.—Witnesses—Impeachment—Inconsistent Statements—Damages—Personal Injuries—Evidence—Self-Serving Declarations—Carriers—Injury to Passenger—Instructions.

1. Where, in an action for personal injuries, a physician testified for defendant that prior to the accident he examined plaintiff for life insurance and found it impossible to recommend plaintiff as a "perfect physical man," it was proper to permit plaintiff to show the questions asked plaintiff and answered by him on such physician's examination, which tended to discredit the statements of the physician.

2. Where, in an action for personal injuries, plaintiff claimed that the accident had caused a certain injury, and the evidence showed that such an injury might exist from birth, it was proper to permit plaintiff to show that, prior to the accident, his answer, in an application for life insurance, that he had never sustained such an injury as that in question, had been attested as truthful by the examining physician.

3. An instruction that it is the duty of a carrier to exercise, for the safety of passengers, the highest degree of care which very prudent and careful persons, skilled in the business, would use under like circumstances, and that failure to exercise such care constitutes negligence. Held that the instruction was not open to the objection that the carriers are only required to exercise that high degree of care that very prudent and careful persons would exercise under the same circumstances, and that the charge imposed a higher duty than the law required.

4. Where defendant's evidence was sufficient to warrant a finding that plaintiff jumped from defendant's street car while it was in motion, it was error to instruct that, if plaintiff was guilty of contributory negligence in alighting from the car, and such negligence proximately caused the injury, plaintiff was entitled to recover, since, if he was guilty of negligence in alighting under the circumstances, the negligence was the proximate cause of his injuries.—(San Antonio Traction Co. vs. Parks, 93 S. W. Rep., 130.)

FINANCIAL INTELLIGENCE

The Money Market

WALL STREET, NOV. 14, 1906.

The stringency in the money market has continued during the greater part of the week, rates for both call and time loans exceeding last week's high levels. The further heavy losses in cash sustained by the local institutions as a result of the tremendous volume of business being carried on in all parts of the country, together with the requirements for crop moving purposes, have left the New York City banks in a position that made it imperative for them to curtail their accommodations for speculative purposes, and a large part of the week's supply consisted of out-of-town money which was attracted by the high interest charges prevailing at this center. The statement of the Clearing House banks published on last Saturday made a poor exhibit. Not only was the surplus reserve entirely eliminated, but for the third time during the year a substantial deficit was created. It was thought in some quarters that present conditions warranted the adoption of additional relief measures by the Treasury Department, but this belief was not shared by Secretary Shaw, who refused to take any action until the general business interests of the country demanded Federal aid. During the past week or ten days the inquiry for money at the principal Western cities has decreased considerably, indicating that the requirements for the grain movement have been almost satisfied, but much of the money that would ordinarily flow to New York will now be diverted to Southern points for the movement of cotton. This latter movement is now quite heavy, and will continue for some weeks to come. It is not likely, therefore, that there will be any material lowering of rates in the near future, especially as rates for money at New York and London are about on a parity, and any decided easing off in the money rates here would probably be followed by exports of gold to Europe.

The situation abroad, and especially at London, has not changed appreciably. The Bank of England has been slow to replenish its gold reserve, but at the same time it has not found it necessary to advance its minimum rate of discount above 6 per cent. London has resold to our bankers a large amount of American stocks and bonds, which so far have been paid for by exports of grain and cotton. The decline in the price of the latter commodity has stimulated foreign buying, and the bills offered in the foreign exchange against those shipments have been sufficient to prevent any material advance in exchange rates. The tone of the exchange market, however, has been decidedly strong, considering the extremely high rate for money in the New York market. Money on call has loaned at 4 per cent and at 20 per cent, the average rate being about 8 per cent. The demand for time accommodations, and especially for the short maturities, ruled fully 1 per cent above those prevailing in the preceding week. Sixty and ninety-day money command 6 per cent and a commission, bringing the total charge to borrowers up to 7½ per cent, while four months' money was not obtainable under 7 per cent. For the long maturities 6½ per cent was asked, but offerings at that figure were comparatively small. Mercantile paper was unchanged at 6 to 6½ per cent for the best names.

The bank statement published on Nov. 10 was disappointing. Loans decreased \$7,292,700, due to the shifting of loans from the banks to other institutions. The loss in cash was nearly twice as large as indicated by the preliminary estimates, and amounted to \$8,831,300. The reserve required was \$4,267,400 less than last week, which, deducted from the loss in cash, reduced the reserve by \$4,562,900, which wiped out the surplus and created a deficit of \$1,514,125. In the corresponding week of last year the deficit was \$4,428,800, compared with a surplus of \$8,894,550 in the week of 1904, \$6,138,425 in 1903, \$18,328,350 in 1902, \$10,103,825 in 1901, and \$4,606,050 in 1900.

The Stock Market

With the State election removed from consideration, the movement of prices on the Stock Exchange has been governed by the developments in the money market, and these were of a character to adversely affect speculative sentiment and resulted in a lower level of prices. The selling did not have the appearance of necessitous liquidation, but rather the reduction of holdings

owing to the heavy carrying charges, and the belief that the stocks can be recovered at a lower level before the end of the year. It is obvious that monetary conditions are opposed to any extension of speculative operations in high-priced stocks, and public interest has turned to mining shares, in which there has been an increased business. The large increase in the production of copper has not been sufficient to meet consumptive requirements, and at ruling prices for the metal all the copper producing companies are making enormous profits and adding to the real value of their shares, regardless of speculative operations in them. The output of gold and silver is steadily being enlarged, and as this adds to the volume of wealth these stocks are growing in favor. Saturday's bank statement was a poor one, and the Clearing House banks are now \$1,514,125 below the legal reserve limit. Secretary Shaw has announced that he will not come to the relief of the money market until assured that the commercial interests of the country are in danger of embarrassment from a scarcity of funds, but there is upwards of \$25,000,000 in the Federal Treasury available for use should any emergency call for treasury relief.

The demands of railway employees for higher wages must be conceded or strikes are to be expected, and with the present congested condition of the roads any labor trouble that would retard the movement of freight would be a business calamity. The stock market has to confront the fact that the unprecedented prosperity of the country requires the use of practically all the money in the country, as well as that conditions abroad preclude the possibility of any help from that quarter at the present time. Europe has shipped to this side a large quantity of our securities which have been paid for by our exports of grain and cotton. Everything but the money market encourages optimism, and many of the dividend payers are now selling at prices which should attract the attention of investors.

The local traction situation is practically unchanged, but there was good buying of all issues on the recent decline, and a considerable short interest is said to exist in Brooklyn Rapid Transit stock. Dividend talk on this issue continues, but it is rather premature. Earnings of all lines are holding up, and the continued growth of population is one of the important influences.

Philadelphia

About the only feature of the market for the traction stocks during the past week has been Philadelphia Rapid Transit. The selling of the stock which characterized the dealings at the close a week ago, was continued on a somewhat larger scale, and although excellent support was rendered at times, it was not sufficient to check the downward tendency. Opening at 27¼, the price ran off to 24¾ and closed at the lowest. Fully 20,000 shares of the stock changed hands. Trading in the other traction issues was comparatively quiet, and while some irregularity was displayed, the net changes for the week were unimportant. Lehigh Valley Transportation preferred sold to the extent of 725 shares at 25 to 25¼. Philadelphia Traction sold at 97½ and 97¼ for odd lots, and United Companies of New Jersey brought prices ranging from 254 to 255½. Other sales included American Railways at 51½ to 52; Consolidated Traction of New Jersey at 77½ to 78; Philadelphia Company preferred, 48¾ to 48½; Railways General at 5½; Interstate Railways at 121, and Union Traction at 64½ to 64¾.

Baltimore

The market for tractions at Baltimore was somewhat more animated than in the preceding week and prices generally displayed firmness. United Railway issues again led the list in point of activity, about \$60,000 of the 4 per cent bonds changing hands at 88¾ and 89. The new funding 55 sold to the extent of \$35,000 at 89¼ and 89½, while the income certificates brought 69¼ and 69¾ for about \$50,000. United Railways free stock was firm, 600 shares changing hands at 15¼ and 15½. Other transactions included City & Suburban 55 at 110½, Norfolk Railway & Light 58 at 98¼, Norfolk Railway & Light stock at 18½, and Washington City & Suburban at 104.

Other Traction Securities

Only a moderate volume of business was transacted in the tractions in Boston, and apart from Boston Elevated, which de-

clined from 155 to 154, prices generally held firm. Boston & Suburban common sold at 13, and upwards of 900 shares of Boston & Worcester common sold at 28½ and 28; Massachusetts Electric common advanced from 18 to 18½ on the exchange of 500 shares, and the preferred brought 69. West End common sold at 93½ to 94, and the preferred at 109½. Traction stocks at Chicago were practically neglected, trading being confined to a few issues. North Chicago, after selling at 35½ early in the week, advanced to 38, while Chicago Union Traction common sold at 4½. South Side Elevated brought 90½ and 91.

Security Quotations

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

	Nov. 7	Nov. 14
American Railways	52	52
Boston Elevated	155	154
Brooklyn Rapid Transit	80½	77½
Chicago City	169	170
Chicago Union Traction (common).....	4½	4½
Chicago Union Traction (preferred).....	14	14½
Cleveland Electric	—	—
Consolidated Traction of New Jersey.....	77	77½
Detroit United	88½	86
Interborough-Metropolitan, W. I.	38	36½
Interborough-Metropolitan (preferred), W. I.	79	76½
International Traction (common).....	66	—
International Traction (preferred), 4s.....	88	—
Mahattan Railway	144	142
Massachusetts Electric Cos. (common).....	17½	18½
Massachusetts Electric Cos. (preferred).....	67½	69
Metropolitan Elevated, Chicago (common).....	23	25
Metropolitan Elevated, Chicago (preferred).....	64	65½
Metropolitan Street	106	106
North American	88½	88½
North Jersey Street Railway.....	28	28
Philadelphia Company (common).....	48½	48½
Philadelphia Rapid Transit	26	24½
Philadelphia Traction	97½	97½
Public Service Corporation certificates.....	65	65
Public Service Corporation 5 per cent notes.....	95	95
South Side Elevated (Chicago).....	90½	91
Third Avenue	123	120
Twin City, Minneapolis (common).....	111	110
Union Traction (Philadelphia).....	64½	64

Metals

According to the "Iron Age," October was a record-breaking month so far as the production of pig iron was concerned. The high output is reflected in the estimates of capacity of the furnaces in blast on the first of the month, when they were running at the rate of over 500,000 tons per week, the first time that that mark has ever been passed in the history of the American iron industry. Thus far there are no indications that the rise in the price of pig iron has in any way curtailed consumption. Car builders, have added some large commitments, and some good bridge building orders have been taken.

Copper metal continues in urgent demand, and prices for all grades of the refined metal rule firm. Lake is quoted at 21¾ to 22½c.; electrolytic at 21½ to 22c., and castings at 21¼ to 21¾c.

CONNECTICUT TROLLEY BUILDING

The work being done in Connecticut at the present time in the way of building electric railways seems to have been overlooked in the flood of petitions being prepared for presentation to the Legislature in January, as previously mentioned in the STREET RAILWAY JOURNAL. As an instance of work now in hand may be cited the completion by the Consolidated Railway Company of its new line from Norwich to Central Village, by which a complete trolley connection was made from New London to Worcester, Mass. The new link of road passes through Jewett City and Plainfield, and for a part of the way makes use of the steam tracks of the Norwich & Worcester Railroad.

Another road demanding attention is the line from Thomaston to Waterbury. The Connecticut Railway & Lighting Company has agreed to meet this road, proceeding north from Waterbury, before July 1 next. A plan is being revived to extend the Bristol & Plainville Tramway Company's line from Terryville to Thomaston, and a charter will be asked for by Waterburians for an electric railway from that city running northeast to Milldale and

connecting there with the line running across the State from Springfield, Mass., to New Haven.

The Shore Electric Railway also must be considered, as work has been begun on the line from Stony Creek to Essex, by way of Saybrook. This will be the longest strip of trolley road in the State, and is believed to be in some way an outgrowth of the efforts of the Consolidated Railway Company. The new road will probably be completed next year. The grading from Essex to Saybrook will be completed this fall.

Work on the electrifying of that portion of the Consolidated Railroad between Meriden and Middletown, it has been decided by General Manager J. K. Punderford, will begin in the early spring and be rushed to completion.

The Lebanon Street Railway Company, which has just perfected organization and which holds a franchise to construct a trolley line from Fitchville to Lebanon, will try to get additional franchise rights from the Legislature before beginning building operations. The Company will ask for a charter to build from Lebanon to Manchester, thus providing for a continuous trolley from Norwich to Hartford. The distance from Fitchville to Lebanon is 11 miles, and from Lebanon to Manchester, 15 miles. It is estimated that it will cost approximately \$500,000 to construct the road.

INTERBOROUGH-METROPOLITAN REPORT FOR QUARTER

Earnings of the Interborough-Metropolitan Company for the quarter ended Sept. 30 made an unfavorable showing as compared with the preceding quarter, but presented some improvement over the corresponding period in 1905. After the payment of interest and rentals, including the dividend on the unexchanged Metropolitan Street Railway stock and the dividend on the Interborough-Metropolitan preferred stock and taxes, there was a balance of \$460,862, compared with a balance of \$843,625 in the preceding quarter and a deficit of \$83,023 in the same time last year. Dividends on Interborough stock amounted to \$787,500, so that there was a deficit for the quarter of \$317,638, compared with a surplus of \$56,125 in the quarter ended June 30 of the current year. Detailed earnings follow:

	1906	1905	Changes
Gross earnings	\$10,247,805	\$9,677,005	Inc. \$570,800
Operating expenses	4,971,272	4,988,588	Dec. 17,316
Net earnings	\$5,276,533	\$4,688,417	Inc. \$588,116
Other income	288,748	275,840	Dec. 12,902
Gross income	\$5,565,281	\$4,894,257	Inc. \$671,024
Interest and rentals (including 7 per cent per annum on unexchanged Metropolitan Street Railway Company stock and 5 per cent per annum on Interborough-Metropolitan preferred stock)	\$4,492,198	\$4,412,672	Inc. \$79,526
Taxes (excluding special franchise taxes of New York City Railway system, in litigation).....	583,221	564,698	Inc. 18,613
Total interest, rentals and taxes.....	\$5,075,419	\$4,977,280	Inc. \$98,139
Balance	\$469,862	*\$83,023	Inc. \$552,885
Dividends on Interborough Rapid Transit Company stock	787,500	700,000	Inc. 87,500
Deficit	\$317,638	\$783,023	Dec. \$465,385

* Deficit.

NEW YORK CITY RAILWAY COMPANY (And Its Allied Companies)

Consolidated statement of income for the three months ended Sept. 30, 1906, and Sept. 30, 1905:

	1906	1905	Increase
Gross earnings	\$5,755,784	\$5,701,908	\$53,876
Operating expenses	2,838,974	3,021,141	†182,167
Net earnings	\$2,916,810	\$2,680,767	\$236,043
Other income	119,677	115,998	3,678
Gross income	\$3,036,487	\$2,796,765	\$239,722
Deductions from income (excluding special franchise taxes in litigation).....	3,018,612	2,989,608	29,004
Net income	\$17,875	*\$192,843	\$210,718

* Deficit. † Decrease.

MONTREAL STREET RAILWAY REPORT FOR YEAR

The annual report of the Montreal Street Railway Company for the year ended Sept. 30, 1906, has just been issued. An interesting exhibit is a series of curves, which show that in twelve years the gross earnings have increased \$1,907,709, or 181 per cent. Operating expenses \$1,197,008, or 186 per cent. Net earnings \$799,802, or 177 per cent. During the same period the number of passengers carried, both cash and transfer, have increased 67,935,738, or 206 per cent.

For the past several years the company has paid out in dividends practically its entire surplus for the various years. For instance, in the last year the earnings on the stock were equal to 10 1/2 per cent, while 10 per cent was paid in dividends. As a result of these dividend expenditures, the profit and loss surplus account has increased but slightly and on Sept. 30 last, amounted only to \$524,770.

During the last year the company did not increase its outstanding bonds, which amount to \$2,500,368, but it did increase its loan from the Bank of Montreal \$833,975. This loan now

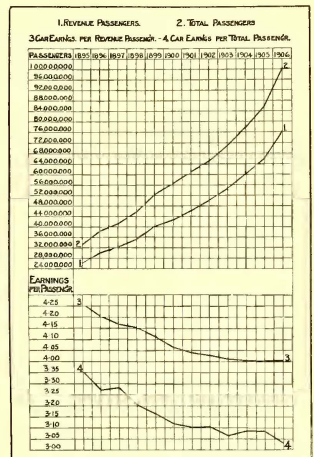
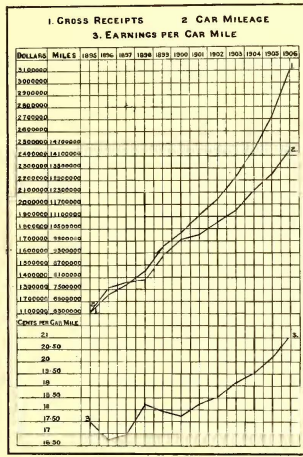
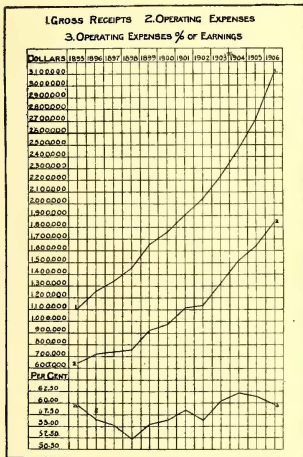
ing of the shareholders has been called to authorize the directors to take action in the matter.

The company has paid to the city of Montreal the usual property and business taxes and tax on earnings, \$101,696.59; account snow cleaning, \$15,031.13; making a total of \$206,727.72.

The general operating report follows:

	1906	1905
Gross	\$3,100,487	\$2,707,474
Expenses	1,850,720	1,650,566
Net	\$1,249,767	\$1,056,908
Charges, etc.	546,004	363,739
Surplus	\$703,763	\$693,169
Dividends	700,000	691,667
Surplus	\$3,703	\$1,502
Passengers carried	76,356,099	66,631,206

The general balance sheet as of Sept. 30, 1906, compares as follows:



DIAGRAMS ACCOMPANYING REPORT OF MONTREAL STREET RAILWAY COMPANY

amounts to \$1,483,975. Part of the amount from the increased loan was used in new construction and the purchase of additional equipment.

Since the close of the last fiscal year, it has been decided by the company to issue \$2,000,000 new stock at a premium of 75 per cent, and also to make the par value of the company's shares \$100 instead of \$50.

This has been done in order to provide funds for the floating debt and for betterments and extensions of the system. It was believed necessary to issue the stock at such a premium as to take care of the interest charges so that they will not be too great a burden on the net revenue.

President Forget, in presenting the report to the stockholders, made these general observations:

Owing to the growth of the city, several new extensions to the tracks of the company have been constructed during the year and the rolling stock and equipments have been increased to keep up with the requirements of the traffic.

During the year an agreement was entered into with the parties owning the stock and bonds of the Montreal Terminal Railway Company to purchase their interests.

In order to provide funds for the floating debt of the company, and for additions to the plant and property and extensions of the system, it will be necessary to issue further securities, and your directors have seriously considered this matter, and are of opinion that in view of the large expenditures necessary at the present time for renewals of the company's tracks and equipment, that either bonds should be issued or stock at such a premium that the interest charges will not be too great a burden on the net revenue of the company. For this purpose a special meet-

	1906	1905
Road construction and equipment.....	\$8,392,547	\$7,071,544
Stores	347,311	187,470
Real estate and buildings	1,073,810	1,810,721
Accounts receivable	70,607	82,544
Montreal Park & Island Railway advance	215,064	229,755
Cash	40,202	50,111
Fire insurance fund	266,000	266,000
Stocks and bonds of other companies...	1,572,399	1,223,265
Total	\$12,878,540	\$11,827,709

	1906	1905
Capital stock	\$7,000,000	\$7,000,000
Bonds	2,500,368	2,500,368
Bank of Montreal loan.....	1,483,975	650,000
Accounts and wages payable.....	396,354	232,222
Accrued interest.....	34,568	34,568
Accrued taxes	187,235	150,551
Employees' securities	15,371	14,389
Unclaimed dividend	1,057	1,957
Unclaimed tickets	37,874	30,728
Suspense account	103,007	115,302
Dividends payable	175,000	175,000
Fire insurance fund	341,245	30,930
Contingency act	7,817	81,626
Surplus	524,770	521,067
Total	\$12,878,540	\$11,827,709

FENDER TESTS CONTINUED IN MASSACHUSETTS

The tests of car fenders made under the direction of the Railroad Commissioners of Massachusetts, at Newton, were continued Friday, Nov. 9. Messrs. Jackson and Bishop, Prof. Swain and Inspector McLarin represented the Commission. A number of railroad experts were also in attendance. Three devices not hitherto tried in this series of tests and the wooden plow-shaped fender that was tried three weeks ago were the only ones experimented with. Friday, Nov. 16, the Commissioners will give an opportunity for tests of other devices for saving life in front of street cars.

The first fender tried consisted of a projecting platform that could be tilted downward on the track when tripped by the motorman, and a flexible dashboard protector. Six times the car with this fender attached ran down upon a lay-figure stuffed with sand, and every time, except the first, the figure was picked up practically unharmed. A wheel-guard, offered by the same inventor, proved pretty successful.

The next trial was of a fender that has been in use to some extent in Providence, Attleboro and Pittsfield. A metal-frame scoop projects in front, where it may be tilted down on the track on pressure of a plunger by the motorman, while an apron of flexible metal strips protects the dashboard. Running this fender at the small dummy, which had been placed erect between the rails, it picked the dummy up and caught it on its rebound so that it was carried along in the scoop, with feet scraping the ground, but free. A second trial against the same dummy had much the same result, except that the head was scraping instead of the feet. On the rebound, the figure was carried along with side and head dragging. With the large and small dummies prostrate, in various positions between and over the rails, there were four trials, in each of which the figure was picked up unharmed excepting the last, when the fender "jumped," passed over the figure, but pushed him so nearly outside the range of the wheels that only one hand was amputated.



BUFFALO & LAKE ERIE TRACTION CO.

The Buffalo, Dunkirk & Western Railroad and the Lake Erie Electric Traction Company have been merged under the name of the Buffalo & Lake Erie Traction Company, with \$3,000,000 authorized capital stock, in shares of \$100 each. This stock will be exchanged dollar for dollar for the \$3,500,000 stock of the Buffalo, Dunkirk & Western Railroad, and the \$100,000 stock of the Lake Erie Electric Traction Company. The last named company was incorporated at Albany on Oct. 29, 1906, as a consolidation of the Lake Erie Traction Company and the South Shore Suburban Railway. The new company is organized according to the plan of Parker, Hatch & Sheehan, of New York, for the establishment of a through electric line from Buffalo via Dunkirk to Erie, Pa. The directors are: Louis B. Grant, president; Peter C. Schutram, vice-president; Marshall J. Dodge, treasurer; Charles H. Werner, secretary; William J. Bagnell, James A. Byrne, Arthur McCausland, Rudolph W. Yates and John W. Searing, all of New York City.



PROPOSED ELECTRIC RAILWAYS OUT OF ATLANTA

More than 250 miles of electric railway are proposed to be built out of Atlanta by three companies. Of these companies the Atlanta, Griffin & Macon Electric Railway has surveyors in the field locating two routes to Macon, one of which will be selected. This railway will touch Hopeville, Forest Park, Jonesboro, Hampton, Griffin and Forsyth, terminating at Macon, and will parallel the Central of Georgia Railroad, but will reduce the mileage of the present shortest rail connections with Macon, 88 miles by the Southern Railway, a number of miles. The franchise granted by the city of Atlanta to the company is for a period of 32 years and requires the road to give bond in the sum of \$25,000 to commence the work within one year and to complete it in two years. Already there is a movement on foot in Macon and Albany to construct an electric railway between those two cities, and the promoters of the Atlanta, Griffin & Macon Electric Railway have been invited to join hands with the projectors of that road, but as yet no deal has been consummated. Another interurban line now in the chrysalis stage is the Atlanta & Carolina Electric Railway, which will extend from Atlanta to West Point, a distance of 86 miles, and from Atlanta to Commerce, in Jackson County, via Lithonia, Conyers, Lawrenceville and Jefferson.

and from Commerce to Anderson, S. C., making the total mileage 170 miles.

New work is not confined to the projected interurban lines, however. The Georgia Railway & Electric Company is preparing to add to its system extensions of its suburban lines. As soon as the county commissioners widen Peachtree road from Brookwood to Buckhead, an improvement already decided upon, the electric railway, will be extended to Buckhead, a distance of 4 miles. The line to East Point will also be extended to Hopeville, making this flourishing suburb a link in its suburban chain The Decatur line will be built on to Stone Mountain via Clarkston, putting these two places in direct communication with Atlanta and adding to miles to the Eastern branch of the Georgia Railway & Electric Company. These extensions will add a total of 18 miles to this company's system. In addition to this, the Georgia Railway & Electric Company is spending \$600,000 this year in laying double tracks along its present lines and in additions to its power plants.



A STATEMENT BY MR. MELLEN REGARDING THE NEW ENGLAND INVESTMENT & SECURITY CO.

The first official information to be given out about the newly formed New England Investment & Security Company is contained in a letter from Charles S. Mellen, president of the company and of the New York, New Haven & Hartford Railroad, to the banking firm of Mackay & Company, of Boston. The letter states that the New England Investment & Security Company is a voluntary association formed on June 25. Its officers are Charles S. Mellen, Nathaniel Thayer, of Boston; Charles F. Brooker, of Ansonia, William Skinner, of Holyoke; Robert W. Taft, of Providence; Edwin Milner, of Providence and Moosup, and D. N. Barney, of Farmington. Its capitalization is \$10,000,000 in 4 per cent preferred shares and \$10,000,000 common shares. It holds in trust stocks and bonds of the Worcester & Southbridge Street Railway Company, Worcester Railways & Investment Company, Springfield Street Railway Company, Springfield Railway Company, Berkshire Street Railway Company, Western Massachusetts Street Railway Company, Hartford & Worcester Street Railway Company. It also holds 5000 shares of stock of the New York, New Haven & Hartford Railroad Company. These are the trolley properties formerly owned by the New Haven system until the enactment of legislation in Massachusetts making illegal the ownership by steam railroads of competing electric roads. The trustees named for the new corporation, among whom are two Providence men, are all directors of the New York, New Haven & Hartford.

Mackay & Company have notified stockholders of the Worcester Railways & Investment Company, as previously mentioned in the STREET RAILWAY JOURNAL, that the firm has purchased a majority of the shares in that company and has exchanged them for preferred stock of the New England Investment & Security Company, offering the stockholders the privilege of exchanging their outstanding holdings at the rate of 20 shares of Worcester Investment Company stock for 21 shares of the 4 per cent preferred stock of the new holding company. President Mellen's letter is enclosed with the circular of the banking corporation. The letter concludes:

Provision is made in its present capitalization for the acquirement of certain other securities which have not as yet been exchanged for the preferred shares. The company's intention is to acquire only securities from which the income will fully meet the dividend requirements of its preferred shares. But in order that the interests of the preferred shareholders shall be fully and amply protected, the Consolidated Railway Company, by indorsement, has guaranteed the punctual payment of semi-annual dividends at the rate of four per cent per annum, and also \$105 per share and accrued dividend in the event of liquidation.

This guarantee is further protected by a three-party agreement between this company, the Consolidated Railway Company and the New York, New Haven & Hartford Railroad Company, under the terms of which the New York, New Haven & Hartford Railroad Company agrees to indemnify the Consolidated Railway Company against loss resulting from such guarantee, as follows:

"The New York, New Haven & Hartford Railroad Company hereby requests the Consolidated Railway Company to make such guarantee upon such consideration and agrees that it will indemnify the Consolidated Railway Company against loss upon said guarantee."

This, in the opinion of our counsel, J. H. Benton, Jr., under whose direction and supervision all steps and proceedings relating to the formation of the company have been taken, is in effect a valid and binding obligation of the New York, New Haven & Hartford Railroad Company, which, of course, like other valid and binding obligations, takes precedence of payment of dividends upon its stock.

INCREASED SERVICE PROPOSED BY THE NEW YORK CITY RAILWAY COMPANY

In accordance with the recommendations of the State Railroad Commissioners, the New York City Railway Company has announced that as soon as men and equipment are available, it will increase its service about 10 per cent. This increase will be confined largely to the long-haul lines, as the service on the principal cross-town lines is already as large as can be run during the rush hours.

In this connection it is of interest to refer to the efforts of the company to secure the best help available by offering high wages. The wages paid by the company have always been high, but despite this fact and the recent increase effective the latter part of September, the company has been unable to secure the type of men which has been set as absolutely essential to successful operation by the operating department. The schedule of wages now in effect provides as follows: First year motormen, \$2.25 a day; second year, \$2.35; third, fourth and fifth years, \$2.45; after five years, \$2.60; conductors, first year, \$2.15; second year, \$2.25; third, fourth and fifth years, \$2.35; after five years, \$2.45.

PHILADELPHIA RAPID TRANSIT MAKES SUBWAY ASSESSMENT

Another assessment of \$5 per share was declared upon the stock of the Philadelphia Rapid Transit Company by the directors of the company at a meeting held Monday, Nov. 5. The assessment is payable Dec. 10, and will add \$3,000,000 to the treasury of the corporation for the completion of the eastern section of the Market Street subway. This is the second stock assessment the Transit Company has ordered this year. The first was made on June 5, payable July 10. It was in paying this money that the \$5,000 shares of John M. Mack and his associates passed into control of the syndicate which recently purchased their holdings. President Parsons made the announcement of the order for the assessment, and in discussing its purpose said: "The money to be realized from this stock assessment is to be used in completing the Market Street subway. That work is progressing rapidly, and it was decided by the board that the necessary funds to continue the work of construction could be readily realized by stock assessment. It is payable on Dec. 10."

Officers of the Rapid Transit Company said the time of opening the elevated line and western section of the subway was not considered at the meeting of the directors. The construction work on the elevated line has been greatly hindered by the delay in delivery of materials for the passenger stations. It is hoped to have the line ready for traffic during the holiday season.

PLANS FOR MONO-RAIL ADVOCATED IN NEW YORK

A proposition has been outlined to the committee on plans of the Rapid Transit Commission for the building of a mono-rail line from the Atlantic Avenue ferry in Brooklyn to Coney Island. F. B. Behr, the inventor of the mono-rail, stated to the commission that the road could be built within twelve months of the signing of contracts, and that the question of financing the road would be undertaken by a corporation he could form as soon as the franchise was granted. As an evidence of good faith in this regard, he turned over to Alexander E. Orr, the president of the board, a letter from J. S. Bache, a banker of New York, offering to furnish at least part of the necessary capital. More than a score of Brooklyn improvement organizations sent representatives to the hearing to argue in favor of the building of the road. It was pointed out that the system would relieve the Brooklyn Bridge to a great extent, as it would accommodate between 40,000 and 50,000 people during each rush hour.

The detailed route suggested is from the ferry out Atlantic Avenue to Rogers Avenue, to Flatbush Avenue, to Nostrand Avenue, thence via East Nineteenth Street and Emmons Avenue to Coney Island. Another route via Hamilton, Third, Seventh, and Benson Avenues has also been mapped out, and it may be that both lines will be built providing the authorities give their permission. In explaining his plan to the board, Mr. Behr said that specially designed cars, capable of holding 170 seated and 80 standing passengers, would be used. He said his company

would guarantee to maintain an average speed of 65 miles an hour, including stops. He said that it is possible to run cars with perfect safety at a speed of between 110 and 120 miles an hour. He proposes to have but four stops between the ferry and the island, and all trains will be expresses, stopping at but one of the stations. In this way the high speed can be kept up on all trains.

PROGRESS ON CHICAGO CAR BILL

The Chicago Council committee on local transportation, Mayor Dunc and representatives of the traction companies, have practically agreed on six of the thirty-four sections of the traction ordinance submitted by the Chicago City Railway and the Chicago Union Traction Company. The clause providing for three supervising engineers was not regarded with favor by Mayor Dunne, who said he objected to taking away from the City Council the power to regulate the character of improvements to be made after the lines are rebuilt. The question of the power to be granted to the engineers will be taken up at a future meeting. On the Mayor's objection the clause permitting better construction than specified in the ordinance, on the approval of the supervising engineers, was stricken from the ordinance. The Mayor thought of the possibility of the roads being constructed in such an expensive manner as to handicap the city in purchasing them later.

FRANCHISE EXTENSION ON BASIS OF LOW FARE DEFEATED IN DETROIT

The referendum on the ordinance to extend the franchises of the Detroit United Railway Company at the election held last week, resulted in the defeat of the proposal of the company. Under the proposed franchise the rates of fare were to be ten tickets for 25 cents during 5 hours of the day and six tickets for 25 cents the other hours. The cheap tickets were to be good between 5 and 8 o'clock in the morning, and 4:30 and 6:30 o'clock in the evening. The franchise was to endure eighteen years. The company put its new rates into operation several weeks before election for a temporary trial. Mayor Codd, the Republican candidate, whose name was coupled with the franchise, was defeated by more than 3000 plurality, while the cheap-fare franchise has been defeated by an overwhelming vote of 28,823 to 13,316. There seems to have been a strong feeling against binding the city to any agreement with the railway company for so long a period as eighteen years.

STREET RAILWAY PATENTS

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

UNITED STATES PATENTS ISSUED OCT. 30, 1906

834,263. Load-Brake Apparatus; Francis L. Clark, Pittsburgh, and Walter V. Turner, Wilkingsburg, Pa. App. filed Feb. 27, 1905. Relates to what is known as "light" and "load-brake" apparatus adapted to be adjusted to give either heavy braking power on a loaded car or light braking power on an empty car. An additional reservoir is provided adapted to be cut in with the usual auxiliary reservoir for heavy braking, and an additional brake-cylinder of larger size, which is used in place of the smaller brake-cylinder when the combined reservoir capacity is cut in for heavy braking.

834,281. Tongue Switch; George M. Ervin, Johnstown, Pa. App. filed June 6, 1905. The switch tongue has a circularly-enlarged heel portion formed with flangeways for both tracks and retaining devices engaging the enlarged portion to hold it to its seat, said device being releasable from the surface of the switch.

834,280. Railway-Track Structure; George M. Ervin, Johnstown, Pa. App. filed June 6, 1905. A railway-track structure having a base portion provided with a pocket, and a removable surface portion seated therein, said portions having interfitting hook members, the bottom of the surface portion and the bottom wall of the pocket being curved.

834,302. Trolley wheel; Henry L. Humphrey, Monroe, Mich. App. filed Nov. 13, 1905. Consists of a ball-and-socket bearing or journal for the wheel upon which it revolves freely and is free to turn or tilt laterally a limited distance.

834.336. Automatic Electric Braking; Louis H. Thullen, Edgewood, Pa. App. filed Dec. 22, 1903. A motor has its armature geared with an axle of the car and means located in the roadbed for closing a circuit including the armature and field of the motor, which circuit is normally open.

834.379. Switch-Throwing Device; Thomas A. Gerlach, Harvey, Ill. App. filed July 11, 1906. A double-acting switch-operating mechanism comprising a lever and a spring moving with said lever and reversing the direction in which its force is exerted when the lever is moved, said spring being connected at one end with said lever and at its other end with a switch member.

834.403. Street Railway Switch Opening and Closing Device; Ephriam A. Peterson, Rockford, Ill. App. filed Jan. 6, 1906. A cable having both ends adjustably secured to the switch-point leads through holes in the web of the rails to the outside thereof where a lug is secured to the cable. Levers at either side of the car are adapted to selectively engage the lugs and thereby throw the switch in either direction.

834.404. Signaling System; Frank B. Rae, Ridgwood, N. J. App. filed Aug. 5, 1901. An arm projecting laterally from the trolley harp carries a suitable contactor which engages certain contacts along the trackway for signaling purposes.

834.432. Tongue Switch; Richard P. Williams, New York, N. Y. App. filed June 28, 1904. The switch tongue had at its heel a depending projection terminating at its lower end in a circular horizontal flange of larger diameter than the body portion of the projection.

834.439. Railway Switch Mechanism; Frank L. Young, Boston, Mass. App. filed Nov. 8, 1905. The switch mechanism is enclosed in a casing and heating pipes are disposed therein.

834.440. Means for Keeping Switch and Signal Apparatus Free From Snow and Ice; Frank L. Young, Boston, Mass. App. filed April 7, 1906. The switch mechanism is enclosed in a casing in which gas burners are disposed.

834.466. Switch Operating; Newton T. Gould, Sacramento, Cal. App. filed April 27, 1906. Details of construction of a depressible lever for throwing a switch point.

834.473. Noiseless Car Wheel; Israel Hogland, Indianapolis, Ind. App. filed March 16, 1905. Packing material is interposed between the tire and the wheel proper.

834.636. Electrical Contact for Trolley Systems of Electric Railways; Wesley T. Oviatt, Stratford, Conn. App. filed Aug. 29, 1905. Spring-pressed jaws engage the outer periphery of the trolley wheel at intervals for signaling purposes.

834.689. Rail-Bond; Charles R. Sturdevant, Worcester, Mass. App. filed July 7, 1905. A solid metal terminal plug is driven into a bottomed hole in the rail and the outer edges of the hole upset to hold the plug therein.

834.690. Rail-bond; Charles R. Sturdevant, Worcester, Mass. App. filed July 7, 1905. Modification of the above. Relates to a special tool for upsetting the outer edges of the bottomed hole.

834.704. Electric Fluid Pressure Switching and Signal Appliance; Walter J. Bell, Los Angeles, Cal. App. filed June 3, 1905. Consists in combination of a switching element, a piston for moving said element, a signal, fluid pressure means for operating the signal including two valves connected to each other, and means connected with the piston for alternately moving the valves.

834.717. Car Fender; Francis M. Frederick, Oak Station, Pa. App. filed Aug. 1, 1906. The fender has wheels which travel upon the rails and are held in contact therewith by gravity.

834.796. Brake for Railway Trucks and Other Vehicles; Joseph Gouldie, Brayton, England. App. filed March 14, 1906. Tappet rods pivoted to the brake-shoe engage a cam having a series of inclined surfaces separated by slight humps or projections whereby each successive notch that the cam is moved transmits greater thrust to the tappet rods.

PERSONAL MENTION

MR. ALBERT SPIES, who for a long time has been editor of "Cassier's Magazine," has resigned his position.

THE FRIENDS OF MR. JOHN HARRY STEDMAN, of Rochester, will regret to learn of the death of Mrs. Stedman recently.

COL. GEORGE E. DUNN has announced his intention to retire from the New York State Railroad Commission the first of the year.

MR. JOHN HACKSTAFF has been appointed general superintendent of the Atchison Railway, Light & Power Company, of Atchison, Kan.

MR. GEORGE A. BERRY, until recently engineer of company forces of the New York Central & Hudson River Railroad Company, has severed his connection with that company, and has been elected vice-president and general manager of the Hicks Locomotive & Car Works, of Chicago, Ill. Mr. Berry in his new capacity will have sole charge of the plants and business of the company, and will make his headquarters in Chicago.

MR. G. TRACY ROGERS, president of the Binghamton Railway Company, Buffalo Southern Electric Railway and a director in the company which is constructing the McAdoo Hudson River Tunnel, has been elected a director of the Longacre Electric Light & Power Company, which was recently absorbed by the Manhattan Transit Company, the object of which absorption was to utilize the electric franchise of Longacre Company in connection with the various privileges covered by the charter of Manhattan Transit.

MR. W. M. EATON, vice-president of the Rochester Railway & Light Company and of the Rochester Railway Company, has resigned to re-enter the services of Hodenpyle, Wallbridge & Company, of New York. Mr. Eaton was in charge of the Rochester Railway & Light interests when they were controlled by the Hodenpyle, Walbridge and Clark syndicate, and after their sale to the Vanderbilt-Andrews syndicate, consented to act as general manager and vice-president of the companies. In August of last year, he turned over the duties of the managership to Mr. R. M. Searl and has since been acting as vice-president only.

WILLIAM H. CAMPBELL died very suddenly at his country home at Highland Mills, Orange County, a few days ago. Mr. Campbell went to Larchmont, N. Y., from Peekskill in 1884, when the place was a mere hamlet, and began the development of property. He was one of the organizers of the Larchmont Street Railway, and constructed its lines between Larchmont and Stamford, Conn. When the Larchmont company sold out a few years ago to the New York, New Haven & Hartford Railroad Company, he disposed of all his interests in the company.

MR. F. H. HEBBLETHWAITE, C. E., has become connected with J. G. White & Company, Ltd., of London, as superintendent of reconstruction of the Para Railway & Lighting Company, Para, Brazil, and will sail immediately via London, to take charge of the work. Mr. Hebblethwaite spent eight years in Brazil as engineer of the Southern Brazil Railway, and later as contractor for various public works in the State of Amazonas, and manager of the Manaus Railway, which he built for a New York corporation. Since then he has been on the engineering staff of the Brooklyn Rapid Transit Company, and has recently been engaged on power house engineering in New Jersey for the electrification of the West Jersey and Sea Shore branch of the Pennsylvania Railroad, described in this issue.

MR. C. B. FAIRCHILD, JR., formerly associate editor of the STREET RAILWAY JOURNAL, has consummated plans for starting a new publication to be devoted to the electric traction field and to be known as "Electric Traction Weekly." It will be published by the Kenfield-Fairchild Publishing Company, of Cleveland, Ohio, and will be devoted to the practical side of urban and interurban construction, maintenance and operation. The organization of the company is as follows: President and manager, H. J. Kenfield, formerly Eastern manager of the "Street Railway Review"; vice-president and editor, C. B. Fairchild, Jr.; secretary and associate editor, Geo. S. Davis, formerly Cleveland representative of the STREET RAILWAY JOURNAL; treasurer, F. L. Heath, of Hastings, Mich. The paper will make its appearance about Dec. 1.

MR. EDWIN B. KATTE has been appointed chief engineer of electric traction of the New York Central & Hudson River Railroad. Mr. George A. Harwood has been appointed chief engineer of electric zone improvements, exclusive of electric traction and signals. Mr. John D. Keiley has been made electrical engineer. Mr. Carl Schwartz has been appointed engineer of power stations. Mr. J. L. Holst has been appointed engineer of structures and will have charge of the design and erection of all steel in the electric zone, excepting in the Grand Central terminal. He will also be in charge of the design of all buildings not in charge of associated architects, and the design of all masonry and miscellaneous structures north of the south bank of the Harlem River. Mr. W. F. Jordan has been appointed terminal engineer and will have charge of the design and construction of the Grand Central terminal and other work in connection with the electric zone improvements south of the south bank of the Harlem River, except the structural steel design of the Grand Central Station and other work in charge of the associated architects.