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

Of this issue of the Street Railway Journal 8000 *copies are printed. Total circulation for* 1905 *to date,* 335,950 *copies, an average of* 8194 *copies per week.*

Lunch Rooms on Interurban Lines

While some of the more important interurban lines are putting on limited buffet and dining cars on which the traveling public can obtain something to eat while on a journey, the great majority of such roads are not situated so that they can adopt these refinements, and it is in order for every road operating over long routes and making connections at small towns with other companies to look well after the restaurant facilities, especially at terminal points. The lunch problem, wherever continuous trips of several hours are to be made, is in about as unsatisfactory a stage of development on interurban roads as it was on steam railroads twenty-five years ago. There are not a few routes in the country requiring a ride of two and a half to three hours continuously where a passenger must go hungry if he should be so unfortunate as to plan his trip so as to cover a meal time. To be sure, the passengers on many local trains on steam railroads are not better provided for, but two wrongs do not make one right. The passenger department of a company should make it a part of its business to see that proper provisions are made for passengers who are making continuous trips. It is bad enough for passengers to have to change cars when making through trips when changing from the lines of one company to another without, in addition, having to suffer the discomfort of being obliged to wait for a connection at some point about mid-day with no chance of getting anything to eat. It is not to be expected that regular, first-class restaurants can be maintained at all points where a passenger might possibly be stranded, but present conditions can be vastly improved in many cases by a little attention to the matter on the part of the railway company.

One feature of English steam railroad practice, which for some reason has never been started this side of the Atlantic, as far as we know, is the basket lunch which travelers can purchase at various points along the lines at very reasonable figures. This might be the solution of the problem on a number of long interurban runs where a buffet car could hardly be maintained at a profit.

Brake-Shoe Pressures

The brake-shoe that is most desirable for electric railway service is commonly considered to be the one with the longest life, irrespective of its other qualifications, and in this probably the common opinion is right. There is considerable difference in the amount of brake-shoe pressure required to produce a given retarding effect with different brake-shoes, the general rule being that the harder shoes have a lower coefficient of friction, and thus require more pressure than the soft shoes. The soft shoe, on the other hand, wears faster. On electric roads where the maximum brake-shoe pressure is not fixed by the train-line pressure, as it is with the automatic air brake used on steam roads, the question of whether it takes a little more or a little less brake-shoe pressure to produce a given result is not of great importance. On electric cars equipped with straight air brakes there is usually more than enough pressure in the storage reservoir to put the brakes on hard enough to skid all the wheels. The only influence that the coefficient friction of the brake-shoes has on the cost of operation (leaving wear out of account) in such a case is the cost of pumping the air required to supply a little extra brake-shoe pressure, but this cost is so small as to be negligible. It is therefore, with air brakes, plainly a case of selecting the shoe which will wear the longest. Where cars are equipped with hand brakes, of course every pound of additional pressure required to brake a car either adds to the pull which the motorman must exert on the brake handle or adds to the time required to

apply the brakes. In such a case, however, it is a question whether the difference between the pressure required with different brake-shoes will be enough to make much difference in operation. On elevated roads where cars are operated in trains and equipped with automatic air brakes, it is, of course, desirable to have a uniform kind of brake-shoe throughout the whole train, unless the brake leverages on each individual car are adjusted to compensate for any important differences there may be in the retarding power of the different brake-shoes, and the latter is impracticable.

One other question which has been considered sometimes is the wear on steel-tired wheel with hard brake-shoes. We have in mind one interurban road which was having excessive brake-shoe wear and was using a soft brake-shoe because it was feared that a hard shoe would wear the steel tire too rapidly. An experiment was tried of putting a pair of wheels in a lathe, setting the brake-shoes against them as on a car, and running the wheels until an appreciable weight of metal had been worn off the shoe and wheel. The estimated value of the metal on the wheel, including the labor of turning down and replacing, was balanced against the cost of metal in the brake-shoe, including labor of renewals. It was found in this particular case that the brake-shoes could be much harder and throw considerably more of wear on the steel tires without bringing the balance on the wrong side of the account. It is quite likely that the same thing would hold true on other roads. If it is true with steel-tired wheels it certainly would be much more true with chilled cast-iron wheels. The hardest shoe is not necessarily the most desirable, but it is tolerably certain that hardness is desirable if it is not carried to the point of causing early breakages and shortening the life of the shoe.

The Pit and Motor Question Again

As we have noted from time to time in the past three or four years, certain companies operating double-truck cars have been moving in the direction of abandoning pit work in their repair shops as far as possible and working on motors from above after having removed the trucks from under the car body. This movement has been based on the sound theory that work done by a man in the pit is not likely to be as well or as rapidly done as if it were performed in the open on a shop floor. A certain amount of pit work is unavoidable, however, and the question of how much work shall be done in the pit and what kind of motor shall be adopted gives a chance for much profitable discussion. Street railway motors can be classified under five heads: (1) Those opening from below and arranged to lift out of the truck; (2) those opening from above and arranged to lift out of the truck; (3) those opening from above and arranged to lower out of the truck; (4) the box type of motor, which cannot be opened at all while it is in the truck, and is arranged to lift out; (5) motors which can be opened from either above or below, and arranged to lower into the pit. The latter type is now rarely found, although it was once common. The discussion, therefore, is confined to the first four types.

The first type, which is arranged to lift out of the trucks, but on which the lower half of the casing opens down into the pit, is the most common type among street railway motors at present. With this type a motor can be opened when standing over any pit, and thus ordinary inspection of the inside of the motor case can be made, and, if necessary, armatures and fields can be removed without taking the motor out of the truck. If the motor is to be taken out of the truck, the truck must be taken out from under the car so that the motor can be hoisted out of the truck, since it cannot be gotten out from below.

The second type of motor, which opens from above and lifts out of the truck, has been developed within the last three years to meet the demands of those who wish to do all work on motors from above and do away with pit work. With such motors it is manifestly necessary to run the trucks out from under the car before the motor casing can be opened up for inspection. Those who favor this class of motor believe that enough better work will be done inspecting a motor on an open floor rather than in a pit, so that it is worth while to hoist a car body and run the trucks out from under the car whenever a motor casing must be opened. It is manifestly impossible to remove armatures or fields from such motors in the ordinary car house unless provisions are made for hoisting car bodies and then hoisting armatures out of the motor casing. Such hoisting apparatus, however, need not be very expensive, and, in fact, we doubt whether it would differ materially in cost from the pit jacks and armature hoists needed to remove armatures from motors via the pit. It would appear to be mainly a question of whether the advantages of good and rapid work which could be obtained by taking a motor out from under a truck were sufficient to counterbalance the time required to get the truck out from under the car. With the motor opening into the pit, it is simply a question of swinging down the lower half of the casing to open it up, either for inspection or renewal of armatures and fields. With motors which open from above, there must be added to the time required to open up the motor, the time required to hoist the car body, disconnect the motor leads and brake rigging and run the truck out from under the car. The question then is, can the men work faster and do enough better work when once the truck is out from under the car to make up for this loss of time? Right here is where master mechanics differ. We should very much like to see comparative figures on the time required for these different operations from car houses well equipped for both methods of handling.

The third type of motor, which lowers out of the truck into the pit, is also worth considering in this connection. It is especially well adapted for single-truck cars, as the motors can be removed without taking the trucks from under the car body, which is a more troublesome operation with single-truck cars than with double-truck. With such motors, the logical thing is to do all work from the pit, never taking the trucks out from under the car bodies except on rare occasions. By removing motors through the pit and by renewing wheels with the aid of a sectioned pit track, the necessity for hoisting car bodies is almost done away with. To handle motors and wheels rapidly by this method, good pit jacks are essential and the facilities for handling material in the pits must be good. With the third type of motor the whole motor must be lowered before the armature can be taken out, as the motor casing opens from above—that is, unless the old-fashioned method of hoisting out armatures through the car body is employed; but this latter is hardly considered good practice at the present day, not only on account of the liability of damage to the inside of the car, but because of its slowness. When a motor has been lowered into the pit it must be run out to some part of the pit over which is located a hoist for getting out the armature. In fact, whatever plan is used, there must be something to hoist the armature, in one case, out of the pit, and in the other case, out of the motor. If the trucks must be taken out from under the car bodies whenever work is to be done, a car-hoisting apparatus must be provided. If they are not to be taken out from under

the car bodies, a pit-hoisting apparatus for motors must be provided.

The fourth, or box type of motor, is used mainly in heavy work, and was designed as a result of an attempt to get as much motor capacity as possible into a given truck space. With this motor it is necessary to have hoisting apparatus which can promptly lift a motor out of a truck, after which it can either be set on end and the armature hoisted out by means of a hook on the pinion, or the armature can be placed on centers and the motor casing slid off from it with a special apparatus. With this type of motor there is no question as to what must be done, as pit work on the motor is impossible except as regards daily inspections and measurements of clearance. With city companies the choice usually must be made between the first three types of motor, and must depend somewhat upon the facilities which the company has for handling and hoisting motors and car bodies, unless it is decided that a change is worth while.

If the second type of motor, which opens from above, is adopted either all repairs must be done at a general repair shop where there are facilities for hoisting car bodies, motors and armatures, or facilities for hoisting car bodies and armatures must be provided at each car house in sufficient numbers so that armatures and fields can be renewed at the car houses. If the first type of motor, which opens from below, is adopted, facilities for hoisting car bodies need be provided only at the general overhauling shop, as small repairs and renewals of armatures can be made in any car house pit with the aid of a pit hoist and a hoist for getting the armatures out of the pit. It is maintained by those who favor the first type of motor that there are times when, on account of unusual weather conditions, a large number of armatures and fields must be renewed about the same time, and that this can better be done at any car house with the aid of a pit hoist than by taking the truck from under the car, because the latter involves loss of time in hoisting car bodies or getting the car bodies into a place where they can be hoisted. On a large system it is too much of an expense to run cars through a general repair shop for all small repairs, and it may be that the cost of equipping all car houses with hoisting apparatus for rapidly taking the trucks out from under cars would exceed the cost of equipping with pit-hoisting apparatus to do the same work. First cost is secondary, however. This is a matter about which it will not do to theorize until figures are at hand on the time required to do work by these two methods and on the cost of equipment. We should much like to see this matter taken up at some of the future master mechanics' conventions.

Concerning Feeders

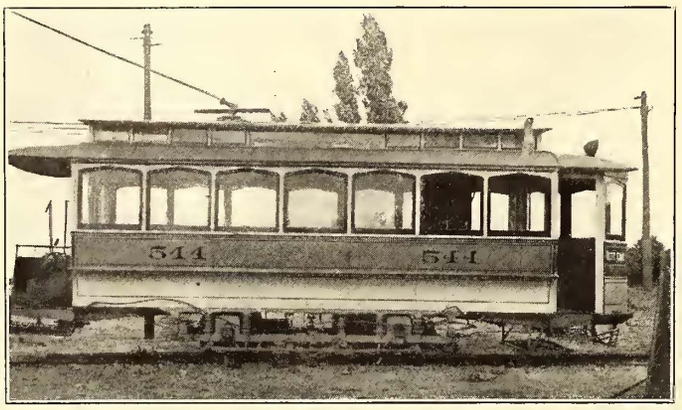
We are not disposed to cast any aspersions on that hard-worked class, the electricians of tramway systems, but, as a matter of interest, we would really like to know: *A.* How many superintendents of electric roads can tell offhand what percentage of their total energy is lost in transit? *B.* How many can get a prompt and accurate reply by asking the head of the electrical department? *C.* How many of the latter have really full data on the subject, from which they could compile a reply within a week? Now, everybody knows that the electrical department of a busy road is up against troubles of its own quite apart from such searching, not to say impertinent inquiries, but, nevertheless, it is somebody's business to know how much of the power generated is being lost, else it will be impossible to say when additional feeders should be installed, or the general system overhauled. The good old way was to wait until the motormen began to kick about not getting "juice" enough, and then put up something or other. There have been great improvements of late years, and some roads show very skillful handling of the feeder problem, but as a rule even now the losses are guessed at rather than known, and are very much larger than they are supposed to be. If the actual facts as to the energy lost in direct-current lighting from central stations were known, it would stagger the average engineer, and electric railway stations are often in little better case.

It is no joke to transmit energy 3 or 4 or 5 miles at 500 volts or 600 volts, and when it comes to long runs across country the case is much worse. In systems using polyphase transmission to rotaries, there is certainly no tendency toward crowding sub-stations too close together, and the result is that one finds heavy losses in the distributing system superimposed and large average loss in transmission lines and rotaries. Not a few roads have rushed into the transmission work very hastily, and are now repenting at their leisure, and wondering why the total amount of power required to run the road increases so much faster than the receipts, while they are using the "most modern and approved" method. When one puts on fine, long interurban cars with four-motor equipments in place of the worn-out veterans, something must be done to the feeders, or there will be lamentations at the power house. Extra load has a particularly gentle and insinuating way of increasing by imperceptible degrees until a system once entirely adequate has become abominably overloaded. Of course, there are cases in which overload could not easily be foreseen. Still, there is many a road that is chronically on the limit of both its feeder and generator capacity, and knows it year by year. This is true even of some of the largest and best managed systems in the country, with shrewd foresight in nearly every other particular.

Now, in dollars and cents, it is just as bad to lose money from an inefficient feeding system as it is to lose it at the hands of dishonest employees. Yet the same road that has an elaborate bookkeeping and inspecting system to keep its conductors from knocking down fares and selling transfers, may be losing thousands of dollars a year in wasted energy along its circuit and never know it. If one put "spotters" on the energy losses instead of on the employees, he would often make money. It is, of course, pretty serious business to find out the losses on an extensive system, when no information is initially available; but if the work is undertaken in a perfectly systematic manner and kept up, a very complete control of the whole matter can be maintained at relatively small cost. It is merely a matter of the intelligent use of recording instruments from time to time at various points upon the system. Casual voltage measurements are of comparatively little use save when the system is really in desperate case, but continuous readings give very complete information and enable losses of maximum and average load to be very quickly determined. The amount of labor involved is comparatively small, and even if it were large would often be worth the while. It is easy enough to lose 50 kw or 100 kw for a good many hours per day without the fact being obtrusive, and that is annually equivalent to losing the fares of many thousand passengers in its effects on the net earnings. A railway feeding system, on account of variable load, can rarely be kept up to the fine point of economy that can be reached on uniform load, but it can, nevertheless, be prevented from becoming the seat of severe and unnecessary loss.

NEW OPERATING FEATURES IN CLEVELAND

E. J. Cook, chief engineer of the Cleveland Electric Railway Company, has been for some time past paying particular attention to the matter of bonding and return circuits. Formerly, as on the majority of large systems, this work came under the supervision of the engineer of maintenance of way, and while



TEST CAR USED ON THE CLEVELAND ELECTRIC RAILWAY

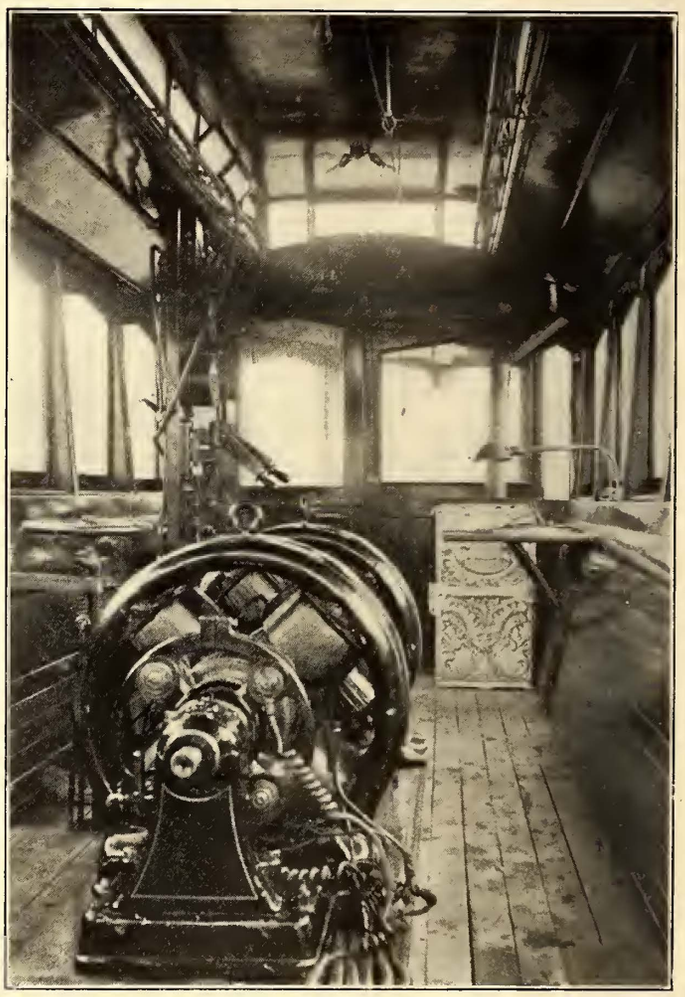
the electrical engineer was responsible for the maintenance of proper power conditions, he had no supervision over this important portion of the distribution system. It is a work which is apt to be neglected by inferior or ignorant workmen, because deficiencies are covered up and are not readily discovered. It is an easy matter to leave out a bond here and there, to twist a bond around a bolt instead of making the proper

STONE CRUSHER

connection, and it is common practice in many cities to ground to a handy water pipe instead of putting in the necessary amount of labor required to do a first-class job. So Mr. Cook organized a department known as the return circuit department. It comes directly under the supervision of the electrical engineer and has no connection with the track department. It has charge of all electrical work below the overhead, including the maintenance of electric switches, signal outfits and telephone returns, in addition to the bonding and return circuits. All work affecting these branches must either be done or passed upon by members of this force.

An important adjunct to this department was the equipping of a test car. He used an old single-truck car equipped with one motor for propulsion. It was provided with a 7½-kw motor-generator set, formerly used in a battery sub-station. The generator has an output of 12 volts and 600 amps., and by forcing current between any two given points, the difference of potential is accurately determined. There is a small switchboard for operating the two machines, and a desk provided with switches, millivoltmeters and other instruments. On either side of the car between the wheels is a pair of copper brushes on arms for contact to the rails. Inside the car is a wheel-raising device for operating either or both of the sets of brushes. The instruments on the table may be connected to either or both of these brushes, so that it is possible to read both sides at once where broken joints are used. One axle on the car is thoroughly insulated to reduce as much as possible the resistance on the car. There are terminal plugs at the sides of the car, so that leads may be brought out where tests other than bond tests are to be made.

Besides serving as a test car, the outfit is in use much of the time in another direction, so that on the whole it is a very

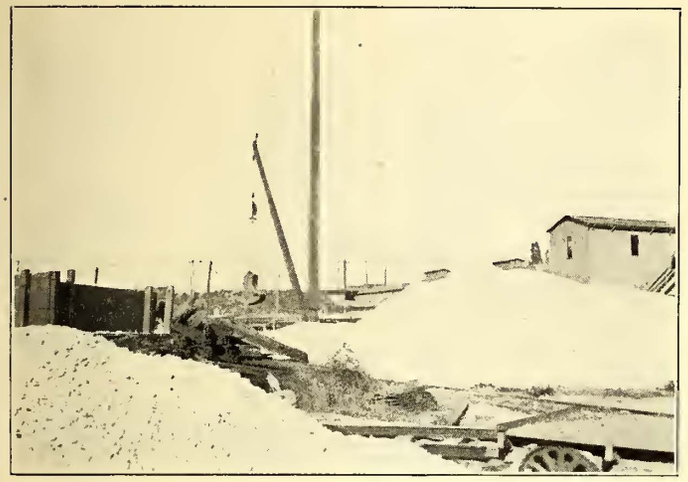


INTERIOR OF CLEVELAND TEST CAR

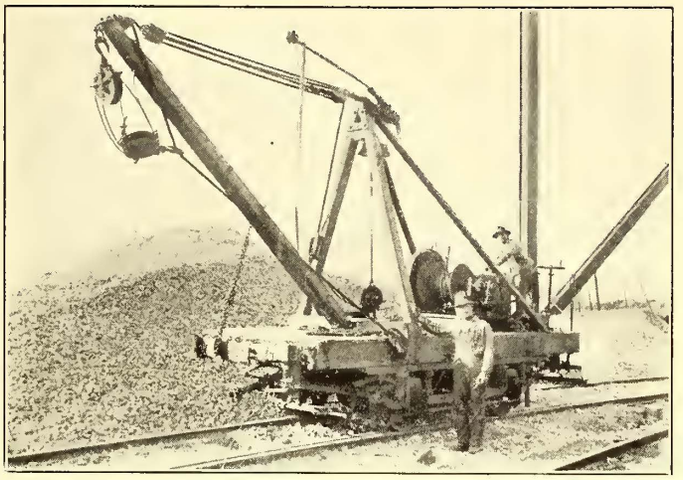
valuable outfit. The company has five storage-battery sub-stations for taking care of peak loads in various parts of the city. Whenever any of the cells in these batteries becomes "sick" or falls below the average, the test car is sent to doctor it up. Each station has a side-track, and the car is run along side and a lead is carried to the terminal of the disabled cell. Each battery station attendant is versed in the operation of the car, so that a constant attendant is not necessary for this work.

Every foot of track in Cleveland has been gone over during the past few months and the return circuit system has been brought up to a very high state of efficiency, and it will be maintained in this manner. This will be simplified through the fact that an immense amount of electric welding of joints is being done; in all there are about 25,000 of such joints (60-ft. rail). About 12,000 joints were put in last fall by the Lorain Steel Company, and incidentally it is interesting to note that only forty or fifty of these have thus far broken open. About 3000 thermit welds are also in use, and these are giving good

satisfaction. As an experiment, the company is also putting on several hundred U-shaped copper bonds, soldered to the side of the rail, the work being done by the Electric Railway Improvement Company, of Cleveland. The standard bond, however, is a 12-in. No. 0000 copper bond with compressed head, this being used on all 9-in. girder and 80-lb. T-rails. All old feeders

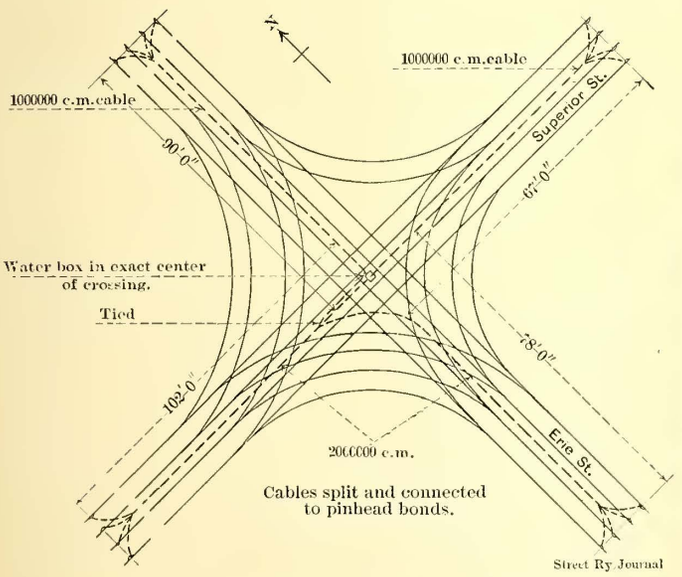


HANDLING CRUSHED STONE WITH A CRANE



DERRICK CAR

under 1,000,000 circ. mils have been taken down and used in bonding. Particular care has been taken at all curves, railroad crossings and bridges and near power stations to lay more than sufficient carrying capacity to take care of future requirements, and special attention has been paid to cross-bonding. A diagram is made of every piece of special bonding installed, and prints are bound in a loose leaf ledger. Reports of all changes are made daily to the head of the department and corrections

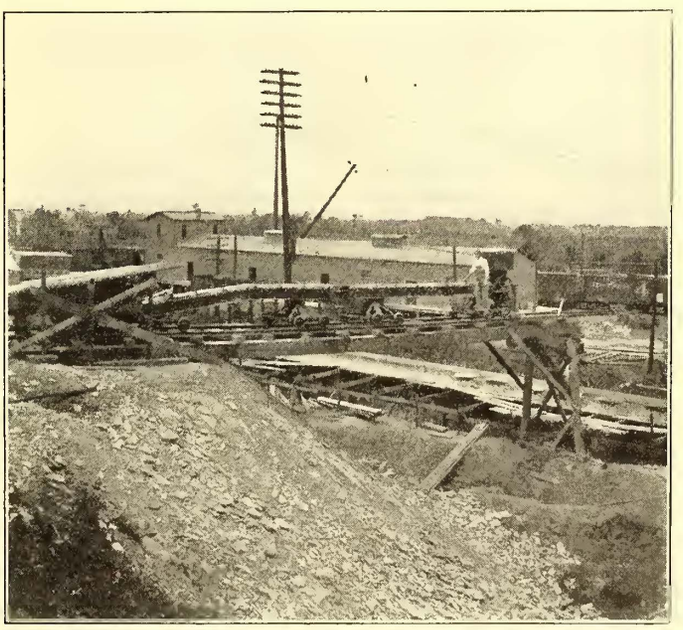


METHOD OF BONDING CROSSING AT SUPERIOR AND ERIE STREETS, CLEVELAND

are made so that the record shows the exact condition of every detail of the ground return. The size of feeder is indicated in each report, while the variety of connection is shown by a common code; a square block representing a welded joint, a round block one variety of mechanical connection, a half circle another, etc.

The effect of this work is not only noticeable through better power conditions and reduced station output, but it has greatly reduced the number of complaints and damage claims for electrolysis. Mr. Cook is now satisfied that a large proportion of so-called electrolysis trouble is due to careless work and ignorance on the part of employees of light and gas companies, waterworks employees, telephone employees and city authorities, and he has discovered a large number of cases proving this. On the city viaducts, water and gas pipes have been strung on the structural work of the bridge instead of on the stone piers designed for them. Circuits from motors on the bridges were found grounded to pipes. Lighting circuits to parks were found similarly grounded. A ground was found leading from a telephone conduit to a track rail, and it was proven that it was the work of a telephone employee. Yet in practically all cases where trouble has resulted from such carelessness the blame is laid upon the railway company.

Mr. Cook believes that much current leaves the rails on ac-

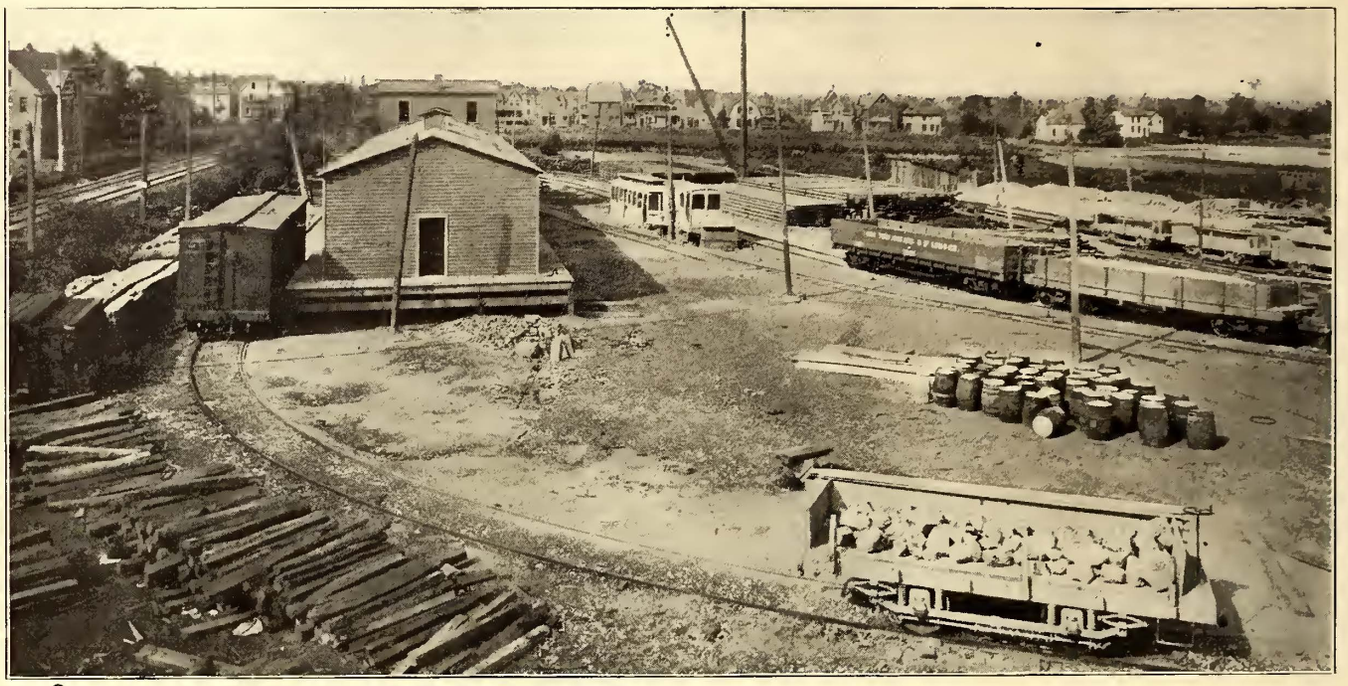


CONCRETE CONVEYOR

count of the great amount of exposed surface on the rail. Some months ago, when some new rail was being laid in the market house district, which is quite damp, he tried the experiment of painting the webs and bases of the rails. One long section was covered with two heavy coats of asphalt paint, and on another section heavy black plastic insulating paint was used. Of course, this paint is bound to rust off in time, but at present there appears to be about 50 per cent less loss in these rails than in unpainted rails.

The company is laying some new rail on the Doan Street line, using a new metal tie recently brought out by the Carnegie Steel Company. The tie is substantially a 6-in. I-beam

with 5-in. top and 7-in. base. The rail is held in place by steel clips on either side, which are held by ¾-in. bolts. The punching is accurate, so there is no possibility of variation in gage. Broken stone ballast covers the lower flange, which it is claimed will hold the track in perfect alignment. The rail is insulated from the tie by a fibre bushing under the clips. The



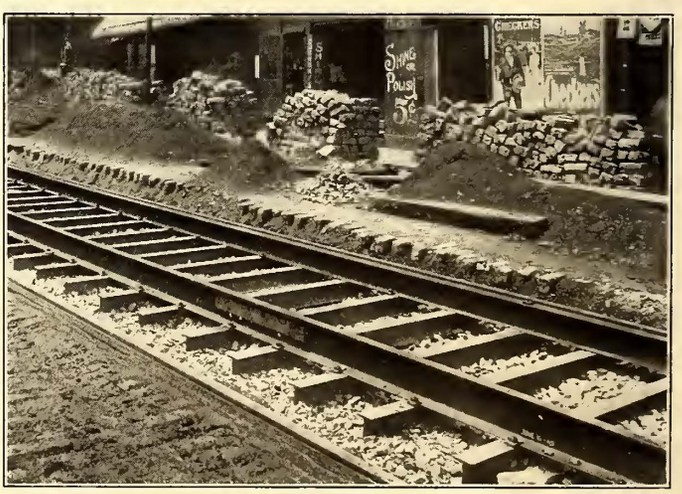
STOCK YARDS OF THE CLEVELAND ELECTRIC RAILWAY

tie weighs 167 lbs., and costs $2.50 each. Including labor for installing, it costs $6,120 per mile, and it is claimed the life is thirty years, at the end of which time they should be worth $900 per mile for scrap. The manufacturer claims that wood

HOLDING THE RETAINING WALL

tie renewals for a period of thirty years would cost at least $13,000 per mile. The illustration of a section of this track herewith also shows clearly the Lorain Steel Company's method of welding joints by the bars.

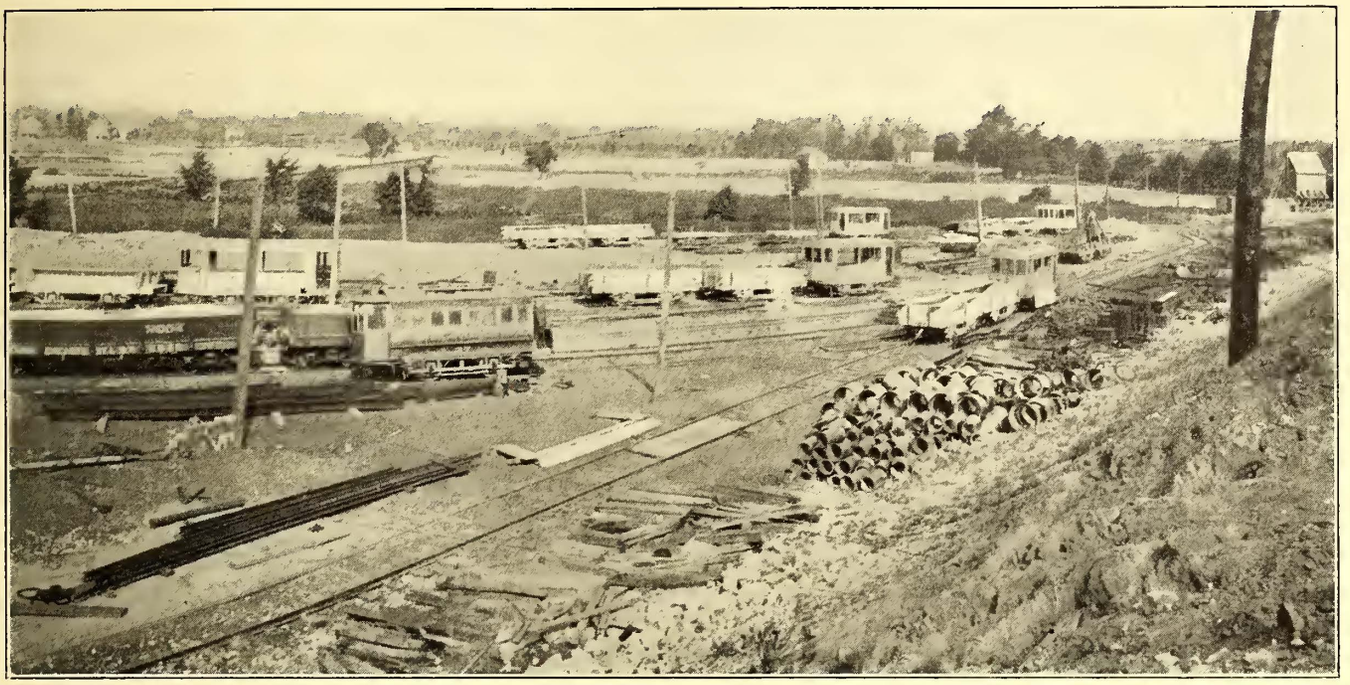
The Cleveland Electric Railway has a very complete yard for handling and storing material. Formerly this work was scattered all over town. Some time ago the company bought a number of acres of property adjoining its Windermere car house and battery station on its Euclid Avenue line at the point where the Collinwood line branches off on to private right of way. The Nickel Plate Railway (steam) extends along the south side of the yard and the Collinwood line faces it on the east, the grades of the two lines being separated by an overhead. This gives the yard track connection with the steam road in one corner and with its own line in the opposite corner. The accompanying illustrations show the layout in a very complete manner. There is ample space for storing large quantities of material of all kinds. There is a large revolving crane covering a considerable portion of the yard, and this is provided with hooks for handling rails and other heavy material, and it also may be fitted with a clamshell bucket for handling broken stone and other similar material. This is operated by motor and windlass in the small house shown. At



NEW TRACK CONSTRUCTION WITH STEEL TIES

one end of the yard is a large motor-operated stone crusher, illustrated. All track is now being laid with crushed stone, and the company buys and breaks up worn out paving stone for this purpose. There is a large warehouse in the yard, with platform surrounding it, and equipped with a crane for unloading heavy material. A track scale adjoins the building. The company makes a practice of keeping large stocks of material on hand all the time, the average receipts of late being 400 cars

a month. Cars are handled about the yard by a flat-car locomotive fitted with four 50-hp motors. Much transferring of material about the yard is being done by the motor-operated derrick car, illustrated. This is also used on construction work about the city, and it has been used to advantage on wrecks. A home-made concrete mixer is illustrated in another view.



STOCK YARDS OF THE CLEVELAND ELECTRIC RAILWAY

Recently the company built a concrete retaining wall along the railroad tracks adjoining its Windermere car house, and as the surrounding property where material could be unloaded was considerably higher than the retaining wall, a motor-operated belt conveyor was rigged up. The material was dumped into a hopper and automatically prepared and conveyed to platforms below. The outfit will come in handy in other similar work.

A new sand car has been rigged up for use this winter. It has an air tank and motor-driven compressor outfit at one end of the car, while the balance of the space is given up to sand, loaded about as heavy as the car will stand. The sand feeds down an incline at each end into the receivers of Nichols-Lintern air sanders, sand being fed to the rail through pipes in front of each pair of wheels. One man can operate the car and the sanding device.

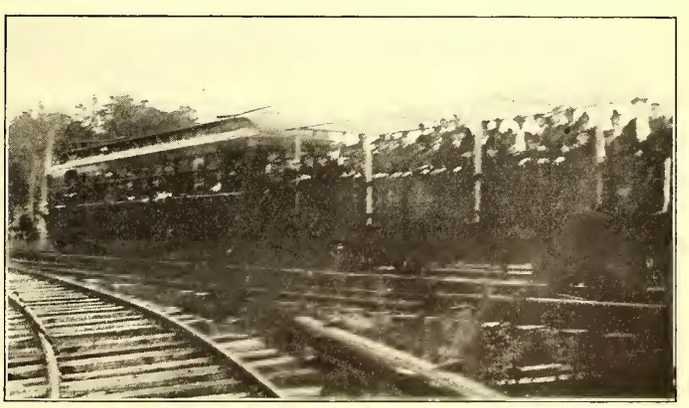
Chief Engineer Cook is much pleased with the results obtained from oil lubrication of journals, which was started some months ago, the lubrication bills having been reduced to one-third what they were with grease. He is now using the Westinghouse No. 101-B (40-hp) motor as standard, and is fitting other motors with the oil cup used on this type. Their latest convertible cars weigh 38,000 lbs., and it has been found desirable to fit them with four of these motors instead of two, as planned.

S. S. Neff, formerly superintendent of the street railway system in the City of Mexico, is associated with a number of Americans and Mexicans in the project of building a system of elevated and subway electric lines for the City of Mexico. Application for a concession for the proposed system has been made to the Mexican Government and is now under consideration by a commission of government engineers, who are investigating the project with a view of deciding as to its feasibility. Mr. Neff, who is in New York, says he does not care to make public his plans.

NOVEL METHOD EMPLOYED IN TRANSPORTING 3000 PEOPLE

On Aug. 10 President Roosevelt visited Wilkesbarre, Pa., and all of the railroad and traction companies, anticipating heavy traffic, prepared for the occasion. The Wilkesbarre & Hazleton Railway, the short line between Hazleton and Wilkesbarre, which naturally is not equipped to transport a very large number of people in a short time, took up the question with the Lehigh Valley Railroad and asked the privilege of hiring three of its coaches to be used as trailers. This was practicable, because the Wilkesbarre & Hazleton road is built with heavy track and for M. C. B. standard wheels. The coaches were promised and the road arranged its schedule to use them.

On the afternoon of Aug. 8, at 5 p. m., word reached the



MOTOR CAR HAULING IMPROVISED TRAIL CARS AT WILKESBARRE

company that the coaches could not be furnished, as the steam railroad company anticipated heavy traffic itself on the main line and would consequently need every available coach. The company then tried to secure the loan of some low-sided gondolas or flat cars, but these were also refused. Fortunately, just at this time, six coal cars loaded with rice coal reached the company's power house at St. Johns and were placed at the Wilkesbarre & Hazleton junction. Mr. Houck, the general superintendent, immediately ordered these cars dumped and that the empties should be placed on the company's shop siding in Hazle Park. The following morning, at 7 a. m., a gang of workmen, with lumber and unbleached muslin, fitted up the

coal cars. The ends were taken out, wooden side and center seats were added, and a canopy or canvas or muslin was spread over the top. Brakes were placed at either end on temporary framework. By 10 p. m. on the night of Aug. 9 brakes had been adjusted, the journals oiled and the inspection completed, and the company was ready for business.

In the meantime the Lehigh Valley Railroad Company had ordered eighteen coaches, two engines and crews to Hazleton, expecting that they would be wanted to handle the business on its road between Hazleton and Wilkesbarre. At 1 a. m. on the morning of Aug. 10, these cars were placed on the siding.

At 7:05 a. m. the following day, the electric road connected up the remodeled coal cars to its standard motor cars and ran them down town, and from that time until late at night kept up a half-hour service, running coach and gondola every thirty minutes. The Lehigh Valley coaches and engines did not leave the siding, nor did they carry a single passenger between Hazleton and Wilkesbarre on this occasion. The electric road, on the other hand, carried 3000 people, who traveled between these points in the standard coaches or the converted coal cars.

NEW INTERURBAN FREIGHT HOUSES AT INDIANAPOLIS TERMINAL

After the handsome, large interurban terminal depot and office building at Indianapolis for passenger service was completed last year, plans were drawn up for a union freight terminal adjoining the entrance yards of the present passenger train shed. The four engravings from photographs herewith give a good idea of the freight houses and their location relative to the station. Fig. 5 is a view taken from Ohio Street, showing the passenger train shed in the middle, the traction and terminal building at the left, and one end of one of the three new freight houses at the right. Fig. 2 is a view taken further east on Ohio Street at the corner of Capitol Avenue, showing portions of the three freight houses, with the passenger train shed and terminal building in the background. Fig. 3 is a view taken from Ohio Street looking between two of the freight houses, showing a car and teams receiving and discharging freight. These three freight houses, located side by side, are each 195 ft. long by 24 ft. wide, except at the north

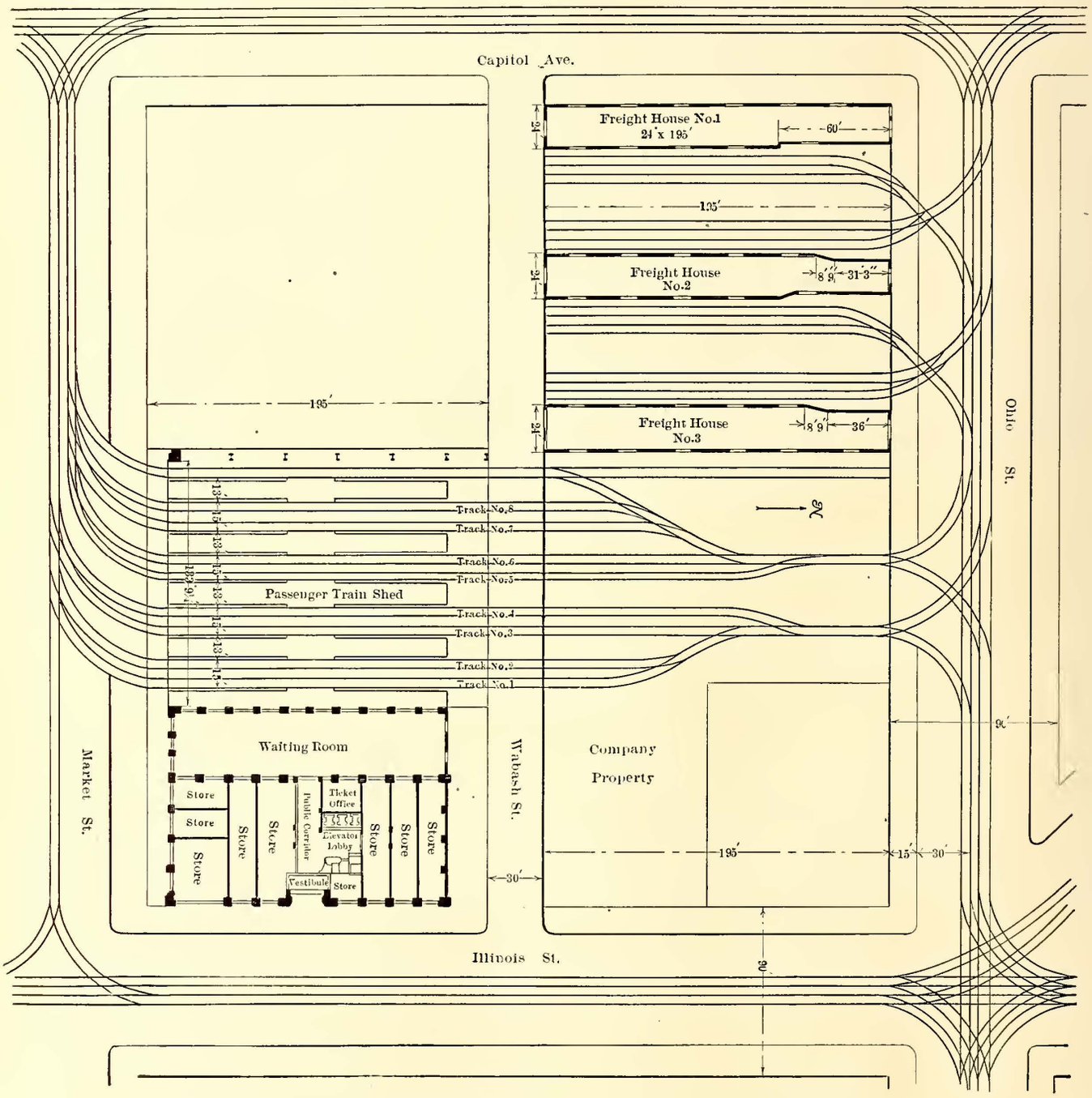


FIG. 1.—GENERAL PLAN OF TRAIN SHED AND OTHER BUILDINGS, INDIANAPOLIS

ends, where offsets in the wall of a few feet were made necessary to give clearance for cars on the curves with the track layout adopted.

The north end of shed No. 1 and the south end of shed No. 3 are both two stories high, and the upper story of each building is 60 ft. long. These upper floors will be utilized as offices for the express departments of the interurban companies. The second story of shed No. 3, which is located next to the passenger train shed, will also be used as headquarters for passenger car inspectors. All of the freight buildings are covered with slate roofs and have brick walls carried on concrete foundations. Pressed brick is used for the exposed walls, as the proximity of the State Capitol made an attractive appearance desirable.

Each building has five side doors and end doors, 8 ft. in width and 10 ft. in height, all of the Kinnear steel rolling type. Over each door is placed a transom with wire glass set in iron frames. The floors are laid with 3-in. oak planks carried on 3-in. x 12-in. joints 11 ft. long, spaced 14 ins. between centers. In addition to the office room mentioned, there is at the south end of shed No. 3 a basement room 100 ft. long for storing car supplies. The three freight buildings are served by nine tracks, which consist of 70-lb. T-rails of A. S. C. E. section. Lorain special work is used.

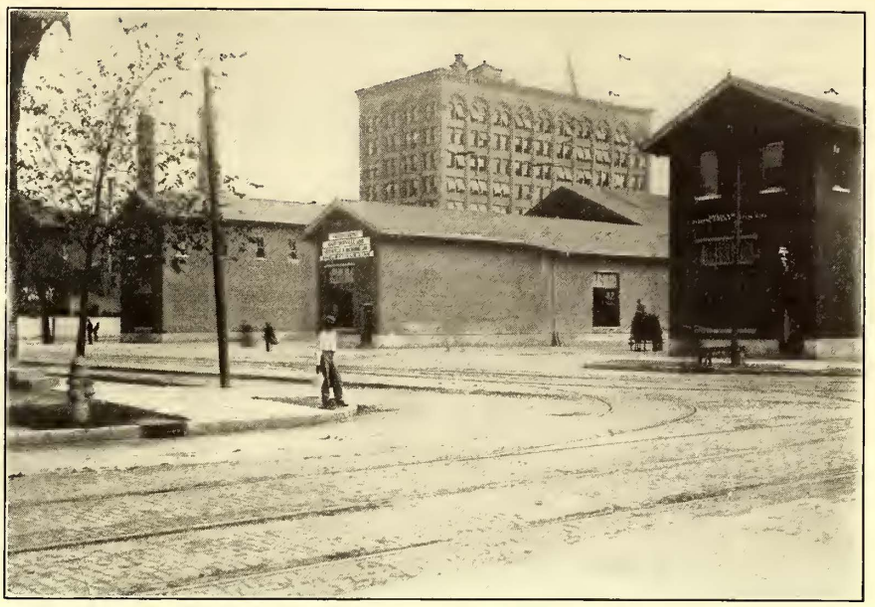


FIG. 2.—ENDS OF FREIGHT HOUSES

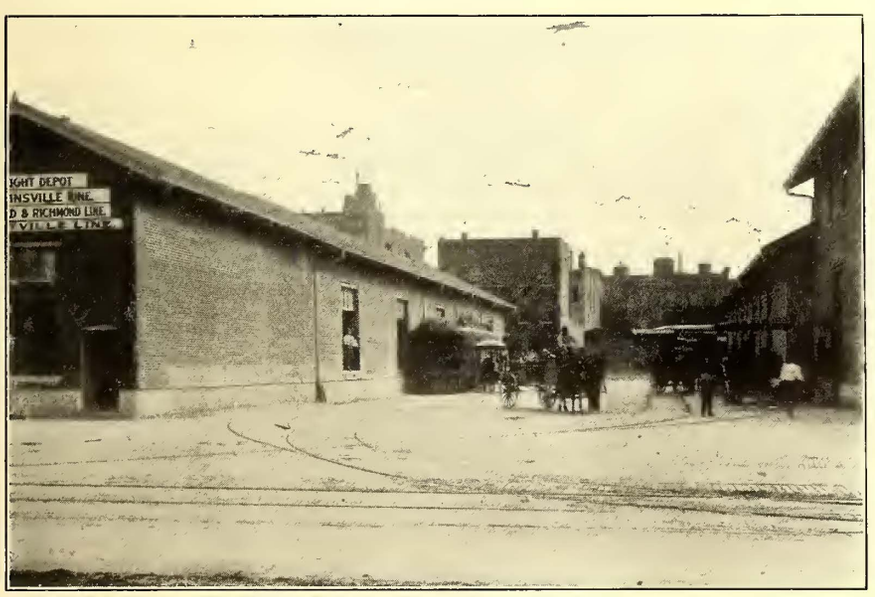


FIG. 3.—METHOD OF RECEIVING AND DISCHARGING FREIGHT

All interurban lines entering the city will use this terminal. The charges for the service rendered by the Traction & Terminal Company are 75 cents for each car entering the station, and 15 cents per car-mile.

Fig. 4, which shows the entrance to the passenger train shed from Market Street, shows an improvement which has been made since the description of this train shed appeared in the Street Railway Journal. This improvement is the placing of gates to keep pedestrians and teams out of the train shed. These gates are of the ordinary railroad grade crossing type, with the addition of steel frame work to prevent persons from crawling under the gates. The Indianapolis Traction & Terminal Company now owns the greater part of the space on the two city blocks upon which the passenger and freight terminals are located. The terminal station was when built just at one side of the retail shopping district of Indianapolis. This district, however, is rapidly moving in the direction of the interurban terminal station, and there has been a most decided change and improvement in the character of the stores along Illinois Street near the Terminal Building. These stores were formerly occupied by a cheap class of tenants, but have been rapidly refitted and rented to a higher class of stores

FIG. 4.—ENTRANCE GATES TO PASSENGER TRAIN SHED

at much better prices. The interurban terminal in Indianapolis has certainly been a great benefit to the property near where it is located.

PROPOSED COUNTERBALANCE ELECTRIC RAILWAY

The Orange Mountain region in the northeastern portion of the State of New Jersey has long been famous for the natural beauty of its landscape and its many evident advantages as a residential section. Up to the present, however, these advantages have been somewhat nullified owing to the inaccessibility of the location. The Orange Mountain has an elevation of about 600 ft. above sea level, and although the foot of the mountain is easily reached from New York and the surrounding parts of New Jersey, the slopes and summits have been practically available only to those few who had carriages or automobiles in which to enjoy the magnificent drives of the region. At Eagle Rock, located on the north side of the range, there has been in operation for some time an electric railway which reaches the summit by a long winding incline, and this has been the only means other than driving for reaching the extensive plateau at the top.

About twelve years ago a cable incline was built up the eastern slope of Orange Mountain at considerable expense, but owing to the many obstacles in the way of continuous and satisfactory operation by cable, the road was not a success, and the ideas of the promoters for developing the country along the slopes and on the top were not realized. The cable road was operated spasmodically up to a few years ago, when it was abandoned altogether.

Some years since, the road and a tract of adjacent land passed into the hands of new owners, who are now engaged in building an electric road over the old cable road roadbed, and the road will be operated in connection with a simple counterpoise or balance system.

The roadbed to be utilized for the new line starts at the Valley Road, about ½ mile from the Highland Avenue station of the Lackawanna Railroad, in Orange. It extends in practically a straight line to the top of the mountain, a total distance of 3800 ft. Beginning at the lower end, the road rises on a grade of 14.75 per cent for about 700 ft., then changes to a grade of 7.75 per cent for about 1500 ft., and then rises for the rest of the distance up the mountain on a grade of 14.75 per cent. Two tracks are being laid for the entire distance, the old 60-lb. T-rails of the cable road being utilized for this purpose. The track rails will be laid to standard 4-ft. 8½-in. gage. The cars for the road will be equipped with two 40-hp motors each, and will climb the grade with their own power in conjunction with the counterbalance system. The details of the counterbalance system have not yet been fully decided upon, but will include a tail rope, by means of which the weight of the descending car will be utilized for helping the ascending car to climb the grades. It will be evident that the motors of the two cars will be required to furnish only sufficient power to overcome friction and the difference in the weights of the loads. If the descending car is more heavily loaded than the one that is ascending, no power will be required and the brakes will be brought into requisition to control the speed. It is anticipated that connection will be made both at the lower end and at the upper end of the incline with level tracks, so that passengers may be conveyed from the Highland Avenue station in Orange to various points on the upper part of the mountain without change of car. It is the intention to have three different landing points on the incline; and the two cars will make the three stops on each trip. A system of signaling between the two cars will be installed, so that simultaneous action with regard to starting and stopping will be secured on the part of the respective motormen. The details of this signal system have not yet been decided, but it is expected no serious difficulty will be encountered in utilizing an ordinary telephone circuit for this purpose. Power for the operation of the cars on the incline and on the level tracks at the top and at the

FIG. 5.—VIEW TAKEN FROM OHIO STREET, INDIANAPOLIS, SHOWING THE PASSENGER TRAIN SHED IN THE MIDDLE

bottom will be either rented or will be generated in the company's own power plant at the top. If it seems desirable to put in an independent generating plant, the old building at the summit, formerly used for the cable machinery, will be utilized.

The promoters of the original cable line laid out a recreation resort at the head of the incline, which was then known as Highland Park, and was the starting point for the many fine drives and walks through the Essex and Eagle Rock reservations, covering several thousand acres on the top of the mountain region. It is expected this location will be utilized for a first-class hotel, which it is believed will receive a large patronage from New York and the surrounding region. The new company, in conjunction with the plans for the inclined electric railway, purchased a tract of land extending along the slopes adjacent to the road, and has been disposing of this with the idea of building up the territory.

The road is being built and the other improvements carried out by the Orange Mountain Traction Company, of West Orange, N. J., of which Frank Brewer, associate member of the Institute of Civil Engineers, is president. The other directors are: James R. Williston, member of the New York Stock Exchange; Edward W. Jackson, ex-Surrogate of Essex County; Jay Teneyck, of Coult, Howell & Teneyck, Newark, N. J., and D. D. Sutphen, of A. D. Julliard & Company, of New York.

INDIANA UNION TRACTION NOTES

The Indiana Union Traction Company has in operation its 10-mile extension from Anderson to Middletown.

The company is now going ahead with the erection of a $50,000 terminal station at Muncie, plans for which were made two years ago. This station will be occupied jointly by the Indiana Union Traction Company and other companies entering Muncie.

The company has just put on eighty new motors on its city cars. These are Westinghouse No. 92, replacing various old types of motors in the different cities in which the company operates.

A traffic agreement has just been entered into with the Clover Leaf Railroad for the sale of interline coupon tickets from points on the Indiana Union Traction lines to points on the Clover Leaf, and vice versa.

PROPOSED LINE FOR GUADALAJARA, MEXICO

The stockholders of La Electra Company of Guadalajara have authorized the issuance of $2,000,000 in mortgaged bonds for the purpose of providing funds for the construction of the electric street railway system in Guadalajara. The bonds will be issued in blocks of $500,000 and will be taken, it is stated, by banks in this city. By the purchase of the Kunhardt lines, which were acquired recently for $500,000, La Electra secured control of the street railway situation in Guadalajara. In connection with the purchase of the Kunhardt system by the Bermejillo interests, the state concession granted La Electra for electric street traction in Guadalajara was revised by Governor Ahumada so as to prohibit the construction of paralleled street railway lines within two blocks of any line of the Bermejillo company. The new power house that the company will build in connection with the electric system will cost, as previously announced, the sum of $500,000. It will be located a short distance from the falls of the Santiago River at Juanacatlan, and will be equipped with machinery for the generation of electric current to the extent of 7000 hp. In the present power house at Juanacatlan, which will be abandoned after the completion of the new plant, about 2800 hp. is generated. The cost of the street railway system and the new power house will be between $2,500,000 and $3,000,000.

TREATMENT FOR PERSONS SHOCKED BY ELECTRICITY

A pamphlet on the treatment of persons injured by electric shock has recently been published by the United Gas Improvement Company for the benefit of the many systems in which that company is interested. Through the courtesy of the company, privilege has been secured for reproducing the text and illustrations herewith.

To give proper assistance to persons shocked by electricity,

FIG. 1.—EMERGENCY KIT

it is necessary to have on hand the following materials, contained in the company's emergency kit for electric shock cases, as shown in Fig. 1:

(a) A bottle of aromatic spirits of ammonia;
(b) A bottle of ordinary ammonia, with sponge attachment;
(c) A package of bicarbonate of soda (ordinary baking soda);
(d) A tin cup;
(e) A pair of tongue pliers;
(f) A towel;
(g) A package of antiseptic cotton;
(h) A roll of antiseptic bandaging;
(i) A roll of adhesive tape.

In case of electric shock, instantaneous death or only tem-

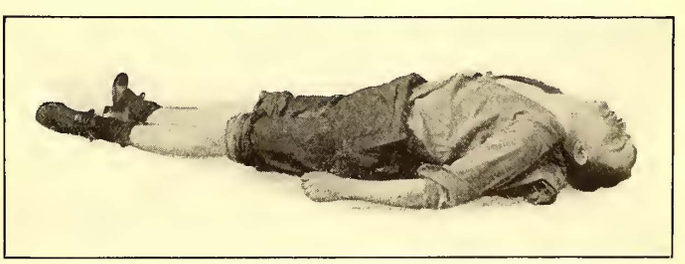


FIG. 2.—FIRST POSITION OF PERSON UNDER TREATMENT

porary unconsciousness may result. The treatment in both cases is as follows, and it should be carried out in every instance, even though the person is apparently dead, for he might be only temporarily unconscious.

TREATMENT.—*Send for a doctor at once*, in the meantime acting as follows: Carry the patient immediately into fresh air. Place him on his back on a flat surface, with a coat rolled (not folded) under the shoulders and neck, in such a way as to allow the head to fall backward enough to straighten the wind-pipe, as shown in Fig. 2; at the same time open the shirt wide at neck and loosen the trousers and drawers at waist, and have an assistant rub his legs hard.

(The sleeves and trouser legs should be rolled up as far as possible, so that the rubbing may be done on the bare skin, and the

shirt and undershirt should be torn down the front so that they may be thrown back, leaving the chest and stomach bare, as shown in Fig. 10.)

Open his mouth, forcing the jaw if necessary.

FIG. 3.—METHOD OF OPENING JAW WHEN RIGID

FIG. 4.—METHOD OF INSERTING BLOCK IN MOUTH

(If the jaw is rigid it can be forced open by placing the forefinger back of the bend of the lower jawbone and the thumbs of both hands on the chin, pulling forward with fingers and pressing jaw open with thumbs, as shown in Fig. 3.)

Place something (piece of wood shown in Fig. 1) between the teeth to keep the jaws open and to prevent the patient biting his tongue, using something large enough to prevent any danger of his swallowing it accidentally; grasp the tongue with the tongue pliers, as shown in Fig. 4, having an assistant hold it out while you are helping the patient to breathe, as described below.

FIG. 5.—FORCING AIR OUT OF LUNGS

FIG. 6.—FIRST MOVEMENT IN ARTIFICIAL RESPIRATION

(In the absence of tongue pliers, the tongue may be grasped between the index and second fingers, after they have been covered with a handkerchief.)

Clear froth from the mouth by putting in your forefinger as far as possible and bringing up the froth with a scooping motion. Have the assistant who is holding the tongue slowly pass the bottle of ammonia, with sponge attachment, under the patient's nose about once a minute when the patient is breathing in, and when his arms are extended above his head, as shown in Fig. 10.

While you are preparing the patient as just described, an assistant should force the air out of the lungs by pressing the *base of the ribs* together about once every four seconds, as shown in Fig. 5. Do not press vertically, put press on the patient's side (palms of hands over lower ribs) in such a manner as to force as much air out of the lungs as possible.

After the clothing has been loosened, the jaw forced open, as shown in Fig. 4, the froth cleared from the mouth and the tongue grasped, begin artificial breathing at once as follows:

ARITICIAL BREATHING

Kneel far enough behind the head of the patient to prevent interference with the man holding the tongue. Bend the patient's arms so that the hands meet on the chest; grasp the patient's forearms firmly, as close as possible to the bent elbows.

1. Firmly press the patient's elbows against the sides of his body so as to drive the air out of the lungs, as shown in Fig. 6; then

2. Raise the arms slowly with a sweeping motion until the patient's hands meet above (or behind) the patient's head, as shown in Fig. 7; then

3. While you have the patient's arms stretched out in line with his body, give them a slow, strong pull, until you have expanded or raised his chest as high as it will go, as shown in Fig. 8; then

4. Bring the arms, with bent elbows, down against the sides, and press them firmly as before, as shown in Fig. 6.

FIG. 7.—SECOND MOVEMENT IN ARTIFICIAL RESPIRATION

This action should be continued about fifteen times a minute until the patient begins to breathe. You must guard against a tendency to make these motions too fast; they must be done

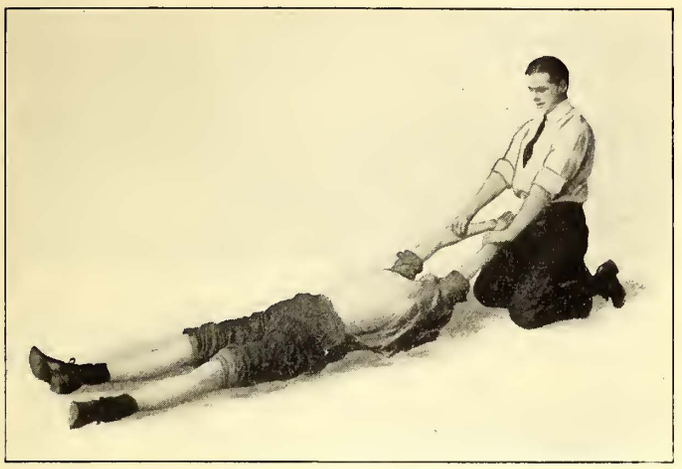


FIG. 8.—THIRD MOVEMENT IN ARTIFICIAL RESPIRATION

slowly. A good plan is to count four slowly—"one," as the pressure is given on the sides, as shown in Fig. 6; "two," as the arms are being extended above the head, as shown in Fig. 7; "three," as the strong pull is given, as shown in Fig. 8, and "four," when the arms are again being bent and returned to the sides, as shown in Fig. 9.

Do not let your hands on the forearms slip away from the elbows; the best result comes from grasping close to the elbows, as shown in Fig. 9.

The operator must appreciate the fact that this manipulation must be executed with methodical deliberation, just as described, and never hurriedly or half-heartedly. *To grasp the arms and move them rapidly up and down like a pump handle is both absurd and absolutely useless.*

Each time the arms are pulled above the

FIG. 11.—TREATMENT AFTER PATIENT BECOMES CONSCIOUS

head and the chest expanded, the assistant who is holding the tongue should pull the tongue out and downward, and another assistant should, from time to time, slap the chest with a towel or cloth wet with cold water, as shown in Fig. 10.

When the patient is breathing by himself, the process of artificial breathing can be stopped, but the process of pressing the sides *every other* time he breathes out, should be started as follows:

FIG. 9.—FOURTH MOVEMENT IN ARTIFICIAL RESPIRATION

Do not press vertically, but press on the patient's side (palms of hands over lower ribs) in such a manner as to force as much air out of the lungs as possible, Fig. 5. You can carry

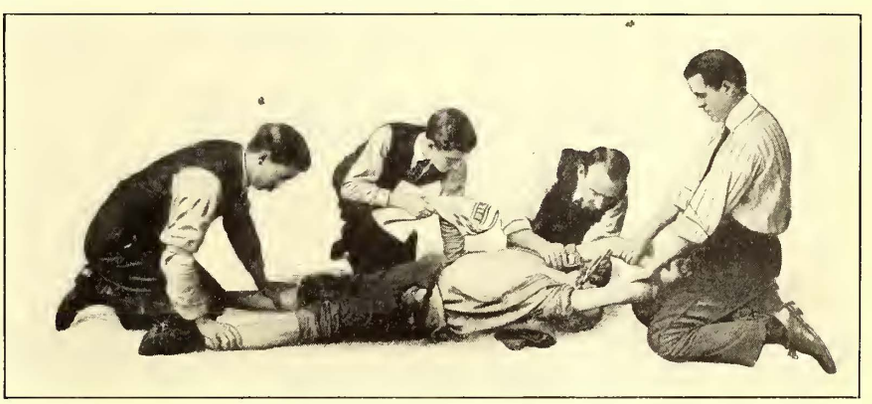


FIG. 10.—POSITION OF ASSISTANTS

out this pressing action most successfully, if, on beginning, you move your hands in and out with every breath, pressing very lightly, until you have established a rhythmical motion of your hands in unison with the patient's breathing; then you can begin to press hard at every other outgoing breath.

(The object of doing this is to strengthen his breathing. By making the pressure every other time he breathes out, you give him an opportunity to take a breath himself, and this natural effort to breathe is in itself strengthening to the action of the lungs.)

Continue this pressing action until the man is conscious and breathing well by himself.

The rubbing of the legs and arms should continue as long as the artificial breathing, or pressing action, is necessary, and the holding of the tongue, and the passing of the bottle of ammonia with sponge attachment under the nose, as long as he is unconscious, as shown in Fig. 5.

After he becomes conscious, give him a half teaspoonful of aromatic spirits of ammonia in a third of a glass of water. After you have brought him around, surround him with bottles of hot water.

(Beer bottles are easily obtained, and should be filled with hot water and covered with a paper or cloth to prevent burning the flesh. Hot bricks, also covered, or gas bags filled with hot water will answer as well.)

Then cover him with a coat and watch him. See Fig. 11.

In performing artificial breathing, if the patient does not show any signs of coming to life promptly, you should not be discouraged, but should continue the motions regularly for *at*

least one hour, summoning such assistance as you may need. Cases are known where patients showing no signs of life after an hour's work have still recovered, and their recovery was due entirely to the faithful persistence of the person in charge.

Persons shocked by electricity need *fresh* air; therefore, bystanders should not be permitted to crowd around a patient, and no one should be allowed to approach him except those carrying out these instructions.

The recovery of a person unconscious from electric shock may be hastened by the use of oxygen, which should be administered at the discretion of the doctor.

BURNS CAUSED BY ELECTRICITY

Electric shocks are often accompanied by various types of burns, which should be treated as follows:

Have the injured attended by a doctor as soon as possible. In the meantime cover the burned surface with cotton, saturated in a strong solution of bicarbonate of soda and water (as much soda as the water will absorb), and then wrap with light bandaging. In the absence of soda, carron oil may be used in the same manner.

(Even apparently slight burns should be treated by a doctor, as the injuries are likely to prove more serious than those resulting from ordinary burns.)

Should the articles contained in the company's emergency kit for electric shock cases not be on hand when needed, after sending for a doctor, every effort should be made to revive the patient, by following the course of movements described until the doctor arrives and the necessary articles are secured.

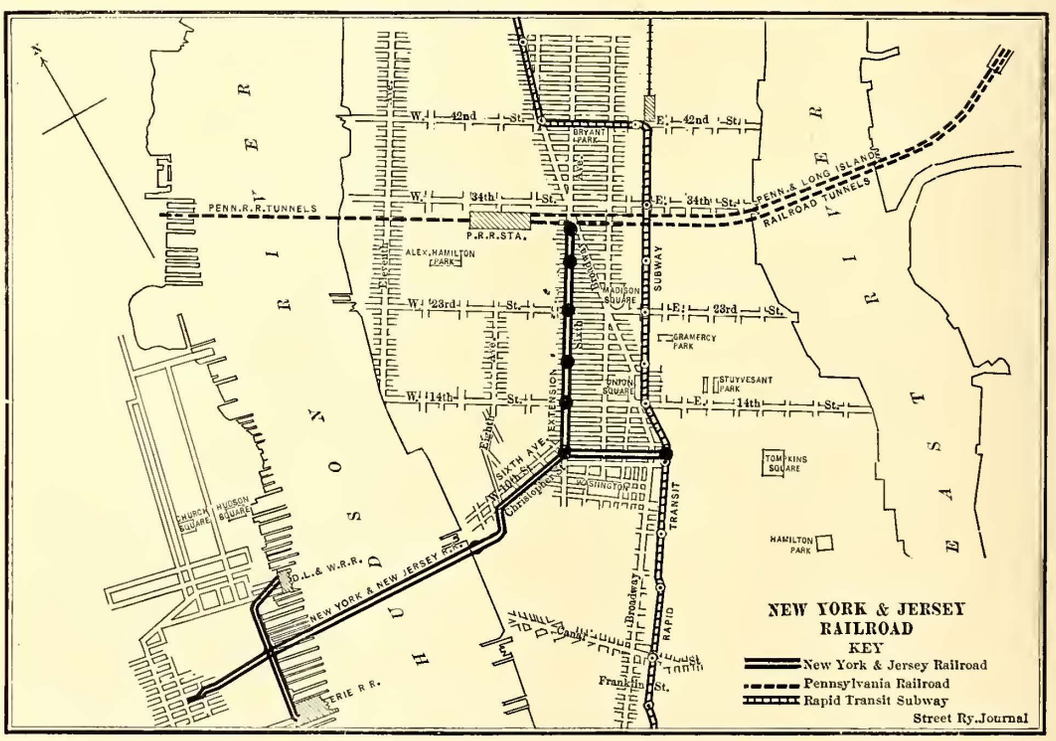
COMPLETION OF HUDSON RIVER TUNNELS OF THE NEW YORK & NEW JERSEY RAILROAD COMPANY

An important event in the history of New York City's traction facilities occurred on Friday, Sept. 29, with the completion of the double-tube tunnel system of the New York & New Jersey Railroad Company under the Hudson River between Hoboken and New York. The uncompleted south tube of this company's tunnel system, which has been under construction from the Jersey side of the river, reached the wall of the working shaft on the New York side at Morton Street and the river front a few days ago, and this wall was forced through on Sept. 29, in the presence of the officials and directors of the above company and also of the Hudson Companies, the construction company directly in charge of the prosecution of the work. The event was attended with considerable ceremony. The officials, together with a party of invited guests, entered the south tube through the entrance shaft near Fifteenth Street, Jersey City, from which all of the work of construction has been carried on, and rode through to the barrier wall at the New York end, where W. G. Oakman, president of the Hudson Companies, operated the hydraulic jacks which forced the final opening through the wall and permitted the party to make the first complete trip through the tube.

Among those in the party representing the New York & New Jersey Railroad Company were W. G. MacAdoo, president; E. F. C. Young, director; C. W. King, secretary, and A. B. Conger, treasurer. The Hudson Companies, the construction company, was represented by W. G. Oakman, president; Pliny Fisk, director; W. N. Barnum, director; W. C. Kinney, treasurer; Wm. H. Barnum, assistant treasurer; Chas. M. Jacobs, chief engineer; J. V. Davies, deputy chief engineer; G. D. Snyder, principal assistant engineer; H. M. Sperry, consulting signal engineer; R. S. Courtney, works manager; F. K. Hilt, division engineer, and Dr. A. J. Loomis, medical director at the tunnel. L. B. Stillwell, consulting electrical engineer, was represented by Hugh Hazleton, his assistant.

The completion of these tunnels marks the culmination of an enterprise that was projected over thirty years ago and, although regarded at that time as an impracticable undertaking, was carried well along toward completion before engineering difficulties and lack of financial support compelled an abandonment of the work. At the time work was stopped, in 1892, the north tube was nearly half completed and work had been begun on the south tube. Work was again taken up by the present company in 1902, after a delay of ten years, and has been pushed to completion in record time. The north tube was finished in March, 1904, and the work of lining it with concrete and installing the cable ducts at the sides is well advanced. Now that the south tube is completed and the air pressure necessary with the shield method of construction is removed, similar work will be vigorously prosecuted there also. Work is progressing so rapidly upon the approaches that it is confidently expected that cars will be running upon the system early in 1907.

The length of the tunnels between the shafts at Fifteenth Street, Jersey City, and Morton Street, New York, is 5780 ft., and the interior diameter of each of the tubes is 15 ft. 3 ins.



MAP SHOWING TUNNELS NOW COMPLETED OR BUILDING OF THE NEW YORK & JERSEY RAILROAD AND THEIR CONNECTIONS

The tubes are laid nearly parallel and are separated only about 50 ft. toward the middle of the river. They have no cross communication at any point between the shore shafts. The greatest depth below mean tide is near the middle of the river, where the tubes are 15 ft. below the bed of the river; the depth of water at that point is 65 ft. Each tube will provide for a single track. The north tube will carry the westbound

traffic and the south tube the eastbound or New York traffic.

The New York approaches to the tunnels have been extended to some distance eastward from the Morton Street shaft. Construction upon these tunnels is being carried out upon the shield and hydraulic jack method, similar to that for the tubes beneath the river, and the shields for the approaches have now reached Christopher Street. The present plans for the New York terminal call for a line running up Fourth Avenue as far as Thirty-Second Street, with stations at Fourteenth, Eighteenth, Twenty-Third and Twenty-Eighth Streets, and a branch through Ninth Street, to make connection with the Interborough Subway at Astor Place, as shown in the accompanying map. The plans for the terminals upon the New Jersey side of the river have not been definitely determined, but it is probable that connections will be made with the principal ferry terminals, so that incoming passengers may have the advantages of direct connections with the principal points of the city without the delays and inconveniences of the present ferry accommodations.

During the work of excavation both tunnels were equipped with a cable-hauling system to facilitate the removal of the excavated earth. That in the north tube was supplied by the John A. Roebling's Sons Company, that in the south tube by the Cockburn Barrow & Machine Company.

CORRESPONDENCE

DISCUSSION ON ARTICLES IN THE STREET RAILWAY JOURNAL

WEST PENN RAILWAYS COMPANY

Connellsville, Pa., Sept. 8, 1905.

Editors Street Railway Journal:

We have recently adopted the practice of using your paper as a text for discussion in our staff meetings, and think that others among your readers may be interested in this method of conducting staff meetings. The meeting held last week was handled in the following manner: The subject taken for the day was "Accidents; Their Cause and Their Prevention." The preceding issue contained Dr. Rockwell's article on the cause of accidents, and this was considered and discussed by sections. For instance, the author makes the statement that curves are a fruitful source of accidents, and that when engineers learn that a straight line is the safest as well as the shortest distance between two points, much will be accomplished in the reduction of accidents. This brought forth some recommendations on the part of the different superintendents relative to getting clearer vision on the part of the motorman at several points along the line where the growth of high weeds and bushes partially obstructed the view. This resulted in a request being made on the roadmaster's department to cut away all obstructions of this nature. Another point brought up in connection with curves was that the striking of curves at high speed by the cars was causing the track to get wide to gage at some points, and everyone made a mental note to look up the curves on his respective division to see whether they need any attention. The remarks on grade crossings brought some discussion as to the best means of preventing accidents at those points. The operation of summer cars, the keeping clear of running boards, the careful checking up of the accident records during the summer months to ascertain the number of accidents happening directly traceable to the use of summer cars followed, were considered in turn, and so on all through the article. After this, purely local matters were taken up, and in this manner a very interesting two-hour session was held. After these meetings the whole party lunches together and then separate, each to his work again.

The meetings are held at no regular stated intervals, the time being governed by local conditions. J. W. Brown,

Superintendent of Transportation.

A NEW TRANSFER CHECK FOR PREVENTING THE FRAUDULENT ISSUANCE OF TRANSFERS

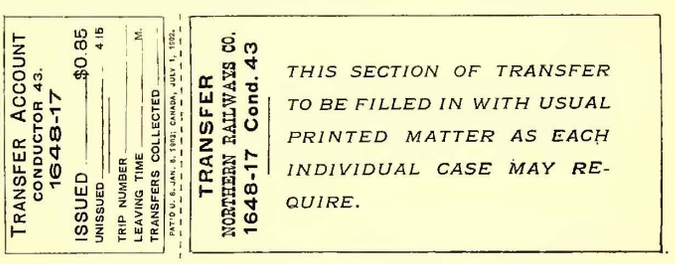
Among the exhibits of the Globe Ticket Company at the street railway convention in Philadelphia, was a new transfer check patented by Frederick W. Gillard, of Steubenville, Ohio, the prominent feature of which is the accounting stub, as shown in the illustration, which represents the seventeenth ticket and stub of a pad of 100 tickets. The number and value of each ticket—plus the total value of all preceding tickets—is printed on the stub of each ticket, as is also the value of the unissued tickets remaining in the pad. The inventor's plan for the operation of this system is as follows:

To begin with, the company should adopt and post the following rule governing transfers in its cars:

"Passengers desiring transfers must procure same at time of paying fare or forfeit their right to them."

and the conductors should be instructed that when collecting fares they must ask whether or not a transfer is required. The conductor enters his trip number and leaving time on the first stub of each trip.

Where a single register is used and no transfer is wanted, he rings up the cash fare on the register. Where cash fares are paid and transfers wanted, instead of ringing them up on the



SPECIMEN OF COMPLETE TRANSFER CHECK

register, he accounts for them by the stub of the last transfer issued, but transfers taken up for fare are rung up on the register together with straight cash fares. The difference between the face of the register and the number of transfers collected shows the straight cash fares and the stub of the last issued transfer shows the number and value of transfers issued. The trip being finished, the conductor enters his trip number and leaving time, together with the number of transfers taken up, in the space indicated by "Transfers Collected," detaches the stub at the perforation near the binding and turns it in, with his cash, as his transfer report, taking no notice of the stubs between the first and last ones of the trip.

Where two registers are used, one for cash fares and one for transfers, the cash fares without transfers are rung up on the cash register; transfers issued and transfers collected are also rung up on the transfer register. The cash register thus shows all cash fares without transfers and the transfer register the total of transfers issued and collected; the difference between the face of the transfer register and the stub of the last transfer issued is the number of transfers collected, and the stub itself shows the number and value of transfers issued. The inventor's preference, however, as perhaps a more simple and absolute check, would be to omit ringing up transfers issued and ring only those taken up, as the stub of the last issued transfer accounts for them in the first instance.

The following advantages are claimed:

The prevention of the fraudulent issuance of transfers by conductors; the number of passengers actually taking transfers and those riding on straight cash fares is readily ascertained; the conductor cannot ring up fares collectively in advance of their receipt, but must issue transfers as demanded and ring up cash fares as received; transfer agents at junction points may be dispensed with; the cash register being relieved of recording the fares for transfers issued, the conductor's chances

of "knocking down" on straight cash fares are lessened in the proportion that the total amount of straight cash fares bears to the total of cash received for fares with and without transfers. The stubs are an absolute check on the cashier receiving the conductor's returns and a ready record of his trips.

The total number of transfers collected and returned to the company should agree closely with the number of transfers issued during the day. The collection will thus afford a check upon the number of transfers actually used by passengers during the day, and the number should, of course, correspond closely with the number issued. An excess in the number used over the number issued would mean that unauthorized or counterfeit transfers were in circulation. No extra transfer tickets are required where transfers are given on transfers, as the original ticket can be provided with detachable coupons bearing the same serial number as the body of the ticket for each transfer required, thus providing the conductor with a voucher for each passenger so carried.

IMPROVED CABLE CLAMP

The accompanying illustrations show the construction and application of the Kearney cable clamp, which has just been

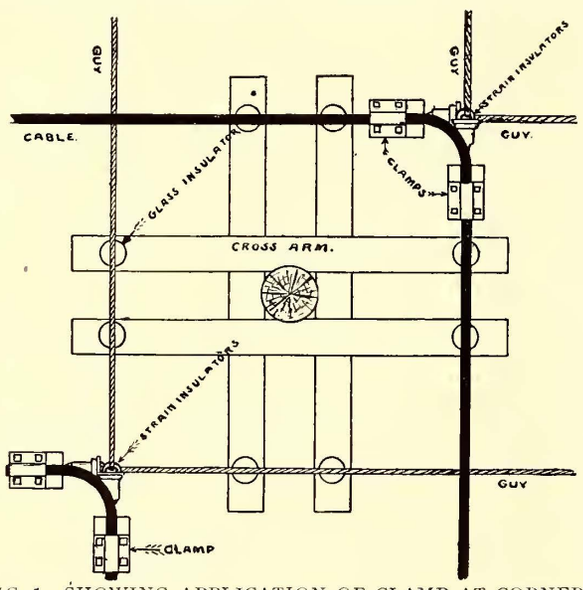


FIG. 1.—SHOWING APPLICATION OF CLAMP AT CORNERS

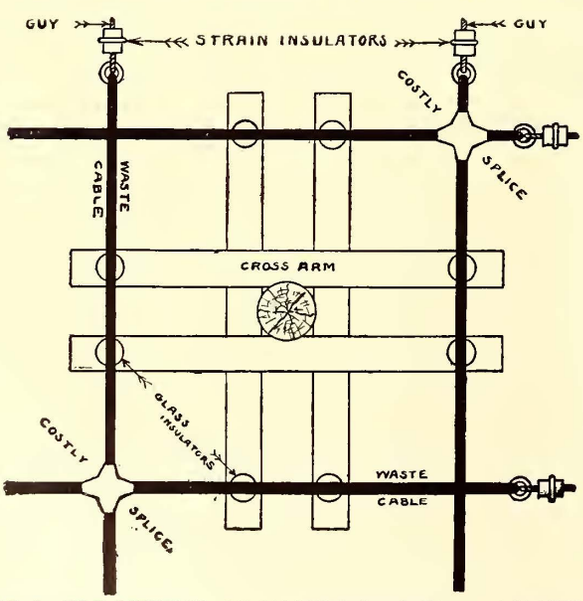


FIG. 2.—OLD METHOD OF MAKING SPLICES AT CORNERS

placed on the market by W. H. Matthews & Bro., of St. Louis. This clamp is made in one size, but is adaptable to any diameter cable from No. 0000 to 1,000,000 circ. mils. Its manufacturers claim that by its use as much as $10 to $15 can be saved at each turn, corner or dead end.

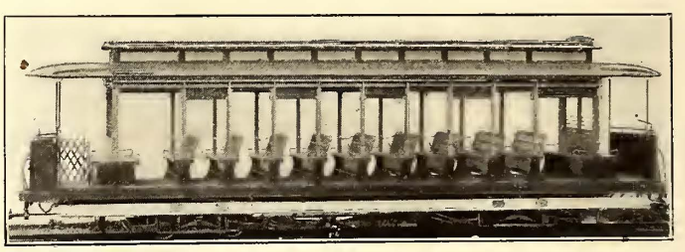
By referring to the illustration marked Fig. 1, the use of this cable clamp can be seen at a glance. In Fig. 2 is shown the

FIG. 3.—NEW CABLE CLAMP

old method of turning a corner, necessitating expensive splicing, large waste of cable and a loss in time and labor, besides sacrificing neatness and strength. Where splicing is used the copper losses are higher and the scrap value of the cable is greatly reduced. Fig. 3 is a perspective view of the clamp.

TWENTY OPEN CARS FOR MEMPHIS

Twenty standard open cars mounted on Brill No. 27-G short-base double trucks have recently been delivered to the Memphis Street Railway Company by the G. C. Kuhlman Car Company. The railway company operates over 200 cars on about 90 miles of trackage in the city and suburbs of Memphis. The seating capacity of the new cars is 65 passengers. The seats have reversible backs, with the exception of four, which are against the bulkheads. The bulkheads not only give good support to the roof, but also afford protection on cool days from the wind caused by the speed of the car. Whenever desired, the bulk-



TYPE OF OPEN CAR USED BY THE MEMPHIS STREET RAILWAY COMPANY

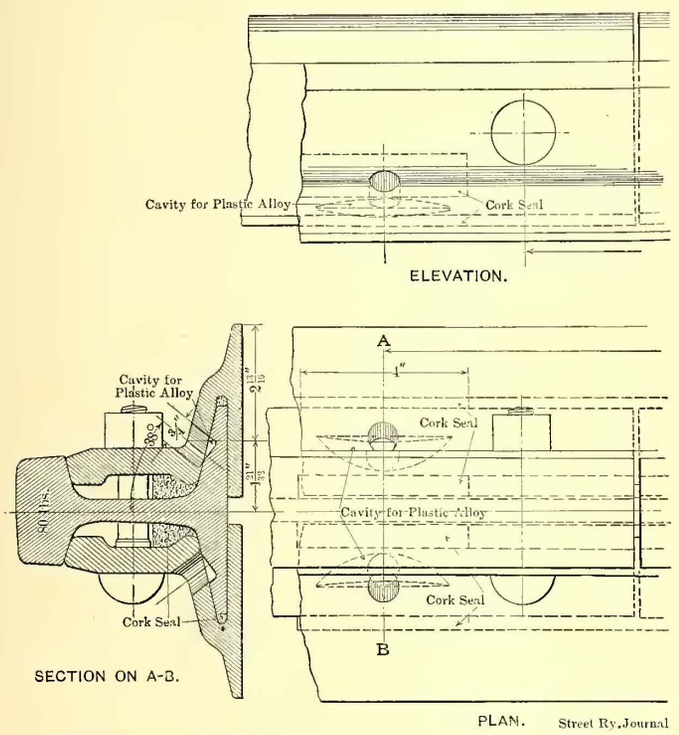
head sashes may be dropped into pockets which are provided for them between the seats so that passengers may have the benefit of the rush of air from the front. Round-corner seat-end panels are used, which not only make it easier to get in and out of the car, but permit the curtains to be drawn to the floor without difficulty, a continuation of the grooves of the posts being formed in the exterior surface of the panel. The interiors of the cars are finished in ash with ceilings of birch. Three-bar window guards are used in front of the bulkhead sashes. The truck has a 4-ft. wheel base and 24-in. wheels.

The general dimensions of the cars are as follows: Length over the end posts, 29 ft. 7¾ ins., and over the crown pieces, 39 ft. 1¼ ins.; width over the posts at the belt, 7 ft. 6 ins.; sweep of the posts, 2½ ins.; distance between the center of the posts is 3 ft. 8⅛ ins. The side sills are 5 ins. x 8 ins., and the end sills are 5 ins. x 7⅛ ins. The thickness of the corner posts is 3⅝ ins., and of the side posts, 2¾ ins.

A NEW PERMANENT PLASTIC RAIL BOND

A new form of plastic rail bond that can be applied to almost any rail section, whether A. S. C. E. standard or special, has just been placed in the field by Harold P. Brown, of New York. In this latest type of plastic bond the angle plate is made to carry the current. On either side of the joint between the first and second bolt holes from the end of each rail a hole is drilled through the angle plate. Under each hole a cavity running lengthwise with the rail is milled out in the top of the rail base. This is clearly shown in the accompanying illustration.

The holes in the angle plates and the cavities in the rails, as well as the lower surface of the angle plate over the cavities, are amalgamated by the Brown process for absolutely preventing rusting. Each hole and the cavity under it are filled with



SPECIAL PLASTIC BOND FOR 80-LB. RAIL AND CONTINUOUS JOINT

a new kind of plastic alloy. This alloy does not harden nor permit the liquid mercury to run out, and being absolutely inelastic, will not jar out of the hole. It adheres tenaciously to the amalgamated rail surfaces, forming an unbroken flexible conductor of extremely low resistance between the rail and the angle plate. To exclude dirt, the holes are sealed with composition cork discs which are weather-proof, and on account of their great lightness will not jar out. These discs can be easily removed, leaving the bond free for inspection or repair without removing the angle plates.

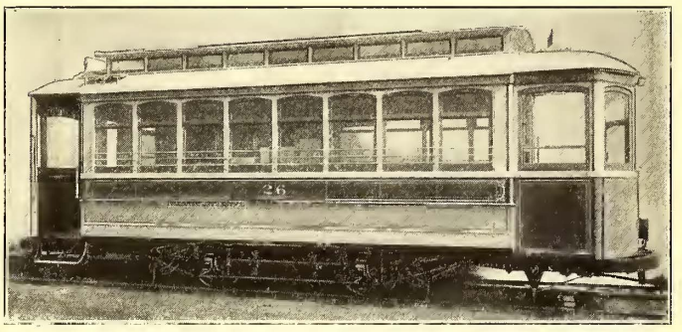
To prevent dirt from creeping into the holes or cavities, a cork seal is placed between the web of the rail and the angle plate opposite the cavities, as is shown in the illustration. In addition, before placing the angle plates on the rails, the upper surface of the base of the rail around each cavity is coated with a viscous, non-hardening and weather-proof compound which completely seals the crack between the angle plate and the rail. In making up these joints, the angle plates are drilled and amalgamated before being distributed along the road, thus shortening the time of application. The cavities are quickly milled out by a portable hand-power milling machine at a very small expense.

When the weight per yard of the two angle plates is about equal to that of the rail and the rail joint is double bonded, the conductivity of the joint is practically equal to that of an equal length of unbroken rail. Though the rails and the angle plates may have excessive motion, the plastic alloy will always maintain the contact between the rails and the angle plate unbroken and keep the conductivity of the joint unimpaired even after long years of service.

This bond was exhibited at the Philadelphia convention on a joint of 70-lb. rail, transmitting 3000 amps. After a few minutes' run the rail was hotter than the bond. It is therefore appropriately named the Permanent Plastic Bond.

CLOSED CARS FOR JACKSONVILLE, ILL.

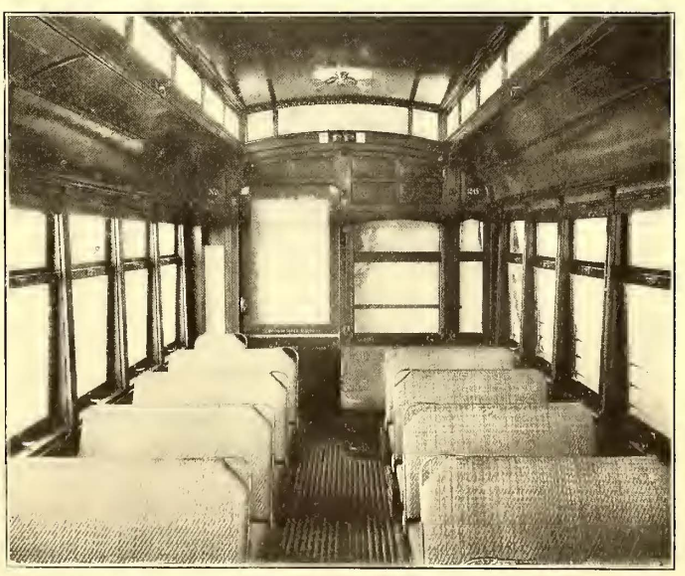
The American Car Company has lately completed five of the cars illustrated for the Jacksonville Railway Company, Springfield, Ill. This road is a part of the Illinois Traction system



SINGLE-TRUCK VESTIBULED CAR USED IN JACKSONVILLE, ILLINOIS

and this car shipment is a duplication of a former order. The length over the end panels is 20 ft. 8 ins. and the width over the posts at the belt, 8 ft. 3½ ins. The cars are mounted on the Brill No. 21-E single trucks, which are claimed to carry the car body 2 ins. lower than any other single truck.

The view of the interior shows the transverse seating arrangement and the type of doors used in the ends, known as the



INTERIOR OF JACKSONVILLE CAR

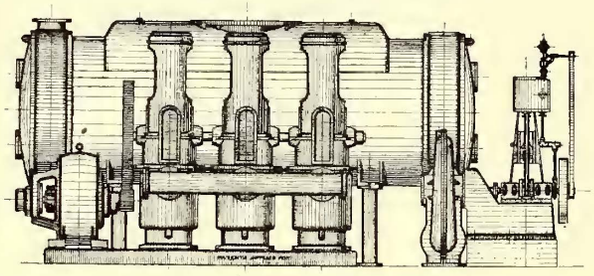
Brownell Patents Company's semi-accelerator. The advantage claimed for this style of door in connection with entrance from one side of platform is the greater facility with which passengers may enter and leave the car, the position being close to the platform step, and the fact that the arrangement in a large measure prevents passengers from standing upon the platforms in such a manner as to obstruct the passage. The

seats are of the Brill tilting style with grab handles attached, and the seating arrangement provides for thirty-two passengers. The lower sashes are arranged to drop into pockets in the side walls, the openings of the pockets being closed with hinged covers, and the upper sashes are stationary. The interior finish is of cherry and the ceilings are of birch.

The length over the crown pieces is 30 ft. 1 in., and from the panel over the crown piece, 4 ft. 8½ ins. The width over the sills is 8 ft. 1 in.; sweep of the posts, 1¾ ins.; distance between the centers of the posts 2 ft. 5 ins. The side sills are 4 ins. x 7 ins. and the end sills are the same. The sill plates are 7 ins. x ½ in.; thickness of the corner posts, 3¾ ins. and of the side posts, 2¾ ins. The length of the seats is 35 ins. and the width of the aisle, 19¼ ins. The height of the steps is 14 ins. and of the risers, 15⅞ ins. The No. 21-E trucks used have a wheel base of 7 ft. 6 ins. and 33-in. wheels.

A NEW HIGH VACUUM SYSTEM FOR STEAM TURBINES

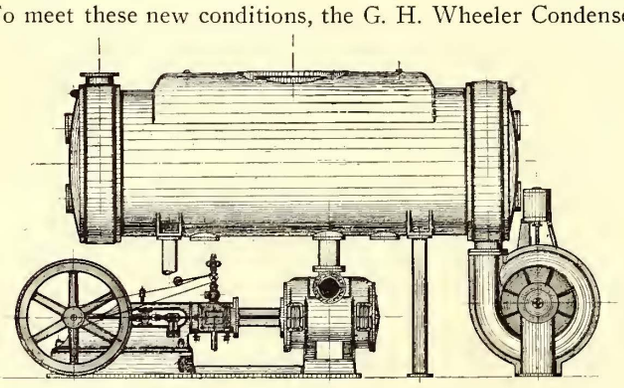
The development of the steam turbine to its present high state of efficiency may have wonderfully improved the conditions existing along certain lines in the many power plants in



IMPROVED CONDENSER WITH TRIPLEX SUCTION VALVELESS AIR PUMP AND CIRCULATING PUMP

which it has been installed, but its evolution has also called for greater improvements in auxiliaries to meet these conditions. Among the most important is the condenser, as it becomes absolutely necessary to secure the highest vacuum and efficiency obtainable for the successful operation of the turbine.

To meet these new conditions, the G. H. Wheeler Condenser

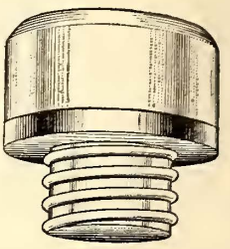


IMPROVED CONDENSER WITH SUCTION VALVELESS AIR PUMP AND CIRCULATING PUMP

& Pump Company, of Philadelphia and New York, has designed a new high vacuum system, especially designed for steam turbine service. The arrangement of the condenser provides from 30 ft. to 40 ft. of the lineal travel of the condensing water which first enters the upper tubes, with final discharge from its lower section, thus permitting rapid circulation of the injection and the water of condensation to leave the condenser within a few degrees of the temperature due to the vacuum. Working in conjunction with this new apparatus is the Mullan suction valveless air pump, crank and fly-wheel design, an apparatus that insures the highest vacuum obtainable, at the least cost for operation.

WEATHER-PROOF SOCKET PLUG

The socket plug shown in the accompanying illustration has been designed as a substitute for an incandescent lamp in places where light is not needed throughout certain portions of the year, as in parks, summer resorts, and for sign work. Under ordinary circumstances when the lamps are removed, the sockets, which are left exposed to the elements, become badly corroded and cracked. The breakage resulting from this cause frequently amounts to a very large proportion of the total installation of sockets and receptacles, and the cost of new ones, together with the price of labor necessary to replace them, forms a considerable item of expense. The socket plug illustrated is thoroughly weather-proof. A soft rubber gasket is interposed between the plug and socket, thus making an absolutely water-tight joint. These plugs are manufactured by the Weather-Proof Socket Plug Company, Philadelphia.



WEATHER-PROOF SOCKET PLUG

NEW PIPE WORKS

The Ball & Wood Company, of 17 Battery Place, New York, has recently added to its works at Elizabethport a plant for turning out welded flanged pipe and pipe bending. The company, in its steam engine work, has noted the growing demand of contractors and engineers for a pipe joint to withstand the higher steam pressures coming into use and the increasing preference for superheated steam, and its purpose is to meet these requirements. It will not do pipe fitting and will undertake no piping contracts, but is prepared to quote prices and fill orders for the material used in this work.

Not only in the use of steam, but in air, gas and water, modern engineering finds its most economical applications in high pressures, and a joint in which the flange is neither screwed nor expanded on the pipe, but is welded to it and a part of it, appeals to the reason and common sense of engineers. The flanges are made of wrought steel of the same grade of metal as the pipe, insuring homogeneity in the flange and pipe after welding. This process is more expensive than in making the common forms of joint. The best of anything follows this law, but in this new plant the Ball & Wood Company has endeavored to avail itself of the latest improvements in every line of equipment, not only in making the joints and bends but in handling the material. A new building has been erected, in which all the tools are driven electrically. Heavy, high-speed lathes, facing tools and multiple drills have been installed and through the use of the new tool steels the largest flanges are faced and drilled quickly and accurately. Electric cranes, oil furnaces and modern hammers complete the equipment for turning out work promptly. After this work is completed, every joint is tested under hydraulic pressure to the required specification before it is shipped, and this test is stencilled on the pipe. The joint has been well received, and the works have been busy ever since the plant was started. To distinguish it from the others in the market the company has given its trade name, "Ballwood," to this joint, and all communications referring to this work should be addressed to the Ball & Wood Company, welding department.

The Detroit, Ypsilanti, Ann Arbor & Jackson Railway has issued a time card containing on the reverse side a schedule of the University of Michigan (located at Ann Arbor) football games for this season, which is simplicity itself. The cards are in great demand by patrons and football cranks.

STORAGE BATTERY INSTALLATION OF THE SYRACUSE & SUBURBAN RAILROAD

The load on the Syracuse & Suburban Railroad is extremely variable, as the line is 14 miles in length and the main service is carried on by four 14-ton double-truck passenger cars which make six trips a day and one freight car which makes two trips a day. In addition, there is a 4-mile extension near Syracuse, upon which a single-truck car is run on a half-hour schedule and on which a 14-ton double-truck car is run three trips a day. The power station is at Edwards Falls, at the farther end of the line, and contains a 600-hp Leffell overshot water-wheel driving two 225-kw G. E. generators. In addition, there is an auxiliary steam plant which is used during the winter months at the time of low water, and which consists of a 500-hp Brown engine driving a 600-kw G. E. generator. The line is a very hilly one, and a number of turn-outs occur on steep grades, and the stopping and starting of the cars on these turn-outs adds to the fluctuations of the load.

As originally operated, the voltage was subject to extreme variations with the fluctuations in load, and in some cases dropped as low as 200 volts. To remedy these conditions two propositions were considered, one to use a. c. distribution and the other to install a storage battery. The latter was adopted. The battery is located in Orville, about 10 miles from the power station and 4 miles from the Syracuse end of the line. It contains 240 cells of type W-9 accumulators of the National Battery Company, and acts as a balancing governor. The battery has greatly reduced the fluctuations on the line, and has actually permitted an increase of the service on part of the line from an hour to a half-hour schedule.

ENTERPRISE IN ZANZIBAR RAILROAD

It is worthy of note that off the east coast of Africa on the Island of Zanzibar, where spices and ivory are the principal products, where the native has never seen a street car or locomotive, and rarely a carriage, the dawn of "rapid transit" is rising.

The city of Zanzibar is situated on the west coast of the Island of Zanzibar. The island is under the protection and control of Great Britain, but nominally under the sway of the Sultan, who occupies his palace and supports his numerous wives according to ancient customs. Zanzibar is a city of 125,000 souls. The exports are ivory, skins, spices and fruits, and this business is largely in the hands of American, English and German merchants. The main land as well as the neighboring islands contribute to this industry.

Arnold, Cheney & Company, of New York, realizing the immense advantage to the island and her commerce of a railroad, obtained some time ago the concession from the government to construct a railroad from the upper end of the island to the port—the city of Zanzibar—a distance of about 22 miles, and for a city belt line in the city of Zanzibar. The latter will be operated with mules, and the interurban line by steam. The interurban line connecting the city of Zanzibar with Bububu has an anticipated extension to Kokotoni, on the north coast of the island, which furnishes a harbor for the small vessels bringing merchandise from the island of Pemba and more northern points. It was thought best to make the rolling stock of the street and interurban roads interchangeable, and an engineer, Geo. R. Brown, was at once sent from New York to make necessary surveys for determining the best possible gage for tracks and the material available for construction. On his report a 36-in. gage was chosen as the widest possible for the narrow city streets. Cars for both lines were purchased from the J. G. Brill Company, and locomotives for the steam line from the Porter Locomotive Works. It was also decided to ship all material, including tools for construction, from this country, and for this purpose a vessel was chartered and loaded with 25-lb. rails and steel ties for the roadbed, the locomotives for the steam line and mules for the motive power. From plate girder bridges with cement for concrete abutments, down to a conductor's lantern, a conglomerate of a whole city railroad with supplies for a year's operation, was packed into one huge ship, the steamship "Ras Bera," which left New York on April 12 last.

The passenger cars were described in the Street Railway Journal for March 18, 1905, and those for the interurban traffic are of a special design suitable for that climate. They are of open platform construction with two slat seats placed back to back longitudinally down the center, with a light wooden top carried on posts fastened to sides of car and provided with canvas curtains. A foot of running board extends along each side of the car. The city mule cars are of similar design, only much shorter, but two club cars were furnished for the Sultan's use, fitted with removable wicker table and chairs, a Brussels carpet for the floor and plenty of gilt trimmings.

In addition, the contractors shipped on the same steamer several miles of portable track, with frogs and switches, to be used as feeders from the plantations en route between Zanzibar and Bububu. It was expected to start the city line in operation early in October, and the steam line by Jan. 1, 1906.

AUTOMATIC HEADLIGHT SWITCH

The usual method of connecting up an incandescent electric headlight is by means of a three-way switch, which is thrown in one direction or the other, according to the direction in which the car is going. If the motorman or conductor should forget to throw this switch the headlight is either not lighted or is burning at the wrong end of the car. In either case, a considerable source of danger is introduced.

To avoid this trouble, and taking the switching of the headlight out of the hands of the motorman and conductor, a patent for an automatic headlight switch has recently been awarded to R. D. Apperson and A. J. Kohler, of Lynchburg, Va. Mr. Apperson, one of the patentees, is president of the Lynchburg Traction & Light Company, and the automatic switching device has been used on his line for over two years with no cost for repairs or maintenance. The switch is very simple in construction and consists of two semi-circular strips at each end of the trolley base, with a contact device carried on the trolley pole. The lamp circuit for each end of the car is carried through the set of plates at the same end of the trolley base, so that when the trolley pole is reversed the headlight at one end of the car is automatically extinguished and that at the other end lighted. At the same time that the front headlight circuit is closed the rear hoodlight is lighted and the front hoodlight is extinguished. The inventors have worked out a system for applying the device not only on a trolley car, but also on third-rail and underground conduit electric cars. In all of these cases the construction is simple and can be installed on the car in less than 3 hours by any of the car-shed foremen. The Chicago car shown by the J. G. Brill Company at the convention was equipped with this automatic headlight switch.

The Cleveland Electric Railway Company has been awarded a medal for its showing in industrial betterment work by the Liege (Belgium) Exposition. The company was not aware that any information regarding its work had been given out. A similar medal was received from the St. Louis Exposition some months ago. Reference has been made in these columns to the club rooms and entertainments given at the various car houses.

AN INVESTIGATION OF MUNICIPAL OWNERSHIP

Considerable progress has been made by the special committee appointed recently by the executive committee of the National Civic Federation to investigate public ownership and operation of such utilities as gas, water, electric lighting and street railways. A general meeting, which was largely attended by representative men, was held at Earl Hall, Columbia University, New York City, Oct. 5, when, in the absence of President August Belmont, the meeting was called to order and addressed by Samuel Gompers, first vice-president of the Federation. In a letter regretting his absence on account of sickness and an operation, Mr. Belmont said:

The subject of municipal ownership and operation of public utilities is forcing itself upon the attention of all thoughtful persons. Unfortunately, the very lack of comprehensive and authoritative data and information leaves the discussion to theorists, who often advance arguments which can neither be accepted nor rejected, for the very reason that no authoritative data exist. The National Civic Federation will now try to obtain true and reliable facts to guide the student and legislator in seeking the best means to establish peace and maintain co-operation between capital and labor. To the accomplishment of this purpose I have encouraged this movement and advocated the missions of the sub-committees.

The relations of capital and labor are vital to the prosperity of the individual and to the State. It is proper, therefore, that arguments should be based on correct facts and known conditions. The Civic Federation has no greater work among its varied duties than to secure these data. The committee, which it purposes to send abroad, represents every shade of thought and opinion on the subject. This committee, when it returns, will report to a larger commission men at home, likewise from every part of the country and representing every phase of life. The Civic Federation has no interests to serve and no arguments to make on the subject, but to present the facts and conditions as they may exist abroad and at home, for the use and benefit of the entire country, without respect to special interests.

The general question was discussed throughout almost the entire day, and it was decided not to take up any of the large questions connected with governmental ownership and operation of steam railways, telegraphs, etc., but to limit the inquiry, at least at this stage, to municipal utilities. There was considerable discussion as to how far even this limited inquiry should go, but a consensus of opinion was manifested as to the subjects mentioned above as being those particularly desirable for study. Special emphasis was laid upon street railways as perhaps the matter that was most deeply interesting to the population of some of the largest American cities at the present time.

Before the close of the day the following officers and committees were elected and appointed:

Officers.—Melville E. Ingalls, president, Big Four Railroad, Cincinnati; John Mitchell, vice-president, president United Mine Workers, Indianapolis, Ind.; John G. Agar, second vice-president, president Reform Club, New York City; Edward A. Moffett, secretary, editor "Bricklayer and Mason," New York City.

Executive Committee.—The officers ex-officio and Alexander H. Revell, merchant, Chicago, Ill.; E. E. Clark, grand chief Brotherhood of Railway Conductors, Cedar Rapids, Ia.; Isaac N. Seligman, banker, New York; E. Rosewater, editor "The Bee," Omaha, Neb.; William Wirt Howe, lawyer, New Orleans; Samuel Insull, president Chicago Edison Company, Chicago; John Bancroft Devins, editor New York "Observer," New York; Frederick N. Judson, attorney, St. Louis, Mo.; Carrol D. Wright, president Clark University, Worcester, Mass.; Hamilton Holt, editor "The Independent," New York; Walter MacArthur, editor "Coast Seamen's Journal," San Francisco, Cal.; D. L. Cease, editor "Railroad Trainmen's Journal," Cleveland, Ohio; Franklin MacVeagh, merchant, Chicago, Ill.; Henry M. Farnam, Yale University, New Haven, Conn.; George H. Harries, Washington Railway & Electric Company, Washington, D. C.; Louis D. Brandies, lawyer, Boston, Mass.; Marcus M. Marks, manufacturer, New York City; James O'Connell, president International Association of Machinists, Washington, D. C.; Lawrence F. Abbott, editor "The Outlook," New York City; R. R. Bowker, editor "Publishers' Weekly," New York; Alexander C. Humphrey, president Stevens Institute, Hoboken, N. J.; J. W. Jenks, Cornell University, Ithaca, N. Y.; John Tobin, president Boot and Shoe Workers' Union, Boston; Frank A. Vanderlip, National City Bank, New York City.

Committee on Investigation (to investigate the subject in America and foreign countries).—M. E. Ingalls, Big Four Railroad Company, Cincinnati, Ohio; Talcott Williams, editorial writer, "The Press," Philadelphia, Pa.; W. D. Mahon, president Amalgamated Association of Street Railway Employees, Detroit, Mich.; Frank J. Goodnow, Columbia University, New York City; Walton Clark, United Gas Improvement Company, Philadelphia, Pa.; Dr. Albert Shaw, editor "Review of Reviews," New York City; Edward W. Bemis, superintendent waterworks, Cleveland; John H. Gray, Northwestern University, Chicago, Ill.; Walter L. Fisher, Municipal Voters' League, Chicago, Ill.; Timothy Healy, international president Stationary Firemen, New York City; William J. Clark, General Electric Company, New York City; H. B. F. MacFarland, president Board of Commissioners, District of Columbia, Washington, D. C.; Daniel J. Keefe, president International Longshoremen's Association, Detroit, Mich.; Frank Parsons, president National Ownership League, Boston; John R. Commons, University of Wisconsin, Madison, Wis.; J. W. Sullivan, editor "Garment Workers' Bulletin," New York; Leo S. Rowe, University of Pennsylvania, Philadelphia; F. J. McNulty, president International Brotherhood of Electrical Workers, Washington, D. C.; Albert E. Winchester, manager South Norwalk Electric Plant, South Norwark, Conn.; Charles L. Edgar, president the Edison Electric Illuminating Company, Boston, Mass.; Milo H. Maltbie, franchise expert and former editor "Municipal Affairs," New York City.

At the adjournment of the meeting of the commission, fifteen members of the committee on investigation met informally to confer upon means for carrying out effectively the purpose of the movement, and a sub-committee of this investigation committee, consisting of Messrs. Goodnow, Walton Clark, Bemis, Sullivan and Maltbie was appointed to prepare a set of questions designed to cover all the vital points on which information is desired in this country and abroad. These questions will be taken up at an early date in November by the larger committee on investigation for such action as may then be deemed advisable. During all the discussions there was a strict avoidance of the polemical aspects of the question and a strenuous insistence upon the desirability of securing by the work of the committee the absolute facts and data irrespective of the interpretation that might subsequently be put upon them. Inquiries will be carried on by the committee, not only in this country but in Europe, it being necessary, for example, to cross the Atlantic to secure figures with regard to municipal street railway operation, there being virtually no roads of that character in the United States. It will be some months before the work of the commission can be completed and brought to public attention.

The Detroit United Railway, at its shops, is building twenty-four new cars for the Trumbull Avenue line. They are to be equipped with single trucks of an improved style, air brakes, fenders, and a new heating apparatus operated from the vestibule. In a general way, they conform to the pattern of the Fourteenth Avenue cars, except where improvements are made by having no side door, wider aisles and greater space between the seats, making the car much roomier. Each will seat thirty people and is provided with a generous rear platform for the accommodation of smokers.

LEGAL DEPARTMENT*

INCOMPETENT MEDICAL ATTENDANCE

One of the stock defenses to indictments for murder is the claim that the deceased was killed not by the defendant, but by his doctors; in other words, that the wound inflicted was not necessarily, or even probably, fatal, but that death resulted because of incompetent medical treatment. The criminal courts deal with this contention according to common sense, and rarely does it prevail if the injury inflicted was of a very serious character.

A defense of the same kind is often raised in accident cases. The law upon the subject is that a person injured by the negligence of another is bound to use reasonable care to effect a speedy cure, and must exercise reasonable care to employ physicians of ordinary skill, but he is not an insurer of the skill of the physicians employed, or required to employ the highest medical skill available; and the fact that the physicians employed make a mistake in the treatment, and thereby fail to effect a cure, does not preclude the person injured from recovering for the entire injury sustained, so long as the requisite care has been used in the employment of the physicians.

The question whether or not plaintiff's condition is the result of defendant's negligence or of an inherent disease or tendency to disease, is a question of fact, and the circumstance that injuries caused through negligence of another were aggravated by an organic tendency to disease, which was developed by the injuries or through treatment applied by the physicians, does not preclude a recovery. These points have recently been reiterated by the Supreme Court of Illinois in a well-considered opinion in the case of Chicago City Ry. Co. vs. Saxby (December, 1904, 72 N. E., 755). The general rules governing the subject are formulated as follows in the American and English Encyclopedia of Law (Vol. VII. 2d Edition, p. 338).

"In cases where the defendant's negligence caused a disease, aggravated a prior disease, or led in immediate sequence to disease, the defendant must respond in damages for such part of the diseased condition as his negligence caused; and if there can be no apportionment, or if it cannot be said that the disease would have existed apart from the injury inflicted by the defendant, then the defendant is responsible for the diseased condition."

LIABILITY FOR NEGLIGENCE

ALABAMA.—Carriers—Injuries to Passengers—Pleading—Wilful Injury—Contributory Negligence.

1. In an action against a carrier for injuries to a passenger, an allegation that defendant negligently operated its train, and that thereby or in consequence thereof plaintiff was injured, etc., sufficiently charged defendant's negligence.

2. A count alleging that plaintiff informed defendant's conductor of his desire to alight at a certain point; that it then became the duty of defendant's servant, after slackening the speed of the car, not to increase the speed until plaintiff had alighted, or had a reasonable opportunity to do so, but that, notwithstanding such duty, defendant's servant negligently, suddenly, and greatly increased the speed of the car before plaintiff had alighted or had a reasonable opportunity to alight, in consequence of which negligence plaintiff's body was thrown from the car, etc., though faulty in assuming, instead of alleging, that defendant's servant slackened the speed on being informed that plaintiff desired to alight, was nevertheless good as against a demurrer on the ground that it failed to allege increase of speed at the time plaintiff was in the act of alighting.

3. A count, after stating plaintiff's relation as a passenger, and the duty of defendant's servant not to increase the speed of the car after being advised that plaintiff desired to alight, alleged that defendant's motorman, well knowing that plaintiff was seeking to alight, and that a sudden jerk would probably throw plaintiff from the car, with wanton, wilful and reckless negligence suddenly increased the speed of the car, and, as a proximate consequence thereof, plaintiff was thrown from the car and injured. Held, that such count did not present a charge of wilful injury, but tendered an issue of negligence only.

4. Where a street car passenger stepped off a car while it was going at a high rate of speed, with his face toward the rear of the car, he was guilty of contributory negligence.—(Birmingham Ry., Light & Power Co. vs. Glover, 38 S. Rep., 836.)

ALABAMA.—Street Railroads—Collision with Teams—Wanton Negligence—Instructions—Questions for Jury.

1. In an action against a street railroad for injuries to a mule, caused by a collision with a car, whether the railroad was guilty of a wanton or wilful wrong, held, under the evidence, a question for the jury.

2. In an action against a street railroad for injuring a mule, a charge that the motorman had the right to assume that travelers would look and listen for approaching cars before attempting to cross the track, and the jury might consider that fact in determining whether or not the motorman was guilty of a wilful wrong, singled out and gave undue emphasis to a particular fact, and was properly refused.

3. The fact that a street car which collided with and injured a mule was not being run faster than 5 miles or 6 miles an hour does not show, as a matter of law, that the motorman was not guilty of a wilful or wanton wrong in striking the mule.

4. In an action against a street railroad for injuring a mule, a charge that defendant was not guilty of a wilful or wanton wrong if the car was being run at the rate of 5 miles or 6 miles an hour, was properly refused, because it did not limit the question of speed to the time of the injury.

5. A charge calling on the trial court to declare that there is no evidence of a particular fact is properly refused.

6. In order that one may be held guilty of wilful or wanton conduct, it must be shown that he was conscious of his conduct, and conscious, from his knowledge of existing conditions, that injury would likely or probably result from his conduct, and that with reckless indifference to consequences he consciously and intentionally did some wrongful act or omitted some known duty which produced the injurious result.—(Montgomery St. Ry. vs. Rice, 38 S. Rep., 857.)

ILLINOIS.—Carriers—Injury to Passenger—Negligence—Question for Jury—Evidence—Admissibility—Harmless Error.

1. Where there is any evidence tending to support the allegations in the declaration it is not error to refuse to direct a verdict for defendant.

2. Where the conductor of a street car knew that the car would swing around a corner, and knew that it was near the corner when he told a passenger to walk through the car so as to obtain a seat in another car, it was his duty to inform the passenger of the danger of the car making the turn, or to so control the car that there would be no danger in the passenger passing from one car to the other.

3. Whether it is negligence for a passenger on a street car to ride on the platform of the car in a case where other passengers are on the platform and people are holding onto the straps inside and the seats are filled is a question for the jury.

4. Whether a passenger on a street car, who passed from one car to another for the purpose of procuring a seat, pursuant to the direction of the conductor, was negligent, held, under the evidence, a question for the jury.

5. Where on the examination of a witness the counsel for the adverse party stated that he did not object if witness did not go any further, and the examination along that line was discontinued, the adverse party could not assign as error the admission of the evidence.

6. Where, in a personal injury action, competent evidence was admitted showing plaintiff's nervous condition, the error in permitting a witness to state that he knew, without plaintiff telling him, that she was nervous, and that he knew nothing about it except from her statement, without requiring an explanation of the conflicting statements, was not reversible error.

7. Where, in a personal injury action, an injury to the nervous system is claimed, it is not error to permit a physician to testify with reference to plaintiff's nervous condition, for he can testify on the subject without relying on what plaintiff says in reference thereto.—(Chicago City Ry. Co. vs. McCaughna, 74 N. E. Rep., 819.)

INDIANA. — Street Railroads — Employees — Fellow Servants — Negligence—Employer's Liability Act—Applicability—Pleadings—Complaint—Allegations—Sufficiency—Change of Venue—Record—Amendment.

1. Burns' Ann. St. 1901, Section 417, requires the clerk of the court from which a change of venue is taken to transmit the papers and a transcript of the proceedings to the clerk of the court to which the venue is changed, and makes it the duty of the latter to

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docket the action in its order. The clerk of the court to which a case had been sent upon a change of venue certified that the record on appeal contained a full and true transcript of all papers filed, including pleadings. It did not affirmatively appear that the original papers were filed in the court to which the case was sent, nor did it affirmatively appear that they were not so filed. Held to sufficiently appear that the record contained a copy of all pleadings in the case.

2. Where, after a change of venue, the parties appeared in the court to which the case was sent, and the court overruled demurrers to the complaint, and the cause proceeded to trial and final judgment without any objection that the original pleadings were not on file, the appellate court is authorized to treat the copy of the pleadings set out in the copy of the transcript made on the change of venue as a sufficiently certified copy of the original pleadings.

3. On a motion for a nunc pro tunc entry showing the actual ruling of the court on separate demurrers to the different paragraphs of a complaint and the exceptions taken thereto, there was a written memorandum of the court's action stating, "Demurrer to complaint overruled; answer filed." There was no demurrer to the whole complaint. Held sufficient to admit parol proof showing the actual ruling of the court.

4. The court to which a cause was transferred on a charge of venue has jurisdiction after the expiration of the term in which the judgment was rendered to amend the record on motion for a nunc pro tunc entry on notice being served on the adverse party.

5. A motion to correct a judgment by a nunc pro tunc entry need not be filed before the notice of the motion is served on the adverse party, nor at any specified time preceding the date named in the notice for making the motion.

6. An employee of an interurban electric railway company, repairing its tracks, when carried to and from his work, or from point to point along the line in a car of the company, is not a passenger, but an employee, and a fellow servant of those in charge of the car.

7. Where the complaint in an action by an employee of a street railway company, repairing the tracks, to recover for injuries sustained while riding on a car, showed that when he was injured he was a fellow servant of the motorman in charge of the car, the allegation that the work in which the employee was engaged was not connected with the employment of the motorman, did not change the legal effect of the fact that he was at the time of the injury a fellow servant with the motorman.

8. Employers' Liability Act, March 4, 1893, p. 295, c. 130, Section 1 (Burns' Ann. St. 1901, Section 7083), providing that every railroad or other corporation shall be liable for damages for personal injuries suffered by an employee, where the injury was caused by the negligence of any employee having charge of any signal, telegraph office, "locomotive engine, or train upon a railroad," does not apply to employees operating electric cars, such a car not being a "locomotive engine" or a "train upon a railroad," within the meaning of the statute.

9. The complaint in an action by an employee of an electric railway company for injuries sustained while on a car of the company, which proceeds on the theory that the injury was caused by the negligence of a boy, whom the company had placed in charge of a switch, and which avers that the boy was inexperienced, and of insufficient age and discretion to be intrusted with such work, is insufficient for failing to aver that the employee had no knowledge of the incompetency of the boy prior to the injury.

10. Employers' Liability Act, March 4, 1893, p. 295, c. 130, Section 1 (Burns' Ann. St. 1901, Section 7083), providing that every railroad shall be liable for a personal injury suffered by an employee where the injury was caused by the negligence of any person in the employ of the company in charge of any signal, telegraph office, "switch yard, shop," etc., creates no liability for injuries to employees caused by negligence of persons in charge of a switch.

11. A complaint in an action for personal injuries sustained by an employee of a street railway company while riding on a car, which avers that the car was old and dangerous, which was known to the company and unknown to the employee, is defective for failing to show that the condition of the car was the proximate cause of the injury.—(Indianapolis & G. Rapid Transit Co. vs. Andis, 72 N. E. Rep., 145.)

IOWA.—Street Railroads—Collisions with Teams—Negligence—Instructions—Evidence—Bankruptcy—Suits by Bankrupt—Prosecution with Trustee's Consent.

1. In an action against a street railroad for injuries from a collision, instructions directing a verdict for defendant if plaintiff failed to prove freedom from contributory negligence, and enumerating the acts of negligence relied on in the petition, except that of failing to stop the car after the motorman saw plaintiff's danger, and charging that, if the jury failed to find any of the acts of negligence, their verdict would be for defendant, were inconsistent with a charge that, though plaintiff was negligent, yet defendant would be liable if its employees saw plaintiff, and knew of his perilous position, and failed to use ordinary care to prevent injury.

2. It is proper to submit defendant's theory of the case, although it is supported by the testimony of but one witness.

3. In an action against a street railroad for injuries from a collision, a charge that, if the motorman slowed up the car, expecting that plaintiff's team would pass in front, and thereupon noticed the team turn as if to pass behind the car, and believed that it was plaintiff's intention to pass behind the car, and moved the car forward to give plaintiff more room in which to pass, when plaintiff's horses became frightened and started suddenly in front of the car, and the accident occurred without defendant's negligence, the verdict should be for defendant, did not assume the facts recited therein, and was not erroneous.

4. Where a motorman observed, on moving the car forward, that a team of horses became frightened, and was undertaking to pass in front of the car, it was his duty to stop the car, if it could be done in the exercise of ordinary care, in time to avoid an injury.

5. In an action against a street railroad for injuries from a collision, municipal ordinances requiring employees of the railroad to use reasonable care to prevent injury, and to stop the car on the appearance of danger to any one near the track, and to use proper care to prevent injury to teams, state merely general rules of law, and are properly excluded from evidence.

6. Where, after a trial resulting in a verdict for defendant, plaintiff was adjudged a bankrupt, and his trustee substituted, plaintiff could, nevertheless, prosecute an appeal on the trustee's filing written consent thereto, and defendant had no ground of complaint.—(Christy et al. vs. Des Moines City Ry. Co., 102 N. W. Rep., 194.)

KENTUCKY.—Street Railroads—Crossing—Accident—Alighting Passenger—Instructions.

1. In an action against a street railroad for the death of a passenger who had alighted from a car and was run over by one of defendant's cars coming from the opposite direction, the plaintiff's proof tended to show that when the car struck deceased it was going at the rate of 15 or 18 miles an hour, and carried deceased across one street and 30 ft. beyond. Defendant's testimony was that deceased was carried only 30 or 35 ft., and its motorman testified that he saw deceased when within about 50 ft. of him, and that he appeared to be about to cross the track; that he noticed deceased halt as though he had determined to let the car pass; that witness turned on the power, but at that moment deceased went on the track, and that witness then used every effort to prevent the car from striking deceased, but failed. Held no error in refusing peremptory instruction for defendant.

2. A charge requested, which particularizes and gives undue prominence to facts proved, is properly refused.—(Louisville Ry. Co. vs. Hartman's Adm'r, 83 S. W. Rep., 570.)

MAINE.—Street Railroads—Injury to Passenger—Negligence—Evidence—Custom—Exceptions

1. When the evidence is conflicting, and the question of liability and damages is one that is peculiarly within the province of the jury, and the evidence does not convince the court that the jury were clearly wrong, a motion for a new trial will be overruled.

2. A requested instruction, although proper, may be rightfully refused when the presiding justice has covered the whole ground of the instruction in his charge. He is not required to give it again.

3. In an action against a street railway company to recover damages for personal injuries received by the plaintiff's intestate, testimony is admissible upon the question of the negligence of the defendant to show that it was the custom of the defendant to permit passengers to ride on the running board of its cars, although there was no claim that this custom was known to the plaintiff's intestate.

4. Exceptions do not lie to the exclusion by the court of photographs. It is in the discretion of the presiding justice to admit or exclude photographs.—(Stone vs. Lewiston, B. & B. St. Ry., 59 Atl. Rep., 56.)

MARYLAND.—Contributory Negligence—Question for Jury—Carriers—Injury to Passenger.

1. Where the nature of the act relied on to show contributory negligence can only be determined by considering all the circumstances attending the transaction, it is within the province of the jury to characterize it.

2. The question of contributory negligence will not be taken from the jury unless the conduct of the plaintiff relied on as amounting in law to contributory negligence is established by clear and uncontradicted evidence.

3. In an action for injuries to a passenger, evidence examined, and held, that whether plaintiff was guilty of contributory negligence was a question for the jury.—(Strauss vs. United Rys. & Electric Co. of Baltimore, 61 Atl. Rep., 137.)

MARYLAND.—Master and Servant—Master's Duty to Inspect — Sufficiency — Inspection — Evidence — Presumptions — Question for Jury.

1. Where, according to the custom of a street railroad company, a car, after arriving at the barns, was inspected about 2.30 in the morning, and then left to stand on a side track, unlighted and unguarded, for several hours, a servant was entitled to recover for injuries arising from a defective condition of the car, owing to such method of inspection.

2. Where, in an action for injuries to an employee of a street railroad company from a defect in a car, it appeared that the night before the car had been standing outdoors for several hours on a side track, it would be presumed, in the absence of evidence to the contrary, that the car was, while so standing, unlighted and unguarded.

3. In an action for injuries to a street car conductor from the giving way of a handhold on a car, held, a question for the jury whether the injury occurred to the handhold before plaintiff was assigned to the car, or after he was placed in charge of it.—(Crawford vs. United Railways & Electric Co., of Baltimore, 61 Atl. Rep., 287.)

MARYLAND.—Street Railroads—Injuries to Passengers While Alighting—Negligence—Contributory Negligence.

1. A street railway company discharging its passengers on its private way is bound to the utmost degree of care in procuring a safe place for the passengers to alight.

2. In an action against a street railway company for injuries to a passenger while alighting from a car on the company's private way, evidence examined, and held sufficient to show that the company was negligent in failing to provide a safe place for the passenger to alight.

3. The question of contributory negligence is for the jury, except in a case where the facts are undisputed, and where only one reasonable inference can be drawn therefrom.

4. Carriers of passengers are held to the exercise of the highest degree of care consistent with their undertaking, but passengers are required to exercise ordinary care only.

5. In determining the question of the contributory negligence of a passenger alighting from a street car on the company's private way, the fact of the conductor stopping the car for the passenger to alight must be considered.

6. On the issue whether a street car conductor invited a passenger to alight at a place where the car stopped on the company's private way, evidence held to show that the conductor invited the passenger to alight.

7. In an action against a street railway company for injuries sustained by a passenger while alighting from a car on the company's private way, evidence held not to show contributory negligence precluding a recovery.—(Topp vs. United Rys. & Electric Co., of Baltimore, 59 Atl. Rep., 52.)

MASSACHUSETTS.—Electric Street Railways—Negligence—Injuries to Driver of Vehicle—Contributory Negligence—Evidence—Sufficiency of.

In an action against an electric street railway for injuries to plaintiff, caused by one of defendant's cars running into the wagon plaintiff was driving, evidence examined, and held to justify the conclusion that plaintiff listened carefully for the approach of the car, and that his conduct showed due care.—(Shea vs. Lexington & B. St. Ry. Co., 74 N. E. Rep., 931.)

MASSACHUSETTS.—Master and Servant—Relationship of Parties — Sub-Contractor's Servants — Injuries — Assumed Risk —Contributory Negligence—Care Required—Release.

1. Where plaintiff was working on defendant's elevated railroad structure as an employee of a sub-contractor, he was a licensee to whom defendant owed the duty of using due care to prevent his being injured from exposure to unusual dangers, not known to him, that might be caused by the negligent running of defendant's surface cars beneath the platform where plaintiff was working.

2. Where plaintiff, an employee of a sub-contractor engaged at work on defendant's elevated railroad, was thrown from a platform by the trolley pole of a car as it passed under the platform, while the car was being operated around a curve at a high and unusual rate of speed, on a loose trolley wire, and it did not appear that plaintiff voluntarily exposed himself to such danger with a full appreciation thereof, whether he assumed the risk was for the jury, though he had knowledge of the existence of such danger.

3. Where plaintiff, an employee of a sub-contractor, was injured by the negligence of defendant's servants, he was not a fellow servant of the latter.

4. Where a servant of a sub-contractor of defendant railway company was injured while working on its elevated structure by the negligence of defendant's employees in operating a street car under the structure, plaintiff was not guilty of contributory negligence, as a matter of law, in placing himself in the position in which he was injured; his place to work having been furnished him by his employer.

5. The rule that a servant impliedly agrees to take things as he finds them, and assumes the ordinary dangers incident to the service, does not apply to or include concealed risks or subsequent negligence of the master.

6. A contract creating an exemption from liability for injuries caused to a servant by the master's negligence during the employment is in violation of Rev. Laws, c. 106, Sec. 16, and is unenforceable.

7. A contract for the construction of an elevated railroad, providing that defendant railroad company would not be responsible for any accident caused by the trolley, feed, or other wires to men or materials on or about the work in connection with the performance by the contractor of his work under the contract did not relieve the railroad company from liability to a servant of a sub-contractor for injuries caused by the negligent operation of a surface car under the elevated structure, by which the servant was knocked from a platform by the escape of a trolley from a loose wire.—(Wagner vs. Boston Elevated Ry. Co., 74 N. E. Rep., 919.)

MASSACHUSETTS.—Negligence—Dangerous Premises—Use—Invitation—Servants—Scope of Employment.

Where plaintiff, a policeman, was called by one of defendant's conductors to a discarded horse car, used for shelter only, for the ostensible purpose of arresting certain "crooks" as a mere joke on the policeman, and he was injured by reason of a defect in the platform as he boarded the car, the conductor's act was not within the scope of his authority, and defendant was not liable, though the act was performed on its premises.—(Berry vs. Boston Elevated Ry. Co., 74 N. E. Rep., 933.)

MASSACHUSETTS.—Street Railroads—Collisions—Injury to Traveler—Right of Traveler—Negligence—Contributory Negligence—Evidence—Questions for Jury.

1. An individual traveling on a street and a street car operated thereon have equal rights, except as modified by the fact that the car cannot leave the track; so that the individual must not unreasonably interfere with its progress.

2. A traveler on a street on which street cars are operated has the right to travel on any part of the street, but if the path he selects subjects him to the liability of being struck by a passing car he is bound to use reasonable care to avoid a collision, and he has the right to expect corresponding care on the part of the motormen in charge of the cars.

3. In an action by a traveler on a street for injuries sustained in a collision with a street car, evidence examined, and held, that the questions of defendant's negligence and plaintiff's contributory negligence were for the jury.—(Kerr vs. Boston Elevated Ry. Co.)

MASSACHUSETTS.—Elevated Railroads—Adjoining Property Owners—Damages—Elements—Frightening Horses—Instructions—Appeal—Exceptions—Waiver.

1. Exceptions not argued will be considered waived.

2. In an action by a property owner for damages caused by the operation of an elevated railroad, fright of horses caused by the operation of the railroad is not an element of damage, where it was an inconvenience of a general character, and was not confined to the horses of those having occasion to trade with the tenants of petitioner's property.

3. Where, in a proceeding to assess damages to complainant's property by the operation of an elevated railroad, the court charged that there was some testimony that sometimes the horses of customers of tenants of one of the buildings in question were frightened by the elevated trains, and that defendant was not liable for anything the horses did by reason of the running of such trains, defendant was not prejudiced by the refusal to charge that the fact that horses of customers of tenants might be or were frightened by elevated trains did not constitute an element of damages which could be considered by the jury as diminishing the value of petitioner's property.—(Swain et al. vs. Boston Elevated Ry. C., 74 N. E. Rep., 672.)

MASSACHUSETTS.—Master and Servant—Injury to Servant—Electric Lineman—Method of Work—Instructions—Assumption of Risk—Expert Evidence.

1. Plaintiff, a lineman in defendant's employ, was injured by being thrown from a pole by the recoil of a cable while lifting it from one insulator pin to another. In order to do the work, plaintiff stood on a tower wagon underneath the arm of the pole on which the cable rested, with one foot on a brace supporting the

arm, and the other foot on the rail attached to, but some two feet higher than, the platform of the tower wagon. The cable at that point was being strung on a sharp turn, and there was nothing to prevent plaintiff from releasing his grasp on the cable as it recoiled. Held that since the danger under such circumstances was open and obvious, defendant was not guilty of negligence in failing to instruct plaintiff with reference thereto.

2. Where a lineman was substantially familiar with the manner in which a cable was being raised and attached to the arms of posts at the time he was injured, and the method then employed to adjust the cable to the pole did not differ from that previously followed, he assumed the risk of injury from the use of such method.

3. Where a lineman was thrown from a pole by the recoil of a cable while he was lifting the same from one insulator pin to another, the process employed, being a matter of common observation and knowledge, was not a proper subject of expert testimony.—(Meehan vs. Holyoke St. Ry. Co., 72 N. E. Rep., 61.)

MASSACHUSETTS.—Street Railroads—Collisions With Teams — Negligence — Contributory Negligence — Vicarious Negligence—Question for Jury.

1. The right of one who has intrusted himself to the care of another, with whom he is driving, to recover for injuries caused by the negligence of a street car company, is dependent on the exercise of due care by his companion.

2. In an action for injuries to a person in a wagon, caused by collision with a street car, whether the driver of the team was in the exercise of due care, held under the evidence, a question for the jury.

3. In an action for injuries to a person in a wagon, caused by collision with a street car, whether the motorman of the car was guilty of gross negligence, within the meaning of Rev. Laws, c. 171, Section 2, authorizing a recovery for the death of a person caused by gross negligence, held under the evidence, a question for the jury.—(Evensen vs. Lexington & B. St. Ry. Co., 72 N. E. Rep., 355.)

MICHIGAN.—Street Railroads—Highways—Injuries to Travelers—Negligence—Contributory Negligence.

1. Where a railway track was laid in the street so that only 12 ft. and 7 ins. of driveway was left between the west rail and the curb, and the car by which plaintiff was injured projected 22¼ ins. beyond the track, defendant's motorman, approaching the vehicle in which plaintiff was riding from behind, and seeing other vehicles in such narrow space, and that plaintiff's horse appeared to be frightened, was bound to immediately bring his car under control, so far as it was possible for him to do so.

2. Plaintiff, a girl 15 years of age, was riding with her sister in a buggy drawn by a horse, ordinarily gentle, but which became frightened at the approach of a street car at a high rate of speed, causing dust and leaves to fly into the air. Plaintiff, who was obliged to act quickly, and not knowing the speed of the car or its exact distance from her, attempted to alight, to hold the horse by the head until the car passed, when the car struck her. Held that plaintiff was not guilty of contributory negligence, as a matter of law.—(McVean vs. Detroit United Ry., 101 N. W. Rep., 527.)

MICHIGAN.—Assault—Special Officers—Liability of Employer—Same—Presumption—Evidence.

1. Where a special deputy sheriff, paid by a street railroad company, acts solely in his capacity as an officer in assaulting a passenger, and not by the direction of the conductor in charge of the car, the street railway company is not liable for the act.

2. When a disorderly person is arrested by a police officer, the presumption is that the officer is acting in his official capacity, and not as an agent for the party who pays him.

3. In an action against a street railway company for an assault upon a passenger by a special deputy sheriff, who was paid by the company, and whose duty it was to ride upon the cars and prevent disturbances, the evidence showed that plaintiff had refused to pay his fare, that the conductor told him that if he did not pay he would put him off, and that the deputy then interfered, and in the course of the ensuing altercation struck plaintiff. It was not claimed that plaintiff was guilty of any breach of the peace; the only cause of the deputy's action being plaintiff's refusal to pay his fare. Held, that the action of the deputy in assaulting plaintiff was upon the express or implied request of the conductor, so that the street railway company was liable.—(Foster vs. Grand Rapids Ry. Co., 104 N. W. Rep., 380.)

MICHIGAN.—Carriers—Street Railroads—Injuries to Passengers—Evidence—Subsequent Conversations with Servant—Instructions.

1. Where, in an action for injuries to a passenger, the defendant sought to show that he was not seriously hurt, and there was evidence that his early complaint was confined to small injuries, and that he attended to his business, walked considerable distances, was not confined to the house, etc., it was error to charge that the defendant did not dispute that plaintiff's ribs were broken, and that his wrist was twisted, etc.

2. In an action for injuries, it was improper for the court to intimate in the charge that "plaintiff could best describe his injuries."

3. An instruction that the jury must believe the theory and evidence of one side or the other "right through" was objectionable, where the jury might properly have found with the plaintiff as to the incidents of the cause of action, and yet disbelieved his testimony as to the extent of his injuries.

4. In an action for injuries to a passenger, evidence of a conversation between the witness and the motorman some time after the injury was not admissible as substantive testimony.

5. In an action for injuries, it was prejudicial error for the court to say that the cause had been twice tried before, that some unfortunate remark or ruling had given the judge the idea that it should be tried again, and that "we would like get to the end of this case and * * * reach the just rights of the parties."—(Butler vs. Detroit, Y. & A. A. Ry., 101 N. W., Rep., 232.)

MISSOURI.—Street Railroads—Injuries to Property—Actions—Negligence — Willfulness — Joinder — Pleading — Demurrer —Objections—Waiver—Instructions.

1. Where a petition for injuries to plaintiff's horse and wagon by defendant's street car alleged that the injury was negligently, willfully, and carelessly done and inflicted, and that defendant's agents and employees willfully, carelessly, and intentionally ran the car upon plaintiff's horse and wagon, etc., the petition was demurrable for improper joinder of causes of action, as provided by Rev. St. 1899, Section 598, since negligence and willfulness cannot concur in a single act, and evidence tending to show one would disprove the other.

2. Under the express provisions of Rev. St. 1899, Section 602, where defendant joined issue and proceeded to trial without objecting to the petition on the ground of misjoinder of causes of action, the objection was waived.

3. A sole instruction for plaintiff that, if the jury found the issues for him, they should consider, in estimating his damages, such injury as he sustained in the striking of his horse and wagon by defendant's car, and the expense he necessarily incurred in repairing the wagon, if the injury was inflicted, not exceeding the sum sued for, was defective, in failing to indicate the issues in the case, or specify the facts necessary to warrant a verdict for plaintiff.—(Boyd vs. St. Louis Transit Co., 83 S. W. Rep., 287.)

MISSOURI.—Street Railroads—Indignities to Passenger—Damages—Excessiveness.

Where a conductor of a street car declined to accept from a passenger a transfer check, and demanded fare, and forcibly resisted his efforts to leave the car, detaining him while the car journeyed several miles, and threatening to take him to a police station, though he explained the conditions under which he received the check from a conductor on another line, a verdict for $25 compensatory damages, and $500 for punitive damages was not so excessive as to warrant the court on appeal in interfering with the refusal of the trial court to set it aside.—(Mueller vs. St. Louis Transit Co., 83 S. W. Rep., 270.)

MISSOURI.—Street Railroads—Injury at Crossings—Evidence—Instructions—Petition—Sufficiency.

1. A petition in an action against a street railway company for injuries sustained in a collision on the company's tracks, alleging that a car was negligently caused to run into his vehicle, is insufficient as against a motion to require the specific acts or omissions constituting the negligence complained of to be set forth.

2. Where, in an action against a street railway company for a collision with a car at a crossing, the evidence showed negligence in the running of the car at excessive speed, in the failure to sound the bell or to attempt to stop the car after discovering the danger, instructions authorizing a verdict for plaintiff on a finding that the car was negligently run against his vehicle, and stating that it was the duty of the motorman to exercise ordinary care, and any failure to do so constituted negligence warranting a recovery unless plaintiff was negligent, were erroneous, because not restricting the jury to the acts of negligence shown by the proof.—(Sommers vs. St. Louis Transit Co., 83 S. W. Rep., 268.)

MISSOURI.—Carriers—Injuries to Passengers—Damages—Future Sufferings—Earnings—Instruction.

1. In an action for personal injuries, an instruction authorizing damages for pain of body and mind that plaintiff had suffered or would suffer by reason of her injury, and directly caused thereby, etc., was not objectionable as authorizing an award for future suffering without requiring the jury first to find that plaintiff would suffer pain in the future.

2. Where, in an action for personal injuries, there was evidence that plaintiff would be disabled in the future, and he testified that his foot still hurt him, and that he could not use it like the other, which condition interfered with his getting employment, it was

proper to permit a recovery for loss of future earnings.—(McCarthy vs. St. Louis Transit Company, 83 S. W. Rep., 298.)

MISSOURI.—Street Railways—Collision with Team—Negligence—Contributory Negligence—Medical Attendance—Instruction.

1. One who in the nighttime drove along a street railway track when he could as well drive to the side of it, having looked back a minute before he was struck by a car from the rear, and seen no car, was not guilty of such negligence as to authorize the court to say as matter of law that he could not recover.

2. It is not enough for an instruction, in an action for injuries from a street car running into a team which was going along the track, to state the duties of the persons in charge of the car and the team, without stating the legal consequences of a neglect of duty by either party.

3. It cannot be said that there was no evidence warranting the jury in finding that the motorman of a street car, by keeping a sharp lookout, would not have seen a team going along the track in time to have avoided a collision, where the conductor testified that the headlight of the car threw its rays forward twice the length of the court room.

4. An instruction that if plaintiff, driving along a street car track, knew, or by ordinary care might have known, of the approach of the car in time to have avoided the collision, he could not recover, unless the motorman knew, or by ordinary care might have known, of plaintiff's danger in time to have averted the collision, and negligently failed to do so, is erroneous in authorizing recovery under such condition.

5. An instruction, in personal injury case, authorizing recovery for medical attendance, in the absence of evidence that plaintiff paid or was obliged to pay for any such attendance, is erroneous.—(Kimble vs. St. Louis & S. Ry. Co., 82 S. W. Rep., 1096.)

MISSOURI.—Street Railways—Wrongful Arrest of Passengers—Liability of Company—Act of Conductor—Authority—Malicious Prosecution—Instructions—Evidence—Express Malice—Harmless Error.

1. A street railway conductor demanded a second fare from a passenger, who refused to pay or get off. Later the passenger attempted to alight, but was prevented by the conductor, who called a police officer, in the car, to arrest the passenger. The officer refused unless the conductor would prefer a charge, which he agreed to do. When the car reached a police station, the conductor went to it, and made a formal charge of disorderly conduct against plaintiff, who was tried and acquitted. Held, that the charge was made by the conductor while in the discharge of his duties, making the company liable for malicious prosecution.

2. Though Rev. St., 1899, Secs. 1074, 1163, only authorize a street railway conductor in charge of a car to eject a passenger for refusing to pay fare, for disorderly conduct, etc., a conductor can call on a police officer to arrest a passenger, when necessary for the protection of other passengers, and the company is liable to a passenger wrongfully arrested on charges preferred by the conductor while acting within the scope of his authority.

3. Where a street railway company was liable to a passenger wrongfully arrested on charges preferred by a conductor, error in admitting evidence that the company ratified the conductor's act was harmless.

4. An instruction which refers to the petition for the purpose of identifying a thing about which an issue was raised is not open to the objection that it refers the jury to the petition to ascertain what the issues are.

5. Where the servant of a corporation acts maliciously when acting within the scope of his authority, the corporation is chargeable with malice.

6. An instruction in an action for malicious prosecution authorizing the jury to assess the damages in such sum as will compensate plaintiff for "any shame, mortification, mental anguish and pain, and injury to feelings," is not open to the objection that it authorizes a recovery for physical pain.

7. Where, in an action for malicious prosecution, the evidence shows that, without any cause, plaintiff was arrested, charged with an offense, and forced to undergo a trial, express malice is shown.—(Dwyer vs. St. Louis Transit Co., 83 S. W. Rep., 303.)

MISSOURI.—Injuries to Passenger—Damages—Expense of Medical Treatment—Instructions—Punitive Damages—Conduct of Counsel—Exceptions.

1. Where, in a personal injury action, the jury awarded compensatory damages only, an error in an instruction as to punitive damages was not prejudicial to defendant.

2. Where, in a personal injury action, the petition alleged that plaintiff had been compelled to expend money for medical treatment, and the evidence admitted without objection showed that he had only incurred an obligation for the treatment, it was not error to instruct that the jury might include in the damages expenses incurred for medical treatment, as the petition could have been amended if an objection to the testimony had been made.

3. The course of the trial court when statements of an attorney in argument are objected to is largely one of discretion, so that it is necessary to direct the court's attention to the language complained of, and to an exception to the court's action, in order to obtain a review thereof.—(Spengler vs. St. Louis Transit Co., 83 S. W. Rep., 312.)

NEW JERSEY.—Carriers—Injury to Passenger—Negligence of Motorman.

1. It is not sufficient evidence of negligence in the motorman of an electric street railway, when about to start or to increase the motion of a heavily loaded passenger car, that he turned on the power and released his brake so as to cause a passenger standing on the front platform to "swing to the side a little bit," or "fall a little to the side." From such a result alone the jury cannot reasonably and legitimately infer negligence of car operation against the carrier.

2. The actual management of the car in such cases, not the resultant effects, should determine the question of the carrier's negligence.

(Syllabus by the court.)—(Faul vs. North Jersey St. Ry. Co., 59 Atl. Rep., 148.)

NEW YORK.—Appeal—Reversal—Weight of Evidence—Carriers—Passengers—Authority of Employee—Questions for Jury.

1. Where the number of defendant's witnesses exceeds those of plaintiff, and common knowledge and experience show no inherent probability in the version given by either, the verdict for plaintiff will not be disturbed as against the weight of the evidence.

2. Where a newsboy boarded a street car to sell papers without intending to become a passenger by paying his fare or traveling to any particular point, he was not entitled to the rights of a passenger.

3. In an action for injuries sustained in being ejected from a moving street car, where it appeared that plaintiff boarded the car to sell papers without intention of becoming a passenger, and was ejected by the motorman, who lunged for him the moment he discovered him, without inquiring whether he was a passenger, or ordering him inside or off, it was a question of fact for the jury whether the motorman was acting within the scope of his authority; and, if he was not, the defendant was not liable. Patterson, J., dissenting.—(Barry vs. Union Ry. Co., of ..ew York, 94 N. Y. Sup., 449.)

NEW YORK.—Street Railroads—Operation—Injury to Passenger—Instructions.

An instruction, in an action against a street railway company for injuries to a passenger while alighting from a car, that the company was bound to carry passengers safely and to use the utmost care and skill of a cautious person in doing so, was erroneous.—(Atkins vs. New York City Ry. Co., 94 N. Y. Sup., 500.)

NEW YORK.—Street Railroads—Operation of Cars—Control of Passengers—Assault by Conductor—Evidence.

1. Where the seats of a street car are occupied and a passenger is obliged to stand on the running board, the conductor has no right to compel the passenger to change his position so as not to stand in front of a particular passenger.

2. Evidence in an action against a street railway company for an assault committed by its conductor on a passenger examined, and held not sufficient to support a verdict for the passenger.—(Guariello vs. Union Ry. Co. of New York City, 94 N. Y. Sup., 538.)

NEW YORK.—Street Railroads—Actions for Injuries—Pleading—Admissions—Injuries to Pedestrians—Contributory Negligence.

1. Where an answer to a complaint against a street railroad for injuries denies that defendant's car injured plaintiff, an admission of the answer that defendant operated "certain" cars on different thoroughfares, including that where the accident happened, is not an admission that it was defendant's car which caused the injury, and does not excuse plaintiff from showing that the car which injured him was owned, operated, or controlled by defendant.

2. One who stands on a street car track, with knowledge that a car is rapidly approaching, and without taking any precaution to avert injury to himself, is guilty of contributory negligence.—(Gargano vs. Forty-Second St., M. & St. N. Ave. Ry. Co., 94 N. Y. Sup., 544.)

NEW YORK.—Injury to Employee—Question for Jury—Negligence of Superintendent.

1. Where there is evidence that plaintiff's decedent, when last seen, was about to make a coupling betwen a car and an engine;

that no one saw him come out; that the coupling was made, and that his body was found at about the place where it was made—the time when and the manner in which the accident happened to him through alleged negligence of defendant railroad company in starting its train is a question for the jury.

2. Where one, in the absence of the regular train despatcher, had been accustomed for three years to perform his duties, his act in starting a train while plaintiff's decedent was coupling or attempting to withdraw to a place of safety was not a mere detail of work, under the employers' liability act (laws 1902, page 1748, chap. 600, sec. 1), but that of a superintendent, for whose negligence the railway would be liable.)—(McHugh vs. Manhattan Ry. Co., 72 N. E. Rep., 312.)

NEW YORK.—Carriers—Injury to Passenger—Instructions—Taking Question from Jury—Instructions.

I. Where, in an action against a street railroad company for injuries to a passenger, neither negligence nor contributory negligence appeared as a matter of law, an instruction that if the motorman started the car with a sudden jerk while plaintiff was attempting to board the same, and plaintiff was injured thereby, the verdict should be for the plaintiff, was erroneous, as taking negligence and contributory negligence from the jury.

2. In an action against a street railroad company for injuries to a passenger, owing to the alleged negligence of the motorman in starting the car while plaintiff was boarding it, an instruction in effect characterizing the motorman's conduct as negligence was erroneous.—(Ward vs. Metropolitan St. Ry. Co., 90 N. Y. Sup., 897.)

NEW YORK.—Street Railroad—Personal Injury—Collision—Questions for Jury—Contributory Negligence—Imputed Negligence.

1. In an action against a street railroad for personal injuries received in a collision between a wagon in which plaintiff was riding and one of defendant's cars, alleged to have resulted from the negligence of defendant's motorman, the act of the defendant in permitting the case to go to the jury without objection at the close of the case is a tacit concession of the sufficiency of the evidence to require a submission to the jury of the questions of the motorman's negligence and the plaintiff's contributory negligence.

2. In an action against a street railroad company for injuries received in a collision between a wagon in which plaintiff was riding and one of defendant's cars, alleged to have resulted from the negligence of the defendant's motorman, it appeared that the plaintiff was riding gratuitously in the wagon at the time of the collision, on the invitation of the driver, who was also its owner. The driver was engaged in the business of carting ice for the plaintiff and his customers and others, and it did not appear that plaintiff did or was authorized to exercise any control over the wagon. Held, that the driver was not a servant of plaintiff, and hence the negligence of the driver could not be imputed to plaintiff.—(Scarangello vs. Interurban St. Ry. Co., 90 N. Y. Sup., 430.)

NEW YORK.—Street Railroads—Persons on Track—Infants—Death—Negligence—Question for Jury—Infants—Non Sui Juris—Negligence of Parents.

1. In an action for death of an infant six years of age while crossing a street railway track, evidence reviewed, and held to require submission to the jury of the question whether defendant's driver saw, or by exercise of due care could have seen, deceased on the track, or about to cross, in time to have stopped the car or to have avoided the accident.

2. Where decedent was only six years of age at the time he sustained injuries in a collision with a street car, from which he died, it will be presumed, in the absence of evidence to the contrary, that he was non sui juris, and could not, therefore, be guilty of contributory negligence.

3. Decedent's mother on the afternoon of his death accompanied her three children to a park, and permitted decedent to accompany his older brother and play with other boys within the park, but cautioned them not to go near East River, which was adjacent thereto. The boys disappeared from her view in the park, and went near the river, and, in returning, decedent was killed while crossing a street car track. Held, that decedent's mother was not guilty of contributory negligence, as a matter of law, in not exercising proper care for the safety of the child.

Van Brunt, P. J., dissenting.—(Kaplan vs. Metropolitan St. Ry. Co., 90 N. Y. Sup., 585.)

NEW YORK.—Street Railroads—Persons on Track—Children—Death—Negligence—Contributory Negligence—Non Sui Juris.

1. In an action against a street railway company for the killing of a child, evidence reviewed, and held to require submission of the question of defendant's negligence to the jury.

2. A child nine years and three months of age, killed while crossing a street railway track by being struck by a car, is only required to use such care for his own safety as is usual in children of his age when playing in the streets under similar circumstances.

3. In an action for the death of a child nine years and three months of age, while playing in the street, by being struck by a street car, plaintiff is entitled to the presumption that the child was non sui juris.

Jenks, J., dissenting.—(Dempsey vs. Brooklyn Heights R. Co., 90 N. Y. Sup., 639.)

NORTH CAROLINA.—Railroads—Animals—Care Required—Street Railroad—Killing Dog—Liability.

1. A dog is not within code, sec. 2326, making the killing of any cattle or other livestock by its engine or cars prima facie evidence of negligence on the part of the railroad company.

2. A dog is a species of property for an injury to which an action at law may be sustained.

3. A dog, in respect to the care which locomotive engineers owe to them and their owners, is on the same footing with that of a man walking on or near a railroad track, and the engineer is warranted in acting on the belief that the dog will get out of the way, where the dog is apparently in the possession of his faculties.

4. A street railway company, when its cars are properly equipped, is not liable in damages for the killing of a dog by one of its cars, unless the killing was done under such circumstances as to justify the conclusion that it was either willful, wanton, or reckless.

5. In an action against a street railway company for damages for the killing of plaintiff's dog, which was run over by a car, it was error to permit plaintiff to testify that he had measured the fenders on one of defendant's cars, and found it 25 ins. from the track, and that he saw several fenders that were about the same height.

6. In an action against a street railway company for damages for the killing of plaintiff's dog, which was run over by a car, it was error to receive the testimony of plaintiff that there were several different kinds of fenders on the cars, and that those on the big cars were different from those on the little ones, and that a little car killed the dog.—(Moore vs. Charlotte Electric Ry., Light & Power Co., 48 S. W. Rep., 822.)

RHODE ISLAND.—Street Railroads—Personal Injuries—Person on Track—Negligence—Degree of Care—Contributory Negligence—Intoxication.

1. The operation of an electric car in the country at such a rate of speed that the motorman was unable to stop it in time to avoid injury after the headlight revealed plaintiff's intestate crawling toward the car on his hands and knees between the rails, was not negligence.

2. Where plaintiff's intestate was struck and killed by defendant's street car while he was crawling toward the car on his hands and knees between the rails at a point where the car was visible at a distance of 800 ft., his contributory negligence was a bar to recovery.

3. Intoxication does not relieve a man from the degree of care required of a sober man in the same circumstances.—(Vizacchero vs. Rhode Island Co., 59 Atl. Rep., 105.)

WASHINGTON.—Street Railroads—Injury to Passenger—Intoxication—Instruction—Action by Community—Award of Compensation for Wife's Nursing—Verdict—Conflicting Evidence.

1. As it is the province of the jury to determine the weight and credibility of testimony, the court on appeal will not, as a general rule, set aside a verdict where there is substantial conflict in the evidence, especially where the trial court, who heard and saw the witnesses, has declined to interfere.

2. In an action against a street railway company for injuries to a passenger who was thrown from the running board, where he was riding, the court charged that intoxication was not negligence, and that, if plaintiff used that degree of care incumbent on him "under the circumstances," his intoxication would not prevent a recovery; that defendant, in order to prove contributory negligence, must show that the passenger did not exercise ordinary care, without reference to his intoxication, as the question was not whether he was intoxicated, but whether he exercised ordinary care; and that if the passenger was intoxicated, and in a place of danger, and the company's motorman knew it, the motorman was bound to exercise more care. Held not erroneous, as eliminating the question of the passenger's intoxication, or as imposing on the passenger, if intoxicated, the duty of using only the care required of intoxicated persons.

3. Where, in an action by the community for personal injuries sustained by the husband, there is no evidence of the value of the services of the wife in nursing the husband, the jury cannot award any compensation therefor, even if a recoverable item.—(Lawson et ux. vs. Seattle & R. Ry. Co., 76 Pac. Rep., 71.)

FINANCIAL INTELLIGENCE

Wall Street, Oct. 11, 1905.

The Money Market

All branches of the money market developed decided firmness this week, rates for all maturities advancing to the highest figure recorded thus far this year. The principal influences have been the active demand for funds at all of the principal interior points, and the heavy losses in cash sustained by the local banks in the interior movement and in their operations with the sub-treasury. For the week ending Oct. 6 the shipment of funds to the West and South for crop-moving purposes amounted to more than $10,000,000, and there is every reason to believe that the outflow of funds will continue heavy for some weeks to come. Additional engagements of gold in the London market for import to this country have been announced during the week, but the amount of gold obtainable in that market is limited, and is not sufficient to have the slightest influence upon rates. The engagements of the yellow metal to date amount to about $9,500,000, most of which has been received. Foreign exchange has ruled firm, around 4.8540 for prime demand sterling, despite the strength in the money market, the explanation for this being the unusually light movement of cotton at this season of the year. The bank statement, published a week ago, showed a loss in cash of $8,454,700, or nearly a million dollars more than was generally expected. Loans decreased $11,889,400, as a result of the shifting of loans to the trust companies. Deposits decreased $21,203,400. The surplus reserve decreased $3,153,850 to $4,286,175, as compared with $12,636,900 in the corresponding week last year, $16,577,125 in 1903, $1,527,350 in 1902, $17,483,175 in 1901, and $4,463,025 in 1900. The European markets have ruled firmer, especially at London, where discounts and money rates have displayed a decided upward tendency. In the local market call money loaned as high as 8 per cent and as low as 3 per cent, the average for the week being about 6 per cent. Time loans are quoted at 5¼ per cent for sixty days, 5 per cent for ninety days, 4¾ for four months and 4½ per cent for six months. Practically all of the transactions were made at these figures. At the close the market displayed a firm tone, and, according to leading bankers, the present rates are likely to be maintained for some time to come.

The Stock Market

Monetary conditions have largely governed the stock market the past week, but the chief effect of the advance in the call-loan rate on the Stock Exchange to 8 per cent, the highest figure of the year, has been more to restrict the volume of business than to bring about any material reaction in prices; as a matter of fact, at those periods when money rates were the firmest, security values tended to a higher range, showing conclusively that there was no fear of a stringency in the money market, such as has been talked of for some time past. It is another noteworthy fact that when the rate for call loans eased off from the high figure noted, prices for stocks did likewise. The explanation for this, however, is found rather in the present low state of our bank reserve, as disclosed by the statement issued on Saturday last. Another explanation for the reactionary tendency was the selling of stocks bought to protect values during the period of firmer money. These stocks, however, found ready takers, and in consequence the market, toward the close, not only recovered from its temporary depression, but also moved to a higher level for many shares than that reached earlier in the week. There was no great accession of outside buying, but purchases were freely made for insiders and professionals, the chief incentives being contained in the development of the long-promised melon-cutting by the Great Northern Railway, and the publication of the Government crop report, as of October 1, indicating among other things a probable yield of corn of 2,700,000,000 bushels, a record-breaking out-turn in the history of the country. Additional incentives were supplied in the way of some very gratifying reports of railway earnings for the fiscal year and other periods, the declaration of regular dividends by several railroad and industrial corporations, as well as by the inauguration of profit distribution in at least one case, that of the United States Cast Iron Pipe Company, which declared 1 per cent on its common stock. Other factors operating in the same direction were the continued unprecedented prosperity in the iron and steel trade, the pronounced strength in the copper metal industry, the reports of car shortage, not only among the Western lines, but also those in the anthracite and bituminous coal fields, indicating enormous traffic in all these lines, and further general improvement in practically all lines of trade. Noteworthy features of the speculation during the week have been the so-called Northern Securities group, the Gould issues, which were benefited by the signal victory of the present management of the Wabash over the Ramsey faction; Erie, which derived strength from the very favorable annual report; the railroad equipment stocks, which were aided materially by the enormous orders all of these concerns are receiving; the United States Steel shares, for reasons already noted, and the Southern railroad stocks, in response to the general prosperity of that section of the company.

Pronounced strength, and at times exceptional activity, characterized the market for the local traction issues. One reason for this, and a very potent one, was the realization that the movement for municipal ownership in Greater New York would prove even a greater fizzle than it did in Chicago, and that the present dominant political power would be perpetuated in office at the coming election. The statement of earnings of the Metropolitan Street Railway system for the quarter and fiscal year were made public during the week, and while the showing was unfavorable, it had no effect upon the securities, partly for the reasons above stated, but more particularly, perhaps, on account of the fact that the causes which operated to bring about the decreased earnings in the periods referred to are known not to exist at present.

Philadelphia

Moderate activity developed in the local traction stocks during the week, and although prices displayed more or less irregularity, the general tendency was toward a lower level. Interest centered largely in the speculative group, of which Philadelphia Company common was the feature, both as to activity and firmness. Opening at 48¾ the price ran off to 48¼, but subsequently the price advanced to 49 on heavy buying, and maintained nearly all of the advance. Nearly 20,000 shares of the stock were traded in. Very little interest was manifest in the preferred stock, of which about 300 shares changed hands at from 48½ to 49. Philadelphia Rapid Transit was under pressure nearly all of the week, the price fluctuating between 28⅜ and 27¾, closing at the lowest. Upward of 5000 shares were dealt in. Consolidated Traction of New Jersey held firm, with sales of about 300 shares at 83¼ and 83, and about 350 Union Traction brought 62¼ and 62⅞. Philadelphia Traction was very quiet and steady, upwards of 300 shares selling at from 100¼ to 100. In the lower priced issues American Railway was a prominent feature, about 300 shares selling at 53 to 52½ regular, while a block of 800 shares brought 52⅞ for cash. Railways General sold at 3⅞ and 4, and Fairmount Park Transportation brought 17. Rochester Railway & Light advanced 3 points to 96, on the purchase of about 100 shares. Other transactions included 400 Fort Wayne Traction at 21, 100 Union Passenger Railway at 241, and 300 Union Traction of Indianapolis at 32½ and 32¼.

Baltimore

Extreme dullness prevailed in the Baltimore market, and apart from a loss of ¾ in the price of United Railway free incomes to 65½ on the exchange of about $85,000 bonds, price changes were insignificant. United Railway 4s held steady, about $60,000 changing hands at 93¼ and 93, while $2,000 certificates for incomes deposited brought 66. A small amount of deposited stock brought 16½. North Baltimore Traction 5s were more active, $10,000 selling at 121½ and 121¾. Norfolk Railway & Light 5s sold at 94¾ and 96 for $9,000. Other transactions included $8,000 Lexington Street Railway 5s at 106, $4,000 Macon Railway & Light 5s at 99½ and 99¾, $2,000 Ausgusta Street Railway 5s at 104½, $6,000 City & Suburban 5s at 114¾, $1,000 Toledo Electric Railway 5s at 101⅛, and $1,000 Washington City & Suburban 5s at 105½.

Other Traction Securities

Trading in the Chicago market was light, and was accompanied by rather violent price fluctuations. North Chicago Railway broke from 85 to 81 on the sale of 530 shares, while West Chicago declined 3 points to 60 on the exchange of twenty shares. Chicago Union Traction sold at 13½ for twenty-five shares. Metropolitan Elevated common sold at 25¼, and seventy-five shares of the preferred brought 72 and 70. South Side Elevated held firm at 97½

and 97, about 600 shares changing hands at those prices. Other sales were 250 Northwestern Elevated at 23 and 23¼, thirty-one shares of the preferred at 62⅝ and 63, ten shares of Chicago & Oak Park at 5¼, and a small lot of the preferred at 18. The Boston market was dull and generally lower. Boston & Worcester sold at 28¾ and 28 for sixty shares, and ten shares of the preferred sold at 73. Massachusetts Electric, at the opening, declined from 14 to 13, but subsequently there was an advance to 14½. About 550 shares were dealt in. The preferred was weak, 275 shares changing hands at from 59 to 57. Boston Elevated lost a point to 153, on sales aggregating ninety-two shares. West End common ran off from 99½ to 98¼, and the preferred sold at 113¾ and 113½. The 4s of 1917 sold at 103½ for $2,000. Interborough Rapid Transit was active and strong on the New York curb market, over 7000 shares selling at prices ranging from 210 to 213¾, and closing at 213½. American Light & Traction rose from 104 to 106⅛, on the purchase of 214 shares. New Orleans Railway brought 36 and 36½ for 800 shares, and a small lot of the preferred brought 78. Washington Railway sold at 43¼ for 100 shares, and 500 shares of the preferred 93¼ and 90½. The 4s sold at 91½ for $2,000, and $27,000 New Orleans Street Railway 4½s sold at from 90¼ down to 88½ and back to 90.

Cincinnati, Newport & Covington was active at Cincinnati, about 1500 shares of the common selling up from 39½ to 40¾. The preferred made a fractional decline to 95⅞. Cincinnati Street Railway sold at 147, Cincinnati, Dayton & Toledo at 25, and Toledo Railways at 35. Cleveland Electric was very active in Cleveland. This was due to several rumors, one that the stock would be placed on a 5 per cent dividend basis the first of the year, and another, that the Vanderbilt interests, which are working hand in hand with Horace Andrews in central New York, had acquired heavy holdings in the company. Officials of the company declined to verify either of these reports. The stock advanced from 81 to 86, but early this week it fell back to 82½. Aurora, Elgin & Chicago had another upward movement reports of phenomenal earnings. It opened the week at 29¾, and advanced to 32, a new high mark for this year. The preferred advanced to 87½. There is talk of refinancing this company, issuing second mortgage bonds to retire the preferred stock and pay off accumulated dividends and floating debt. Cleveland & Southwestern common made a fractional advance to 14¼, while the preferred sold for 60; the property is showing fine increase in earnings. Northern Ohio Traction & Light sold at 24½, and Lake Shore Electric common at 13¾, both slight advances.

Security Quotations

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

	Oct. 4	Oct. 11
American Railways	53	52½
Boston Elevated	153	152
Brooklyn Rapid Transit	72¼	71⅝
Chicago City	—	199
Chicago Union Traction (common)	12⅝	12⅝
Chicago Union Traction (preferred)	—	—
Cleveland Electric	78	75
Consolidated Traction of New Jersey	82½	82½
Consolidated Traction of New Jersey 5s	109	109
Detroit United	93½	93⅛
Interborough Rapid Transit	212	212½
International Traction (common)	34	39
International Traction (preferred) 4s	73	74½
Manhattan Railway	165⅝	167
Massachusetts Electric Cos. (common)	14	14
Massachusetts Electric Cos. (preferred)	57½	57
Metropolitan Elevated, Chicago (common)	25¼	25
Metropolitan Elevated, Chicago (preferred)	71	71¾
Metropolitan Street	126¼	127
Metropolitan Securities	80⅝	81⅝
New Orleans Railways (common), W. I.	36	36
New Orleans Railways (preferred), W. I.	78	79
New Orleans Railways, 4½s	90	89
North American	98	98
North Jersey Street Railway	28	28
Philadelphia Company (common)	48	48⅞
Philadelphia Rapid Transit	28	27¾
Philadelphia Traction	100⅛	100
Public Service Corporation 5 per cent notes	97	97
Public Service Corporation certificates	69½	69
South Side Elevated (Chicago)	97	97
Third Avenue	126½	127
Twin City, Minneapolis (common)	118½	117¼
Union Traction (Philadelphia)	62¼	62
West End (common)	99	98½
West End (preferred)	113¼	113

W. I., when issued.

Iron and Steel

According to the "Iron Age" the production of pig iron for the month of September was 1,898,873 gross tons, against 1,843,673 tons in August and 1,741,935 tons in July. Returns from all the steel companies make their pig iron production 1,262,033 in September, against 1,186,050 tons in August, an increase in spite of the fact that the Pittsburg district produced only 449,632 tons in September as compared with 488,119 tons in August. The capacity at work has increased in September, and stood on October 1 at 445,468 tons per week, as contrasted with 412,563 tons on September 1. There is promise, therefore, of an increased production, which the country needs so sorely. There has been a good deal of buoyancy in the pig iron market in all parts of the country, and prices have further advanced. Some further goodly orders have come to the rail mills. A good deal of business is pending in bridge material, fully 60,000 tons being under negotiation. The higher lines are active and in good shape.

CONSOLIDATED RAILWAY GETS ANOTHER CONNECTICUT PROPERTY

The Willimantic Traction Company's property has been sold to the Consolidated Railway Company, acting for the New York, New Haven & Hartford Railroad. The monetary consideration is not large, but the sale is important because it gives control to the Consolidated of the last of the series of lines extending from the heart of Connecticut to the coast at New London. The Willimantic line runs from Willimantic to Baltic. There it connects with the line of the Consolidated Company operated to Norwich, which line in turn connects with the New London Street Railway for New London and the shore. The plan of the Willimantic Company under separate ownership was to build from Willimantic in a direction opposite to Baltic to Manchester. At the latter place connection would be made with the electric line between Manchester and Hartford, and so a line could be completed between Hartford and New London. A charter to build this extension had been obtained by the Willimantic Company. Whether or not the line will now be built is a matter of speculation, as the extension by making a through line by trolley from Willimantic to Hartford would parallel the New York, New Haven & Hartford Company's lines between the two places, with uncertain results to the latter.

WIDENER-ELKINS RUMORS OFFICIALLY DISCUSSED BY W. KESLEY SCHOEPF

Presumably with a view to setting to rest erroneous statements that have been circulated regarding the plans of the Elkins-Widener syndicate, W. Kesley Schoepf, of the Cincinnati Traction Company, submitted a few days ago to a lengthy interview by the daily press. To start with, Mr. Schoepf said there is no such thing as the "Widener-Elkins" syndicate, so far as the general proposition of building through systems in Ohio and Indiana is concerned. He said Messrs. Widener and Elkins are interested in the Cincinnati Traction Company, but not in the Indiana properties. These properties, as well as the Ohio lines just purchased, are owned by Messrs. Dolan, Morgan, McGowan, Schoepf and Irwin & Company, of Philadelphia. He denied that there is any connection between these interests and the Standard Oil Company, as had been intimated in recent newspaper stories. He also denied that negotiations are on for the purchase or lease of the Cincinnati, Newport & Covington Traction Company, and said his interests have no connection with Chandler & Jones, of Philadelphia, who recently purchased interurban and city properties in central Kentucky. Relative to the proposed lease of the Toledo, Bowling Green & Southern Traction Company, Mr. Schoepf said the matter is in *status quo,* because of some detail in connection with the bonds of that company. No deal is on for the purchase of the Appleyard properties, but he is of the opinion that his interests may make a bid for these lines if they are put up for sale. No negotiations are on for the purchase of the Dayton & Troy and Western Ohio properties, as has been reported. He said that the car builders' combine, which is to include the Cincinnati Car Company, one of the properties with which he is connected, is progressing smoothly, so far as he knew.

CHICAGO EXTENSION ORDINANCE GOES TO COUNCIL—A SUMMARY OF ITS PROVISIONS

The franchise extension ordinance of the Chicago City Railway Company was formally presented to the City Council Wednesday evening, Oct. 4. The ordinance of the Union Traction Company was to have been presented on Monday. The two differ in details, only where conditions affecting the two companies vary. While the Chicago City Company was able to present its ordinance, it was unable to give with it the maps showing the rearrangement of the downtown loops, and, more important than this, the through routeing of cars from one division of the city to another. The ordinance is along the lines previously referred to in the STREET RAILWAY JOURNAL and outlined in the issue of Oct. 7. The document contains some 30 sections, a careful digest of which follows:

Sec. 1. Twenty-year franchise, providing that city may purchase at any time after three years.

Sec. 2. Company shall reconstruct tracks and roadbed.

Sec. 3. Company shall use overhead trolleys, except on Clark and State Streets and downtown loops, north of Polk Street, where underground trolleys shall be used if found feasible after test on State Street.

Sec. 4. Specifications for poles and trolley wires.

Sec. 5. City can use company's poles to carry its wires and electric lights.

Sec. 6. Company may rent partial use of its poles to telephone, telegraph and electric lighting companies.

Sec. 7. All of company's feeder wires in central portion of city shall be laid underground and same rule shall apply to all feeders carrying over 1000 volts in all parts of city.

Sec. 8. All electrical work must be done subject to city electrician, and all other work according to orders of commissioner of public works.

Sec. 9. All new track construction in well-paved streets shall include the grooved rail.

Sec. 10. Company shall fill, grade, pave, keep in repair, sweep, sprinkle and keep clean its right of way, removing snow and ice in winter. Specifications of pavement.

Sec. 11. New cars shall be of best kind, without running footboards, well heated and equipped with two sets of brakes.

Sec. 12. Funeral cars, postal cars and cars for the carriage of parcels and packages may be operated by the company.

Sec. 13. Company may make bargain with city for sweeping and cleaning entire width of streets occupied by company and for removing sweepings and garbage by night cars.

Sec. 14. Street cars shall have the right of way, and wagons must turn out under penalties.

Sec. 15. Policemen and firemen in uniform and detectives vouched for by the chief of police shall ride free.

Sec. 16. All dead tracks, except emergency curves and switches, shall be removed.

Secs. 17 and 18. Straight 5-cent fare for adults; children between 7 and 12 years of age to pay 3 cents. Universal transfers, except in the downtown district north of Twelfth Street.

Sec. 19. Provision for through routes on Halsted Street and on Western Avenue and for jointly-operated belt line connecting all routes entering business district.

Sec. 20. Compensation fixed at following percentages of gross receipts: First three years, annually 3 per cent; next two years, annually 5 per cent; ensuing ten years, annually 7 per cent; last five years, annually 10 per cent; general average, a fraction under 7 per cent annually. Compensation is to be in lieu of all licenses and all franchise taxes, including taxes on capital stock.

Sec. 21. Company relieves city from onus of damage suits.

Sec. 22. Company before March 1 of every year shall make annual report of gross receipts, and books shall be open to city Comptroller.

Sec. 23. Forfeiture clause, in case company fails to live up to provisions of its ordinance.

Sec. 24. City may intervene in case any suit it deems collusive is brought against the company to restrain it from carrying out the provisions of this ordinance.

Sec. 25. City Council may compel company to extend its lines at the rate of not more than three miles of double tracks annually, providing at least 150 families live within one-quarter of a mile of the street along every mile of the proposed extension.

Sec. 26. City may at any time after not less than one or more than two years' notice to the company buy it out at the fair cash value for all real and personal property plus the fair cash value at that time of such of the company's present rights as may then still be unexpired, regardless of the present ordinance. The city and the company each shall appoint one appraiser of these rights, and those two appraisers shall select a third, who must not be a resident of this State. Should both fail to agree, the third appraiser must be selected by three judges, including the Chief Justice of the Supreme Court of Illinois, and two judges of the United States Circuit Court. The decision of a majority of these appraisers shall be binding on both the city and the company.

Sec. 27. At the end of twenty years the city may buy or sell to another corporation the right to buy the company's lines for the appraised value at that time of the real and personal property without paying anything for "any franchise or license." Every right and privilege of the company of every kind will then cease.

Sec. 28. If, after twenty years, the city is willing to make a further grant to the company, the appraised cash value of the company's property at that time shall be taken as the value of company's investment, regardless of any stocks or bonds that may be then outstanding.

Sec. 29. Express waiver of all claims under ninety-nine-year act and other laws in return for a full twenty-year franchise. Provision withdrawing that waiver if city takes over lines before expiration of the desired twenty-year grant.

Sec. 30. Provision for referendum, requiring majority of all voting at next spring's election to vote against ordinance in order to invalidate it.

Mayor Dunne placed his "contract plan" for municipal ownership before the City Council, Oct. 9, and it was defeated by a vote of 45 to 18. The plan provided for the organization of a corporation and the issuance of certificates under what is known as the Mueller law. Out of the sale of these certificates the first ninety miles of street railway were to be constructed, paralleling existing lines. It is expected that the Mayor will now abandon this plan and bring in in its place his alternative or "city plan." This contemplates the acquirement by purchase or condemnation of all the lines of the existing street car companies.

THE SALT LAKE & OGDEN RAILWAY

As a preliminary to building a double track interurban electric railway from Salt Lake to the mouth of Ogden Canyon, the Salt Lake & Ogden Railway Company has filed an amendment to its articles of incorporation, by which its capital stock is increased from $800,000 to $1,500,000. President Simon Bamberger, of Salt Lake City, states that arrangements have been made with New York interests to finance the project.

AMERICANS IN DUTCH PROJECT

The announcement was made in New York on Monday of a plan by Americans for building a 45-mile electric railway in Holland, to extend from the German frontier to the North Sea. Interested in the project are important financial and commercial interests, representatives of which are now on the way to Holland to further the plans already made by the original investigators, who returned to this country several weeks ago.

From a representative of those interested in the project the STREET RAILWAY JOURNAL learned the plans so far as they are matured. The western terminus of the proposed line is Wykan Zee, on the shore of the North Sea, about three miles north of the west end of the Amsterdam Canal. The main line is to cross Holland in a southeast direction to Arnheim, about a dozen miles from the German frontier. From Wykan Zee it will run to Zaandam, and thence into Amsterdam, the principal city in Holland. Continuing in approximately the same southerly direction, the main line will cross the canal that connects the Rhine with the Zuyder Zee to Utrecht. From Utrecht the road will cross the lower Rhine Valley to Rhenen, a small town some five miles north of the Rhine, where it will turn slightly north of due east to its terminus in Arnheim.

Wykan Zee, the proposed western terminus of the line to be first constructed, is not now in direct land communication with Amsterdam, but from Zaandam to Arnheim the road will practically parallel steam lines already in operation. Both freight and passengers will be carried by the proposed road on its main line and branches.

To carry out the project the Holland-American Construction has been incorporated under the laws of New York, the board of directors of which includes George C. Smith, vice-president of the Security Investment Company, of Pittsburg; Walter D. Updegraff, of the same concern; Newcomb Carlton, fourth vice-president of the Westinghouse Electric & Manufacturing Company, and Joseph H. Lukach, of London.

John F. Alden, at one time prominently connected with the American Bridge Company; J. George Kaelber, Charles H. Palmer and John H. Beckley, who are also largely concerned in the new company, are the men who have sailed for Europe in the interest of the project. On reaching the other side, they will be joined by Mr. Lukach.

DETAILS OF CONTRACT FOR LONG WESTERN ROAD

A few weeks ago announcement was made in the Street Railway Journal of the awarding by the Spokane & Inland Railway Company to the Westinghouse Electric & Manufacturing Company of a contract for equipping its proposed road. Now the details are available of this contract. The present terminals of the road will be Spokane, Wash., and Moscow, Idaho, 146 miles apart. The roadway is completed from Spokane to Waverly, a distance of 34 miles, and operation will be begun on this as soon as possible. The road is a home enterprise, the stock being held entirely by men living in the district through which the line passes. The directors of the company are: J. P. Graves, president; F. A. Blackwell, vice-president; F. Lewis Clark, John Twohy and Alfred Coolidge.

In selecting the equipment for this road, the a. c.-d. c. and the single-phase systems were considered, but, after careful comparison the single-phase alternating-current system was adopted. Not only did the estimates show a large saving in initial investments and in annual operating expenses in favor of the single-phase system, but a form of heavy traction is made possible which would be practically unfeasible with the a. c.-d. c. equipment. Besides the passenger traffic the company is preparing to do a heavy freight business and also to carry mail and express.

Power for the operation of the road will be purchased from the Washington Water Power Company, which will supply three-phase current at 4000 volts, 7200 alternations, to frequency-changing station apparatus approximately 1½ miles from the generating station. Seven 750-kw oil-insulated water-cooled transformers will step-down the voltage from 4000 to 2000 volts, the potential for which the induction motors of the frequency changing sets are wound. There will be four of these motor-generators of 1000-kw capacity each at normal rating. Each consists of a 1000-hp, three-phase, 2000-volt, 60-cycle induction motor, a 1000-kw single-phase, 2200-volt, 25-cycle revolving field alternator, and a 750-hp, 550-volt direct-current generator, which is to float on the storage battery acting alternately as a motor or a generator. The three machines will be mounted on a single bed-plate with seven bearings. Exciting current for the alternators will be supplied by three sets, each consisting of a 75-hp, three-phase, 2000-volt induction motor and a 50-kw d. c. generator.

Nine 675-kw oil-insulated water-cooled transformers will step-up the voltage from 2200 to 45,000 volts, at which pressure it will be transmitted to the fifteen static transformer sub-stations, each containing two 375-kw, 45,000-6600-volt oil-insulated self-cooling transformers. A twenty-three panel switchboard, electrically-operated automatic oil circuit breakers, and protective apparatus complete the equipment of the frequency changing station. Low equivalent lightning arresters and choke coils are provided for both primary and secondary circuits in all sub-stations.

The transmission lines will consist of two No. 2 copper wires, and the trolley will be of the standard catenary construction, using a No. 000 wire and carrying current at 6600 volts.

Each passenger car will be equipped with four 100-hp motors, capable of maintaining a schedule speed of 35 to 40 miles an hour. In the freight service four 150-hp motors will be used on each car. For the heavy freight service double locomotives weighing approximately 70 to 80 tons will be used, each consisting of two parts and each part a complete 35 to 40-ton locomotive. Two or more of these locomotives may be coupled together and operated from the front cab as a single unit. The motor cars and locomotives will all be operated by the Westinghouse multiple unit control system. The motors will operate under three different conditions,—6600 volts alternating current in the interurban districts, 700 volts alternating current in the smaller towns, and 575 direct current in the city of Spokane.

NEW YORK CITY COMPANY'S ANNUAL REPORT

President Vreeland, of the New York City Railway Company, in his annual report to the stockholders, made public Wednesday, Oct. 11, says it is still too early to reach a definite conclusion in regard to the ultimate effect of subway travel upon the earnings of the surface lines. The decrease in the company's gross earnings, amounting to $596.881, according to the figures published some days ago, is attributed by President Vreeland to the unfavorable weather conditions of last winter. The cost of removing the snow from the company's lines, owing to the very heavy fall, was $119,824 more last year than the year before.

The loss in gross earnings for the fiscal year was accounted for almost entirely by the smaller earnings in the winter months. The decrease for December, January and February amounted to $544,845.

The statement of income for the year shows a deficit of $2,796,942 from operation. It is pointed out that this deficit will be further increased by the special franchise tax. Concerning this President Vreeland says:

"The company's appeal to the United States Supreme Court involving the constitutionality of the special franchise tax law has been decided adversely to the company, and the constitutionality of the law upheld. Proceedings are now pending to secure reductions in the special franchise assessments for every year subsequent to 1900, and it is expected that very substantial reductions in the original assessments will be secured."

In regard to the effect of the opening of the subway upon the New York City Railway's earnings, President Vreeland says:

"While the subway service, inaugurated Oct. 27, 1904, together with the unfavorable weather conditions which prevailed during the winter, materially affected the receipts from passengers for a few months, it became apparent by March of 1905 that the traffic was becoming adjusted to the new conditions, and that a considerable additional short-haul traffic was being developed which would, partially at least, make up for the long-haul business lost to the subway. During June, July and August of this year the receipts from passengers have shown a substantial increase over those of the corresponding months of last year, when there was no subway competition. It is too early to reach definite conclusions as to the ultimate effect of subway travel upon the earnings of the surface lines."

The general balance sheet of the company, as of June 30 last, gives the deficit carried in the profit and loss account as $782,585 It is explained that it is the policy of the company to charge "profit and loss" each year with the net deficits of its controlled companies and to credit the amount to the "reserve" account. The report says that for this reason it is necessary, in order to arrive at the net profit and loss of the system as a whole, to eliminate these duplicate charges.

In regard to the year's fixed charges this statement is made:

"The fixed charges include the first full year's charge of the guaranteed annual rental of 5 per cent paid to the Third Avenue Railroad Company stockholders, as compared with but two months and seventeen days of this rental accrued during the previous year. This, together with interest on notes of the Central Crosstown Railroad company, and bonds of the Third Avenue Railroad and Second Avenue Railroad Companies, issued for construction purposes, accounts for the increase in the fixed charges."

The company reports earnings as follows for the quarter ended June 30:

	1905	1904
Gross receipts	$4,417,081	$4,479,812
Operating expenses	2,420,230	2,512,543
Net earnings	$1,996,851	$1,967,269
Other income	325,738	133,525
Total income	2,322,589	2,100,794
Fixed charges	2,793,539	2,513,420
Deficit	$470,950	$412,626

The consolidated income account of New York City Railways system (including Third Avenue and all lines owned or controlled) for the year ended June 30, 1905 (as compiled from the quarterly statements), compares as follows:

	1905	1904
Gross receipts	$17,907,399	$17,757,650
Operating expenses	10,031,129	9,530,360
Net earnings	$7,876,270	$8,227,290
Other income	1,225,818	1,086,209
Total income	$9,102,088	$9,313,499
Fixed charges	11,497,415	10,368,283
Deficit	$2,395,327	$1,054,784

COURSE OPENED IN ALTERNATING-CURRENT TESTING AT BROOKLYN POLYTECHNIC

The evening course in alternating-current testing to be given at the Polytechnic Institute of Brooklyn began Thursday, Oct. 12, at 7:30 p. m. and will extend over a period of twenty successive Thursday evenings. This course will consist of twenty tests upon rotary converters, transformers, induction motors and other alternating apparatus. The course will commence with the elements and will develop gradually. Reports in engineering form will be expected of the students. This work will be under the direction of Sydney W. Ashe, who had charge of the Polytechnic's direct-current course last year.

DULUTH TO MINNEAPOLIS BY ELECTRICITY

Duluth and Minneapolis interests attach great significance to the statements made by C. C. Cokefair, of the Great Northern Power Company, at the recent meeting in Duluth of the Real Estate Board of that city. Mr. Cokefair said that in the next two years Duluth would be nearer Minneapolis by nearly two hours, and that the cost of transportation would be much less than now between the cities. This, he said, will be either by an interurban route, connecting the street railway systems of the cities, or by the electrification of one of the steam roads. Estimates are being prepared by the Westinghouse Company and the General Electric Company on these two propositions, power to be taken from the Great Northern Power Company's plant. Further than this, Mr. Cokefair refused to say anything about the project for publication.

PLANS MAKING FOR ANOTHER LINE OUT OF CHICAGO

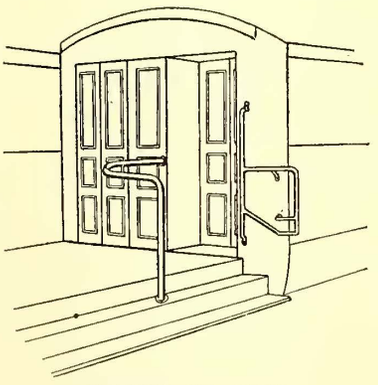
W. S. Reed, First National Bank Building, Chicago, is actively pushing his plans for building into Chicago from the south. His latest move is the incorporation at Springfield, Ill., of the Chicago, Des Plaines & Fox River Railroad to build from Chicago to McHenry, Ill. The company is capitalized at $1,000,000. The route of the projected road will follow the Des Plaines and the Fox Rivers for a considerable portion of the distance between termini, and will run through the towns of River Forest, River Grove, Franklin Park, Des Plaines, Arlington Heights, Barrington, Lake Zurish and McHenry. This right of way has been obtained by the absorption of the Illinois & Wisconsin Railway. In the Street Railway Journal of Sept. 9, mention was made of the purchase by Mr. Reed of the Chicago Electric Traction Company, which connects with the South Side Elevated at Sixty-Fourth Street and South Park Avenue, Chicago, over which entrance will be secured to Chicago. The directors of the Chicago, Des Plaines & Fox River Railroad are: Geo. N. Bryson, W. S. Reed, E. T. Ross, W. C. Gunn and William K. Kenly.

STREET RAILWAY PATENTS

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

UNITED STATES PATENTS ISSUED SEPT. 26, 1905

800,172. Passenger Car; William G. Ross and Duncan McDonald, Montreal, Can. App. filed May 1, 1905. A passenger car provided with two separate doorways between the interior and the platform, and having an intervening space between the doorways, and a barrier dividing the platform and platform steps and providing a separate passage to each doorway.



PATENT NO. 800,172

800,294. Trolley Pole and Stand; William M. Hallenbeck, Burrville, Con. App. filed Jan. 12, 1905. A trolley stand having two sets of ball bearings with horizontal and vertical raceways respectively.

800,355 Fender; John C. G. Bradley, Brooklyn, N. Y. App. filed April 13, 1905. A "feeler" mounted in advance of the fender closes a circuit, when an obstruction is encountered, to actuate electro-magnets and attract an armature which draws the fender into operating position. Other details.

800,409. Fulcrum Post for Brake Beams; William E. Sharp, Chicago, Ill. App. filed July 10, 1905. Comprises a skeleton frame adapted to be secured to the brake beam, said frame having a pair of right and left passageways formed therein, in combination with a pair of removable fulcrum plates adapted to be mounted in either of the passageways and to pivotally support the brake lever between them.

800,435. Railway Switch; Herman Fenske, St. Louis, Mo. App. filed March 6, 1905. Comprises a shifting plate mounted beneath the switch, a rocking arm connecting said plate with the switch, a shifting bar adapted to contact with the shifting plate, and means for contacting the same.

800,446. Switch and Signal Track-Trip; Charles M. Hurst, Rawlins, Wyo. App. filed Oct. 15, 1904. Consists of an apron inclined toward one or both its ends, joined to a fixture of the track by parallel links, and a crank arm for attachment of the member connecting the device with the switch, rotated from the parallel links by means of a tie-rod from each.

800,520. Rail Sanding Device; William T. Watson, Vancouver, Can. App. filed Dec. 30. 1904. The depression of a pin by the motorman opens the hopper valve and actuates a rock shaft having agitator fingers which loosen the same in the hopper and permit it to flow through the valve. The spout is made of resilient sheet metal bent to form a tube, the edges thereof being loosely engaged, whereby a cleaner may be inserted.

800,656. Fare Register; Charles E. Gierding, Newark, N. J. App. filed May 19, 1904. Details.

800,566. Fare Register; Charles E. Gierding, Newark, N. J. App. filed Nov. 25, 1904. Details.

800,567. Fare Register; Charles E. Gierding, Newark, N. J. App. filed Feb. 10, 1905.

800,581. Automatic Switch; Elliott T. Humpton, Reisterstown, Md. App. filed May 31, 1905. A rod in the roadbed has a pinion on one end disposed between two rocks, and at the other end has an eccentric connection with the switch tongue. The racks are engaged by an approaching car to rotate the rod in either direction and thereby throw the switch.

800,854. Trolley Wire Coupling; Edward M. Leslie, Cincinnati, Ohio. App. filed Nov. 20, 1903. A tube having tapered ends is adapted to inclose the abutting sections of the trolley wire, which are held in place therein by circular-toother wedges.

UNITED STATES PATENTS ISSUED OCT. 3, 1905

800,671. Brake Beam Fulcrum; John V. O'Connor, Chicago, Ill. App. filed Jan. 9, 1905. Comprises two parts having locking projections which are engaged when the jaws are moved in a direction tending to separate them.

800,715. Grab Handle for Open Cars; John A. Brill, Philadelphia, Pa. App. filed Aug. 29, 1903. A reversible seat having a grab handle upon the end edge of the back.

800,716. Semi-Convertible Car; John A. Brill and Henry E. Haddock, Philadelphia, Pa. App. filed Sept. 28, 1903. Space is economized by providing means for moving the sashes in each window against each other and then into the sash pockets.

800,717. Car; Ezra S. Buckman, Philadelphia, Pa. App. filed Dec. 17, 1904. Relates to the construction of sash and guide rails therefor, and consists of a free guide rail secured adjacent the window frame, a sash and a stop fixed to the sash and provided with anti-friction rollers that engage the rail.

800,762. Trolley Pole; Andrew L. Prentise, Buffalo, N. Y. App. filed Oct. 18, 1904. A pneumatically-controlled trolley pole in which the harp is hinged to the pole so that its upward movement when the wheel leaves the wire, tends to actuate the controlling means.

800,888. Bolster for Railway Cars; Henry H. Vaughan, Montreal, Can., Feb. 76, 1905. A single-piece cast-steel bolster, which tapers vertically from its middle toward its ends and comprises top and bottom walls connected at each end by a single vertical web and between its ends by spaced vertical webs, which converge toward and merge into said end vertical webs.

800,909. Controller Regulator; Cyrus P. Ebersole, Keokuk, Iowa. App. filed July 23, 1902. A wheel upon the controller shaft having a zigzag slot or groove in its periphery and a suitably governed movably-mounted dog adapted to co-operate with said slot, whereby the speed of operation of the controller is regulated to any desired extent.

800,921. Car Truck; William F. Kiesel, Jr., Altoona, Pa. App. filed July 11, 1905. In order to drop the center plate to provide for deep center sills, the bolster is supported by stirrups hung from the wheel pieces.

801,045. Valve; Arthur I. Perry, New York, N. Y. App. filed Dec. 21, 1904. Relates to an air valve for fluid pressure brakes provided with means for applying the pressure proportionately to the movement of the valve handle, and consists of admission and exhaust ports and a movable body portion provided with opposite heads, between which is a space which may communicate with each of the ports, the heads having different areas.

801,164. Car Fender; George W. Steenrod, Wheeling, W. Va. App, filed March 11, 1905. Details of construction.

801,188. Motor Truck; Archibald H. Ehle, Philadelphia, Pa. App. filed July 22, 1905. The invention relates to the mounting of gas engines on the car trucks for driving the same, and to provide gearing by which the same can be controlled.

PERSONAL MENTION

CAPTAIN WILLIAM J. SALLES has resigned as superintendent of the St. Charles division of the New Orleans Railways Company, of New Orleans, La.

MR. EDMUND L. DES JARDINS, superintendent of the Chicago & Milwaukee Electric Railroad Company, has announced that he was married last February to Miss Harriet Cammack, of Highland Park, Chicago.

MR. H. B. UPTON has resigned as superintendent of the Shelburne Falls & Colerain Street Railway Company, of Shelburne Falls, Mass., to become connected with the Berkshire Mill Supply Company, of Pittsfield, Mass.

MR. JOHN C. OSTRUP, M. AM. SOC. C. E., who was formerly designing engineer of the Boston Elevated Railroad, and afterward consulting engineer in Boston and New York, and who was recently appointed vice-president and chief engineer of the American Engineering Company, of Indianapolis, Ind., has now arrived in that city and assumed his new duties.

MR. ROBERT D. BEATTY has been appointed general manager of the Eastern Ohio Traction Company, succeeding to the duties of Mr. George T. Bishop, receiver for the company, who is giving his personal attention to the construction of the Washington, Baltimore & Annapolis Railway. Mr. Beatty has been for the past fourteen years with the Westinghouse Company, in charge of the Walker plant at Cleveland. He will devote himself to straightening out the financial difficulties and improving the company's power facilities.

MR. R. T. GUNN, general manager of the Lexington Railway Company, of Lexington, Ky., contributed to a recent special edition of the "Lexington Herald" an interesting article descriptive of the properties of his company, which include the street railway, lighting and gas facilities of the city. Mr. Gunn has long been identified with Lexington and its interests, in fact, was educated at the State College there, and so lent to the narrative facts of historic interest that greatly enhanced the value of the description, making it a record of achievements along lines that have aided most in shaping the destiny of Lexington and the country adjacent thereto.

MR. C. O. SIMPSON has resigned as treasurer of the Birmingham Railway Light & Power Company, of Birmingham, Ala., to accept the position of general manager of the Little Rock Railway & Electric Company, succeeding Mr. J. A. Trawick, resigned. Mr. Simpson has been connected with the street railway industry for the past fifteen years, having begun his career in the office of the Metropolitan Street Railway, of Kansas City. In 1898 he became auditor of the August Railway & Electric Company, and while with this company organized an employees benefit association, which occupies handsome club rooms fitted out by the company. In September, 1901, Mr. Simpson resigned from the Augusta Railway & Electric Company to become treasurer of the Birmingham Railway Light & Power Company. He has always taken a great interest in the operating department, and this promotion to be general manager at Little Rock is a deserved recognition of his ability as an operating man. Mr. Simpson was at one time one of the vice-presidents of the Street Railway Accountants' Association.

PROF. W. WYSSLING, Ph. D., secretary and member of the Council of the Swiss Institution of Electrical Engineers at the Swiss Polytechnicum, at Zurich, and secretary of a commission recently appointed by the Swiss Government to study the question of the electrification of the railways of Switzerland, and Mr. Chas. Wirth, engineer of the Swiss Government Railways, sailed from New York for home on Saturday, Oct. 14, on the "Koenigen Louise." Messrs. Wyssling and Wirth have been in the United States since August, studying methods of operation here of electric and steam lines and looking into the development of power here. Many of the large Eastern and Western cities were visited by them, Boston, Philadelphia, Buffalo, Chicago, Cleveland and Detroit being among the cities at which they stopped. At Niagara a careful study was made of power development and its application as exemplified in the many industries dependent upon the falls. At Schenectady the General Electric Company's works were inspected, and at Pittsburg considerable time was given to an inspection of the Westinghouse Company's works and the Inter-Works Railway.

MR. B. J. JONES has recently become manager of the electrical department of the Cincinnati Gas & Electric Company. Mr. Jones is well known in Chicago electrical circles, having been since 1897 on the staff of Sargent & Lundy, consulting engineers. His first work with that company was that of the direct supervision of the electrical equipment of the South Side Elevated Railroad. He has been prominently identified with a number of the important undertakings by that firm, and has come closely in touch with the electrical work of the Cincinnati Gas & Electric Company. He is the inventor of the flat flexible bond and solid terminal, designed to go under the fish-plate, which was sold originally as the Atkinson bond, being made by that company. He is also the designer of many of the details of high-tension construction used on the Indianapolis & Cincinnati Traction Company's line between Indianapolis and Rushville, and adopted by the Westinghouse Electric & Manufacturing Company as standard construction for certain classes of single-phase trolley work. Previous to his connection with Sargent & Lundy, Mr. Jones was superintendent of the South Chicago City Railway Company, which position he accepted upon leaving a similar position at Sioux City, Ia. He was at one time with the Westinghouse Electric & Manufacturing Company.

MR. LINCOLN NISSLEY, who for a number of years has been associated with the Knox Engineering Company, of Chicago, has resigned to accept a position on the engineering staff of Sargent & Lundy, consulting engineers, of Chicago. Mr. Nissley has a wide acquaintance and experience in engineering in this country and Europe, and is one of the pioneers in the introduction of the electric railway. Some twenty-five years ago, Mr. Nissley entered railroading, in the engineering department of the Atchison, Topeka & Santa Fe Railroad. During seven years of laborious service in the field, in what was at that time the wild Southwestern frontier, he rose through the various positions of assistant engineer, resident engineer and locating engineer until he had advanced by ability alone to the position of chief engineer of important work. In 1886, Mr. Nissley took up the investigation of the electric motor as a motive power, and, in an extended trip abroad, visited Switzerland, Germany, France and Great Britain in the study of the art. Returning to America, he entered the engineering department of the Thomson-Houston Electric Company, and was engaged until 1890 in the construction of electric railway and lighting plants in the South and throughout New England. In 1890 to 1892 he was engaged in the experimental and engineering department at the Lynn factory. Upon the organization of the General Electric Company he was appointed chief engineer of that company's Pittsburg district, and was subsequently transferred, in 1893, to the Western district and the World's Fair. His reputation as a thoroughly competent engineer, and his published investigation of the hydro-electric transmission systems of Switzerland, attracted the attention of the bondholders of the consolidated interests at Los Angeles, Cal., and for four years he was engaged in the complete electrification of the Pacific cable roads, the construction of power stations and shops, and the pioneer high-voltage transmission lines into Los Angeles. Mr. Nissley is a recognized authority on the economic location, construction and operation of electric railways, and a well-known contributor to the technical press on the generation, utilization and distribution of power and on electric traction.

MR. EDWARD G. CONNETTE, who resigned as vice-president and general manager of the Syracuse Rapid Transit Company to become general manager of the Consolidated Street Railway Company, of Worcester, Mass., assumed the duties of that position on Oct. 3. The public press and citizens of Syracuse are all lamenting Mr. Connette's leaving that city, in whose affairs he has always taken deep interest and whose interests he has always carefully conserved. Procedure very unusual on the part of the Mayor of Syracuse, illustrates strikingly the feeling entertained in that city for Mr. Connette. Mayor Forbes, of Syracuse, took it upon himself to commend Mr. Connette to Mayor Blodgett, of Worcester, telling what had been accomplished by him in bringing the Syracuse Street Railway system up to its present state of high efficiency. He said in part in his letter:—It is with feelings of regret that the citizens of Syracuse part with Mr. Connette, who for five years has been vice-president and general manager of the Rapid Transit Railway Company in this city. Mr. Connette combines to an unusual degree the qualities which enable him to please the public while serving faithfully the corporation whose affairs he directs. The situation as to the street railway service in Syracuse to-day is in marked contrast with what it was when Mr. Connette came to Syracuse. He found the service poor and unsatisfactory to the citizens of Syracuse. The company, too, had troubles with its employees, and the situation was unsatisfactory, both from the standpoint of the company and that of the public. Announcing that he considered that the interests of the company and of the public as regards good service were mutual, Mr. Connette applied himself to improving conditions and the situation which he now leaves could not be better, its appreciation being attested by largely increased patronage, and the company's earnings having shown a markedly steady increase through Mr. Connette's administration. He has been instrumental in bringing about voluntary advances in the pay of the employees, who now have the best of feeling towards the company. Syracuse's loss in this case is Worcester's gain, and again I congratulate you and the citizens of Worcester upon the acquisition of so able and public spirited a street railway manager as is Mr. Connette.