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**EDITORIAL NOTICE**

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**THE STREET RAILWAY PUBLISHING CO.,**  
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**The Power Famine**

One of the numerous signs of prosperity which have manifested themselves in the last two years is the very common shortage of power which is being experienced by street railway companies. due to the growth of traffic. To one who is traveling among the larger street railway companies it is the exception rather than the rule to find a company which is not using the full capacity of its power house, with, perhaps, a short period of overload every day, and with no units in reserve to provide for a breakdown. This condition of affairs is due to the great increase in traffic with which the manufacturers of generating machinery have not been able to keep up. It requires so many months from the time generating machinery is ordered until it can be in operation that even the most farseeing managers are likely to be caught with a shortage of power. In these times, when manufacturers are so crowded with work, the impossibility of getting generating machinery in short time must be remembered, and orders should be placed a sufficient time in advance of actual requirements to secure the apparatus when it is needed. There are not a few power houses in the country where the disabling of any unit in the power house would result in shutting down a part of the system, because of the impossibility of supplying enough power.

**Increasing Use of Electric Track Switches**

Although the production of a practical track switch, to be operated electrically by the motorman from the car, has been long sought for, it is only now, after over ten years of work in this direction, that the use of automatic electric track switches is becoming established as a commercial success. Mechanical switches, operated by tripping devices attached to the car, have been proposed without number, but it is only the electrically-operated track switch, supplied from the trolley feeders, and worked from a short section of trolley wire, separated by section insulators from the main line, or from a short insulated section of track, that has found much use. The principal difficulties that have had to be overcome in the electric switch were in the exclusion of moisture from the solenoid and wires leading thereto. This is largely a matter of careful design and thorough workmanship. Perhaps one reason electric track switches are coming to be more extensively used than formerly is that they are not expected now, as before, to perform both the functions of switch operator and track cleaner. To expect a switch to keep itself clear of dirt automatically, because it is operated automatically, is to hope for the impossible. If electric track switches are to be used the track must be kept clean enough so that the switch can operate, and there is no reason for supposing that this cannot be done at far less expense than by hiring a man to clean and operate one switch exclusively. To state the case briefly, electric track switches, as now used, are being made watertight, as far as the electrical parts are concerned, and are not expected to sweep and salt the switch point, as well as operate it. That is why they are now commercial devices, instead of the experiments they were five years ago.

**Street Signs**

We have commented recently on the absence of street signs in large cities, and the unfair burden thus thrown upon the busy conductor when people ask him to put them off at certain thoroughfares, the location of which they are themselves unable to distinguish, from the absence of any special peculiarity of architecture or landmark. At night the trouble to both conductor and passenger is enhanced, for even on a street well lit by electric lights, the brilliant illumination of the ordinary trolley car makes all the surroundings look dark, and to get one's bearings is confessedly no easy job. We are glad to note, therefore, that in Greater New York, Jacob A. Cantor, the new president-elect of the Borough of Manhattan, has already begun to give the matter his serious and earnest attention. He has been quoted as follows:

"The providing of street signs," said Mr. Cantor last night, "is the burning

question of the hour with me. I am giving that matter more attention right now than I am the appointments which I will have to make. It is an actual fact that I have received more communications on the subject of street signs than I have received with regard to appointments. Mr. Low has informed me that his mail also has been burdened with complaints about the lack of signs. If the lack of street signs is a source of such annoyance to resident New Yorkers as my correspondence indicates, what must be the annoyance to strangers from this same cause? In some sections of New York at the present time you can walk blocks without finding a sign which will indicate to you where you are. But this is not the worst of it. On many street corners the lamps upon which the names of the streets have been painted have been reversed, so that the wayfarer who depends on lamppost signs frequently gets misinformation."

Mr. Cantor gives also his experience in street car travel, confirming our own views and statements that the proper labeling of the streets in the greater cities would very materially benefit street railway passengers and conductors alike.

In New York we have observed of late some interesting efforts in this direction. The plan has been to take the arc lamp posts, which have now so universally superseded the gas posts, and put signs on them, legible by day and night. One of the most ingenious moves has been that of putting a sign box of ornamental nature midway in the post, with the street and avenue names printed boldly in white on a black background. Within the box are incandescent lamps. Thus the arc light proper is not obscured in any way, and the sign is visible every hour of the day, while the post is in no way disfigured. No effort is required to read these signs at a distance, and by them anyone can "orient" himself easily and quickly. To those who have seen a conductor with a car full of people, all asking to be put off at certain streets, and growling fiercely at him, if, in the pressure of his work, he is not quite equal to the task, it seems that such signs cannot be introduced any too quickly.

### The Telephone and Trolleys

Not so many years ago any one of our readers who saw the above caption would infer that it related to some dispute between the two interests as to whether the trolley had any right at all to exist, and whether the telephone, if it wanted to stay on earth, had not better at once get its wires off it and adopt aerial metallic circuits. The course of time has seen the ardor of that early fight mitigated, and on the whole the two interests are getting along together very nicely. Indeed, the water pipe may be said to have fallen into the place of the telephone as an antagonist to the trolley; while, strangely enough, it is now some of the more active trolley men who are the most conspicuous promoters of new telephone enterprises. There always have been capitalists interested in the development of both industries, but at this juncture, their number and their investments seem to be growing, especially among those who affect the "independent" side, opposed to the older Bell regime. Conspicuous in the field just now are the Everett group of trolley magnates, who have been doing so much to create the great trolley networks of the Middle States. Mr. Everett's telephone enterprise in the city of Cleveland is familiar to most people, and it is now stated that the Everett-Moore syndicate has begun an independent opposition plant in Detroit, and is putting a million dollars into it, of which \$300,000 already represents an underground system. At this point, even, the cycle would seem to be complete, for if an enterprising trolley manager fifteen years ago had been caught putting \$300 into underground telephone wires, his sanity would have been seriously questioned, and he would have been regarded as an enemy of the cause. To-day no one has a word of criticism to offer, for no one knows of any good reason why those telephone wires should not work most satisfactorily, without offering the slightest let or hindrance to the operation of the trolley lines everywhere around.

### Trolleymania

A new form of complaint, which enables a man to secure \$10,000 from a street railway company, on the verdict of a jury, is surely one that we shall hear more about. Nothing is more likely to render a disease fashionable than to have the public discover that

it is also profitable. It is usually the other way; the more fashionable the disease, the greater the outlay on doctors, drugs and visits to health resorts. In the present instance, it appears that a man who got in the way of a West Broadway car in New York City, and was carried along by its fender, not only sustained physical injuries, but became subject to a peculiar mental delusion. To him, as to Irving's Mathias in "The Bells," the air is always full of the clamor of insistent gongs; and in addition, a huge trolley car is always chasing him. Although he has been otherwise sane and able to make money outside verdicts, he is so sensitive to the tintinnabulation of the bells, that even the very pots and pans in the kitchen are compelled to subdue their clatter in muffled vibrations, lest the sound should upset his nerves. This is certainly extremely interesting, although we note that Dr. Robert Safford Newton, the medical expert for the Metropolitan Street Railway Company, said that in all his experience in accident cases he had never heard of a man who, though in every other way perfectly sane and able to attend to his business affairs, suffered from delusions which could be called trolleymania. Dr. Newton said that the term was apt to be adopted into the glossary of medico-legal expressions.

Letting pass the hybridity of the word "trolleymania," which is hardly likely to be so precious and soothing as "Mesopotamia," even to the verdict winner, we can but view with mingled alarm and amusement the wide range of complaints that open up along similar lines. We understand that already the elevated roads are threatened with cases of the same character, where the victims state that they never hear "Step lively" without running a block, or "Push up in the center of the car" without becoming involved immediately in a regular scrimmage with the nearest man. Some of the typewriter companies also contemplate changing their machines, owing to suits brought by nervous editors, bankers and clerks harassed by the rattle of the keys, and dreaming all night of hieroglyphic jumbles in endless sheets. We note that according to Dr. Lung, who was on the Pekin relief expedition, many of the marines were stricken with a "boo hoo" weeping epidemic, due to the racket made around them by a noisy and cruel enemy, but we know of no litigation against the Empress of China in consequence. Out West, in Wyoming, men who live among the sheep all day long, and hear nothing but their ceaseless bleatings, often go crazy, it is said, and get the "sheep walk," as the result of the racking of their nerves. They will now be able to bring successful suits, we opine, against their employers, the owners of the ranches.

### The Adaptability of Electricity to Heavy Electric Railroading

Whatever may have been true during the last few years in respect to the lethargy of steam railroad companies in considering the use of electricity as a motive power, it can certainly be said that the developments of the last two or three months have clearly shown the subject to be a vital one to the steam railroad companies. We had occasion, about a year ago, to comment on the seeming disappearance of interest in electricity as a motive power by the steam railroad companies of the country, not as a universal panacea for all the difficulties which they meet or as a power for use under all conditions of traffic, but as a rival of the steam locomotive under such special conditions as experience with electricity has shown it to be especially adapted. It will be remembered that during the first three-quarters of the last decade steam railroad officials evinced a lively interest in the possibilities of electric power for the hauling of their trains, and during this period notable investigations were conducted on the subject through an alliance of steam and electric railway experts of the highest grade. The Illinois Central Railroad Company conducted an extensive series of investigations into the applicability of the power for its suburban service to the south of Chicago, while as early as 1892, the Northern Pacific and the Wisconsin Central railroads, then in the control of the Villard interests, went so far as to secure the

design of an electric locomotive of 60 tons weight. This locomotive, however, was never built. Other railroad companies in the East looked into the subject quite carefully, and papers on the application of electricity to different phases of trunk line railroading formed a feature of the meeting of nearly every steam railroad association.

Whatever may have been the reason for the lapse of interest in the subject, whether it was that the conservative interests among the railroads were so great as not to recognize intrinsic merits in the new motive power, or whether the application of electricity to railroad work and the skill of manufacturers of electrical apparatus had not advanced far enough to warrant any radical change, it is not our purpose now to consider; certain it is, that commencing really with the adverse decision against electricity adopted by the Illinois Central Railroad, this word seems to have dropped out of the vocabulary of the average steam rail operator and owner. It is true, reminders of the early interest taken in electric power by the steam railroad companies of this country remain with us in the case of the electric locomotives on the Belt Line of the Baltimore & Ohio Railroad, and later in the notable work accomplished by the New York, New Haven & Hartford Railroad in its Hartford-New Britain and Nantasket Beach branches. These seem, however, to have been generally regarded by steam railroad companies as exceptions only to the general rule of the superiority of steam, and typifying merely very unusual circumstances under which electric power could be more satisfactorily employed than its older rival. It is hard to imagine any subject directly connected with his own work which, in a sense, apparently disappeared so completely from the mental horizon of the average steam railroad manager during the last three years than that of the use of electric power. Even the proposed high-speed electric road between New York and Philadelphia, advocated by the late A. L. Johnson, created only a slight ripple on the otherwise placid surface of the steam railroad ocean of content.

During this ostrich-like policy on the part of the steam railroads, interurban electric railroads have been built throughout the country in competition with parallel steam railroad lines. And while their equipment may not have been of the kind suitable for the neighboring steam road, and while they may have been built, in many cases, on the highways and city streets instead of under or over them, it is nevertheless true that their mileage has increased enormously, and they have been gradually, but surely, obtaining a large traffic, in part created, but in part without doubt taken, from the steam railroads. As time has gone on these interurban projects have been becoming more and more ambitious, so that now while the Johnson idea of a railroad between New York and Philadelphia may not be realized, the interurban electric roads are reaching out for through traffic, and the connection by them of our neighboring cities is only a question of a very short time.

It may fairly be said that if the steam railroad companies intend to retain their traffic, they must recognize the merits of electric traction, and it is noticeable that the first companies prominently to consider the subject are the New York Central and Pennsylvania. The agitation in New York City for improved motive power in the Park Avenue tunnel of the former company, which recommenced last summer with more than its usual hot weather vigor, at last seems approaching fruition. The railroad company in question has engaged a first-class electrical engineer to study the whole subject of electric traction for this particular service, and is, no doubt, honestly engaged in endeavoring to reach an understanding of the problem. It is undeniably a serious undertaking, involving many problems for which there is now no precedent, and which, to say the least, are all of a most difficult character, but that all these conditions can be satisfactorily fulfilled by electric power there can be no question.

The latest recognition of the value of electric power is the decision announced Dec. 12 by the Pennsylvania Railroad Com-

pany, and referred to elsewhere, of constructing a new underground terminal in connection with its main line under the Hudson River and into New York City. This road is to be operated electrically in the same manner as the recently constructed Orleans Railway extension in Paris, by which, as our readers remember, the steam trains are hauled through a partly sunken and partly underground extension by electric locomotives into the very heart of Paris. It has also been announced that the company will use the same station in New York City as that to be employed by the Long Island Railroad at Thirty-Fourth Street and Seventh Avenue. This Long Island Railroad extension, the route of which was first made public, as far as we know, in the large inset map of the Oct. 5 issue of the STREET RAILWAY JOURNAL, is also to be operated by electricity, and the Pennsylvania Railroad extension, of which we publish elsewhere a plan and profile, will comprise by far the most elaborate application of electric power for traction purposes made by any steam railroad company in the world. Indeed, when these two lines are completed and operated, as they will be, in connection and harmony with the underground rapid transit system in New York City, the latter will be provided, when we also include surface and elevated lines, also employing the same motive power, with the most complete rapid transit facilities in existence in any large city.

The construction of this Pennsylvania Railroad extension immediately introduces directly into New York transportation interests another factor which financially, as well as from an engineering point, seems certain to make matters interesting during the next ten years. Operated, as this extension will be, in connection with the new Rapid Transit in New York City, in 1905 at the latest, the city will present as ideal an example of electricity, as applied to urban transportation, as can almost be imagined. The trunk line trains of the Pennsylvania and Long Island Railroads, and also probably of the New York Central Railroad, will, by that time, be hauled into the city by electric locomotives, while the suburban trains of all three companies will enter the city, if at all, by the same motive power, either by locomotives or as motor-car trains. The Rapid Transit Railway, which will use motor-car trains, will provide rapid transportation under ground to Brooklyn and the Bronx, and underneath Manhattan, and also probably by extensions to the Connecticut State line, if not further. The elevated and surface roads will also be operated electrically, and with the existing surface roads, will care for the shorter-haul passengers inside the limits of the greater city. It is also by no means impossible that some at least of the surface street lines of New Jersey will have a New York terminal through the negotiations now being carried on by the North Jersey Street Railway Company for the half-constructed tunnel between New York City and Hoboken.

The Pennsylvania Railroad Company has stated officially that the method of operation to be employed by it is similar to that in use by the Orleans Railroad, of Paris. Particulars of installation from the company's original plans, were published in our issue for June, 1898, while views of the truck and locomotive used were published in the STREET RAILWAY JOURNAL for February, 1899, and Aug. 4, 1900. As will be remembered, the Orleans Railroad Company, which is one of the trunk line railroads of France, hauls its trains between the outskirts of Paris to the Quai d'Orsay, a distance of  $2\frac{1}{2}$  miles, by electric locomotives. All of the electrical apparatus was built in America. The locomotives are similar, in general appearance, to those on the Baltimore & Ohio Railroad, except that they weigh only about 45 tons each, instead of 97 tons, and have four driving axles, with a G. E.-65 motor on each. While the installation is a very pretty one, it in no wise compares in extent or importance to that which will be required by either the Pennsylvania or New York Central Railroads. While the weight of the trains hauled, 250 tons to 300 tons, will be about the same, the average number of trains both ways per day on the Orleans Railroad is only about 150, as against about 550 through the New York Central tunnel.

### Erie Rapid Transit Street Railway

This is the title of a new railway, 15 miles in length, which was placed in operation Nov. 27, 1901, and which extends from the city of Erie to the town of North East. It is constructed along the Buffalo road, through Wesleyville, Harbor Creek and Mooreheadville, towns averaging from 800 to 3500 population. The territory is thickly settled, being the center of the grape belt of Western Pennsylvania and New York, and is dotted with vineyards and small fruit farms throughout almost the entire length



SUBWAY UNDER LAKE SHORE AND NICKEL PLATE TRACKS

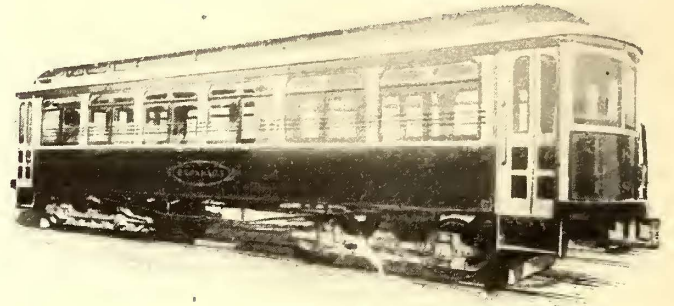
of the line. The franchises for the line are perpetual, and include an extension of the present line from North East along the Buffalo road to the New York State line. This property is a part of the through line for which arrangements are now being made for high-speed interurban service between Erie and Buffalo.

The road is located upon the side of the highway, the alignment

streets are occupied in the towns. Chestnut poles, 7 ins. at the top by 30 ft. long, are used throughout, supporting No. 00 trolley wire and No. 0000 copper feeders.

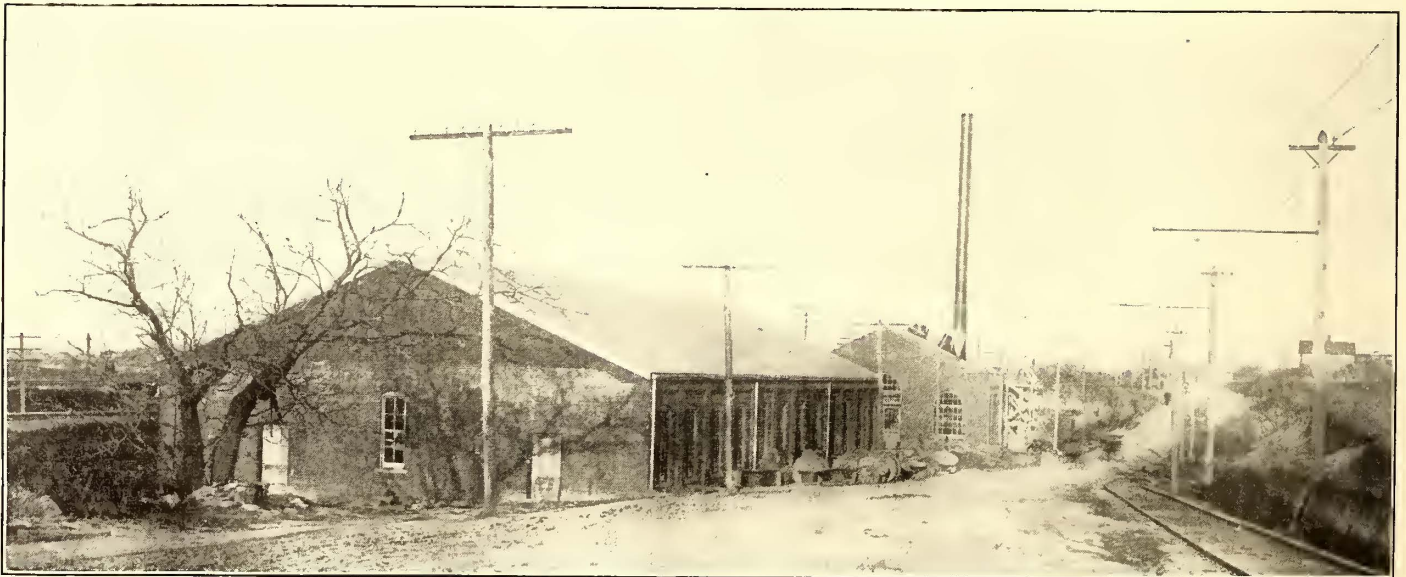
The power station building, located about midway of the line, near Harbor Creek, is a substantial structure of brick and steel, fireproof throughout, and measures 73 ft. x 53 ft. It contains two steam and electrical units of 300 hp each. Clark engines of the simple non-condensing type are used, direct connected to Westinghouse railway generators, of 200-kw capacity each. The boiler room contains two 325-hp Keeler water-tube boilers, with the necessary boiler feed pumps, feed-water heaters, pipes, etc.

The car house, located at the same place, and shown in the general engraving, is also of brick and steel, 56 ft. x 150 ft. It contains at present an equipment of eight cars with snow plow and sweeper. The cars are of the type adopted by the contractors as their standard high-speed interurban car, and have been placed in operation by them upon the Hampton Roads Railway, Jersey Central Traction Company and Westchester, Kennett & Wilmington Railway, which are now being constructed or operated by them. These cars are 45 ft. in length, vestibuled at each end, and



STANDARD CAR

contain twin Pullman windows, which give them an exceptionally attractive appearance. They have center aisles, cross reversible seats, upholstered, with a smoking compartment in each car. They are each equipped with four 35-hp Westinghouse motors, capable of maintaining a maximum speed of 40 miles per hour, and are mounted on Peckham trucks.



CAR HOUSE AND POWER STATION OF ERIE RAPID TRANSIT RAILWAY COMPANY

being very direct, and with practically no grades, except one short ascending and descending grade of about 4 per cent near North East, so that the run can be made in fifty minutes between the business centers of Erie and North East.

The track construction is of 60-lb. T and 70-lb. girder rail, connected with No. 0000 concealed copper bonds, and mounted on standard ties, 6 ins. x 8 ins. x 8 ft. long, spaced 2 ft. centers. At Harbor Creek is the under grade crossing, illustrated herewith. It has abutments of ashlar masonry, with steel girders, which support the tracks of the Lake Shore Railroad, while abutments of concrete and steel girders carry the Nickel Plate Road overhead at the same place.

The overhead construction is of standard flexible brackets on the side of highway and span construction, where the centers of the

The officers of the Erie Rapid Transit Street Railway Company are Thomas B. Hall, president; W. E. Hayes, vice-president, and T. Holland Paist, secretary and treasurer. The general office of the company is 653 Drexel Building, Philadelphia.

A traffic arrangement with the Erie Motor Company enables the cars of this company to be run without change from North East, through the city of Erie to the Lake Front, with free transfer of passengers to all parts of the city system. The line was financed, constructed and equipped by the Vandegrift Construction Company, 653 Drexel Building, Philadelphia. The line was constructed under the general supervision of H. A. Clarke, chief engineer of the Vandegrift Construction Company, and under the immediate direction of Captain G. D. Howell, constructing engineer for the same company.

**Railroad Tunnels Under the Hudson River**

Great interest was excited in railway circles last week by the announcement made on Dec. 12 of the proposal of the Pennsylvania Railroad to run its trains to New York City through a tunnel under the Hudson River, and the alleged purchase by the North Jersey Street Railway Company of the half-completed tunnel between Washington Street, Jersey City, and Christopher Street, New York. So far as the latter is concerned, President E. F. C. Young stated that he was unwilling to discuss the subject, except to say that an arrangement had been made with the owners of the tunnel, looking to the use of it by the trolley cars of the company, his reasons being that the plans of the company had not been completed. It was otherwise with the Pennsylvania Railroad Company, which made the following official announcement:

"The Pennsylvania Railroad Company is now prepared to carry out its policy, long since adopted, of extending its railroad into New York City, therein establishing a suitable passenger terminus for the accommodation of the public.

"To accomplish this on a comprehensive plan, the Long Island Extension Railroad Company will withdraw its application for powers to construct its terminal railroad, and in lieu of such independent construction it is now proposed to build, under the charter of the Pennsylvania-New York Extension Railroad Company, just organized, and a New Jersey railroad company, about to be organized, a through underground connection between the Long Island Railroad and the Pennsylvania lines in New Jersey, and to construct a proper and commodious joint underground terminal station in New York City for the Pennsylvania and Long Island roads.

"After years of exhaustive study the conclusion has been reached that a tunnel line, operated by electricity, is in every way the most practical, economical, and the best both for the interests of the railroad company and of the city. The line, as adopted, will traverse the city of New York from the Hudson River to the East River, and be under ground throughout, and at such depth as not to interfere with the future construction of subways by the city on all its avenues, similar to the one now building along Fourth Avenue.

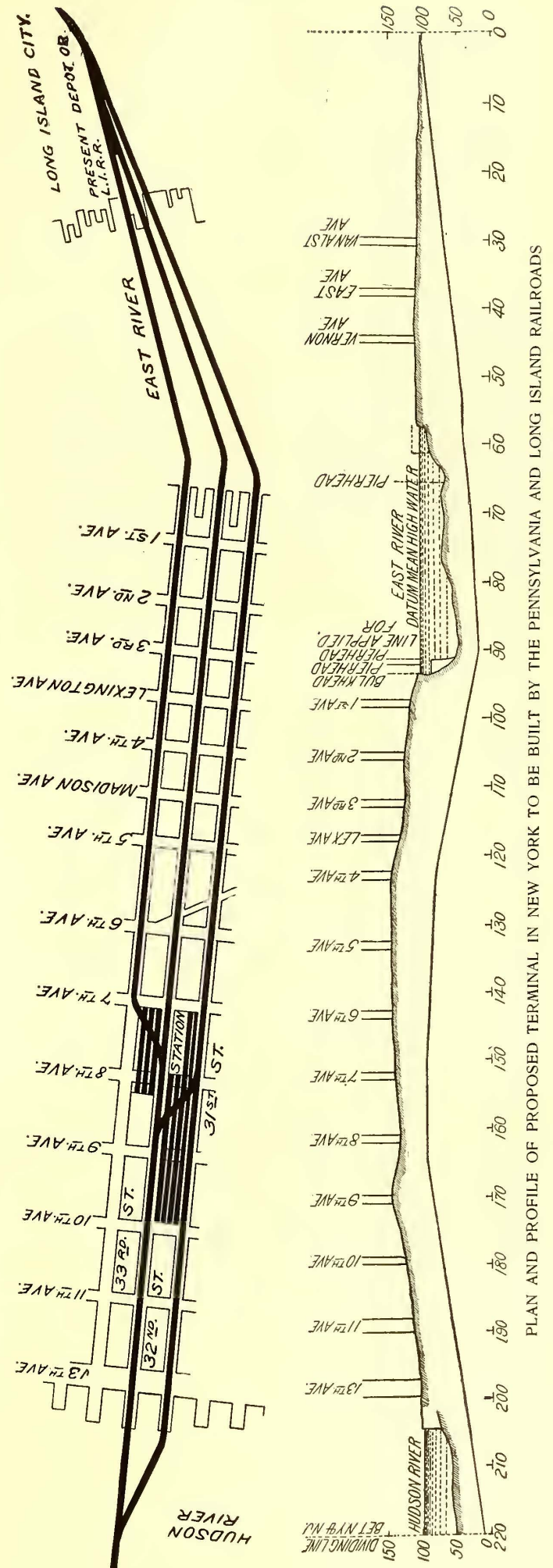
"As the railroad will be wholly under ground and operated electrically, in the same manner as the recently constructed Orleans Railway extension in Paris, it will not be objectionable in any way. There will not be any smoke, dirt, or noise, and as all the surface property may be built upon after being utilized underneath for railroad purposes, the neighborhood of the station will be improved instead of marred, as is so often the case when railroad lines are constructed on the surface or elevated.

"The company has acquired the bulk of its property for its principal station and means to go forward in the acquisition of such additional properties as will be required, either by purchase or condemnation, in the belief that the city authorities will meet the application in a spirit of fairness and expedite as much as possible this much needed improvement and great public convenience. Immediately upon the necessary authority being granted the work of construction will proceed and the whole line be completed and put in operation as soon as possible."

A plan and section of the proposed tunnel, from Long Island City to the New York and New Jersey State line in the Middle of the Hudson River, are presented herewith. The route in New Jersey, where connection will be made with the present tracks of the Pennsylvania Railroad, has not yet been announced. Two tunnels will be laid, however, certainly at first, and will run side by side under the river from a point near the Hoboken line to the State line. There they divide, one running to and under the bulkhead line at West Thirty-First Street and the other beneath the foot of West Thirty-Second Street.

The Long Island route will require, as shown, three tunnels. At the East River line they will turn northward at an angle of about 30 degs., converging at the same time, until they reach the block between Borden Avenue and Flushing Avenue, just south of the Long Island Railroad station and ferry slips, on the Long Island City side. The two southern tubes are brought together near Vernon Avenue, Long Island City. The northernmost joins them at East Avenue, and the three come to the surface on the Long Island's tracks, at Thompson Avenue and Purves Avenue, about a quarter of a mile back from the East River.

It is unlikely that any great proportion of the Pennsylvania's suburban trains will come into Manhattan, at least at first. For its express and through trains, two tunnels to Manhattan, it is said, will probably be enough. For the Long Island, on the other hand, two tunnels would not enable it to run all its express and suburban trains into Manhattan. The use of a third tunnel is made imperative by the large number of trains coming in and going out at the morning and evening rush hours, respectively.

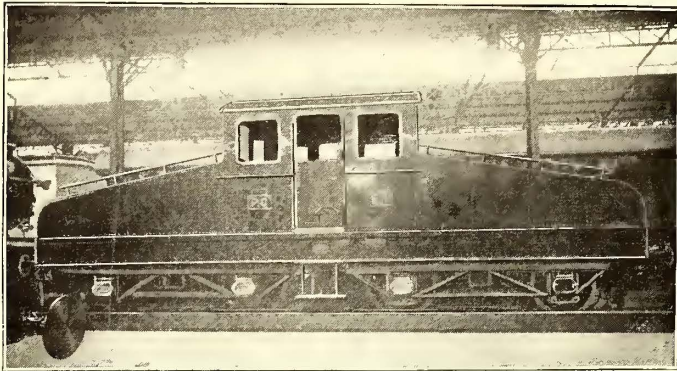


PLAN AND PROFILE OF PROPOSED TERMINAL IN NEW YORK TO BE BUILT BY THE PENNSYLVANIA AND LONG ISLAND RAILROADS

The tubes used are to be 18 ft. 6 ins., inside diameter, and the maximum grade will be  $1\frac{1}{2}$  per cent. For ventilation dependence will be had on the passage of the trains. Three years are estimated for the completion of the work, and the cost less than \$50,000,000. The tunnels in the North River will be some 25 ft. to 30 ft. below the bottom of the river, in soft mud, and will be trussed inside, and supported every 150 ft. on piers extending down to hard bottom.

As the practice of the Orleans Railroad Company, of Paris, has been referred to by the officials in the Pennsylvania Railroad in describing the plan which they have in mind for electric traction, some particulars of this installation are given below.

Eight electric locomotives are used, all built by the General Electric Company, of Schenectady, and supplied under the contract to the railroad by the French Thomson-Houston Company.



ELECTRIC LOCOMOTIVE USED ON THE ORLEANS LINE IN PARIS

A view of one of these locomotives is presented herewith. Each consists of a cab of steel, mounted on two trucks. The principal dimensions of the locomotives are as follows:

Length over all.....	9 meters (29 ft. 6 ins.)
Height of cab above the rail.....	1.4 meters (4 ft. 11 ins.)
Total height of locomotives.....	3.4 meters (11 ft. 6 ins.)
Wheel base of each truck.....	2.25 meters (7 ft. $4\frac{1}{2}$ ins.)
Weight of locomotive.....	45 tonnes (99,000 lbs.)

Each locomotive is equipped with four G. E.-65 motors, geared by a single reduction to the axle, and controlled by type L-7 controller. Each locomotive is capable of drawing, on a grade of 1.1 per cent, a train of 300 tons, not including the locomotive, in seven minutes from the Austerlitz station to that on the Quai d'Orsay, a distance of 3.8 km ( $2\frac{1}{2}$  miles.)

Current is supplied by means of a third rail, placed outside of the track, and which is used for the return circuit. For switching purposes at certain points, an overhead conductor, as well as a third rail in the center of the track, is employed, and for this reason the locomotive is equipped with an overhead contact device as well as six shoes. The maximum grade is 1.1 per cent.

### Outline of Franchise Ordinance for Chicago

The committee on local transportation of the Chicago City Council has decided upon the main points of an ordinance which will be presented to the Council, and be the subject for discussion at five public hearings to be held in the Council chamber. Four of these public hearings will be for the representatives of civic trade and labor organizations, and the last for representatives of the street railways. The provisions of the outline measure are as follows:

Five-cent cash fares and the sale of six tickets for a quarter.

Compensation to the city shall be a percentage on the gross receipts of the company, paid monthly.

Within the territory bounded by Sixteenth Street, Halstead Street and Chicago Avenue the companies shall use tracks and motive power jointly.

Universal transfers shall be provided that passengers may be carried from any point in the city to any other point for one fare.

The companies must pave, sprinkle, repair, clean, and keep clear of snow the portions of the streets lying within their right of way.

Franchises shall be for a period of twenty years.

Provision for ultimate municipal ownership also shall be incorporated.

Failure of the companies to observe the terms of the ordinance shall be ground for the forfeiture of the franchise.

### High-Speed Electric Road Under Construction Between Trenton and New Brunswick

Much interest has been attracted to the work which is being actively carried on in the construction of a high-speed electric railway across New Jersey, which will connect the cities of Trenton and New Brunswick in that State. The route selected after leaving Trenton is through Hamilton Square, Edinburg, Dutch Neck, north of Cranbury Village, near Dayton, and thence to Milltown, a distance of 23 miles. Both Trenton and New Brunswick will be entered over the local electric railway lines of those cities. Nowhere will the road strike any large towns between its terminal points, and it will traverse a country especially adapted for a high-speed railroad. As will be seen, the road is on the direct line between New York and Philadelphia, and will form an important link in such a through line, if it is built.

The line will be laid with 80-lb. rails, will be rock ballasted, and will be equipped with a third rail. It will be laid entirely upon private right of way, and grade crossings will be avoided wherever possible. The feed wires will be carried in a conduit alongside the track, thus avoiding the use of poles and cross connecting wires.

It is the intention of the promoters of the new line to use standard steam railroad passenger coaches of 60 ft. to 66 ft. in length. The cars will each be equipped with four motors, and will be run at a speed of as high as 77 miles to 80 miles per hour. In addition to the passenger service, it is proposed to operate a full freight service, first by steam and later by electric locomotives.

The line will be owned by the Trenton & New Brunswick Railway Company, which was incorporated Dec. 10 at Trenton, with \$1,000,000 capital. The road is being built by Stern & Silverman, of Philadelphia, the well-known electrical engineers, who have deposited with the proper authorities in Trenton \$46,000; that is \$2,000 per mile, as required by law.

### The Rockingham County Light and Power Company

The contracts for the equipment of a large plant at Portsmouth, N. H., with an initial installation of 2500 kw, have been recently awarded. The undertaking is for the purpose of operating some 150 miles of street railways and interurban lines in the vicinity of Portsmouth and Portland, Me., by a three-phase transmission line. It is expected that twelve sub-stations will be required in the development. The generator contracts, which have been awarded for the central power station, are for two General Electric 100-kw, 13,200-volt, three-phase, 25-cycle units, operating at 94 r. p. m. The General Electric Company has also secured the order for the excitors of these machines, consisting of two 100-kw, 125-volt dynamos. The generators will be direct connected to two 1600-hp Rice & Sargent engines, manufactured at the Providence Engine Works, Providence, R. I., and the excitors will be direct connected to two 12-in. vertical, compound Westinghouse engines. As the company expects to do a large lighting business, there will be installed with the initial equipment two 200-kw General Electric, 60-cycle, two-phase, 2300-volt alternators; one of which will be direct connected to a 70-in. Westinghouse engine, while the other will be driven by a motor.

The boiler plant, for which contracts have been awarded to Thayer & Company, Incorporated, of New York, will consist of five 520-hp Aultman & Taylor boilers of the Cahall type, equipped with Roney mechanical stokers, supplied by Westinghouse, Church, Kerr & Company. The plant will be furnished with a complete equipment of gravity buckets and conveyors by the Link Belt Engineering Company, of Nicetown, Pa. The engines are to be operated condensing, the pumps and condensers being supplied by the International Pump Company. Two Blake compound duplex pumps, one 10 ins. x 16 ins. x 8 ins. x 12 ins., and the other 14 ins. x 20 ins. x 26 ins. x 24 ins., are included in the order, and a Worthington 36-in. elevated central condenser.

It is estimated that before completion an investment of \$500,000 will be necessary to make the development. While at present but 2500 kw will be the maximum capacity, the buildings have been planned so as to permit of the output being trebled, and it is confidently expected that this increase will be necessitated in the near future. Prominent New York and Boston capitalists are interested in the scheme, and the engineering details are in the hands of Sanderson & Porter, engineers and contractors, of New York City. Work will be carried on with all possible expedition, and it is expected that everything will be in readiness to start up by the early summer of next year.

## London Letter

(From Our Own Correspondent.)

The Glasgow International Exhibition closed its doors on the evening of Saturday, Nov. 9, after the most successful exhibition that has ever been held in this country, and as a financial success is probably greater than any exhibition ever held in any country. The proceedings of the official closing ceremony was held in the Grand Hall on the evening of the closing day, the ceremonies of which were chiefly of a religious character. Lord Blythswood, president of the exhibition, occupied the chair, and he was accompanied to the platform by the Lord Provost Chisholm, chairman of the executive, and other office bearers. It is interesting to numerous than on any other day, the numbers being 173,266. From the opening of the exhibition, on May 2, till the closing, on Saturday, 11,497,222 persons passed the turnstiles, or more than double the number at the exhibition in 1888. The whole gate money taken amounts to £167,887, compared with £113,266 in 1888. It is expected that the exhibition will yield from £80,000 to £100,000, which will doubtless be applied to some good public purpose. On the Monday evening following, a reception was given to the guarantors of the exhibition by the president, the chairman, vice-chairman, and members of the executive council. The guests on arriving were received by the Hon. the Lord Provost, who wore the uniform of a Lord-Lieutenant, and by the vice-chairman, ex-Bailies John Shearer and J. H. Dickson. The Lord Provost, in the course of the evening, proposed a vote of thanks to the guarantors for the services which they had rendered, and more specially to the convenor of the committee—Bailie Shearer. Ex-Bailie Shearer, in replying, after tracing the history from the inception of the exhibition, in March, 1897, to the present moment, stated that the guarantee fund had amounted to the magnificent sum of £508,916. Other speeches followed, and ex-Bailie Dickson took the occasion of saying that all the accounts had not been yet received, but when these had been fully met the balance would not be £100,000, but that it would be a very handsome one. In the early part of the evening dancing was indulged in, and during the latter part of the evening refreshments were served at buffets on the main and upper floors to a gathering which could not have been much short of 3000 people.

Mr. Philip Dawson, who has been so long and honorably associated with the firm of R. W. Blackwell & Company, electrical engineers and contractors, has decided to disassociate himself with commercial business, and has resigned his directorship with that firm. Mr. Dawson will go into business as a consulting electrical engineer, and one of his first appointments has been that of consulting electrical engineer to the London, Brighton & South Coast Railway, along with Major Cardew. Mr. Dawson has also been retained by R. W. Blackwell & Company as their consulting electrical engineer. Mr. Dawson will doubtless receive the congratulations of his numerous friends for getting into a field most suited to his tastes and ability.

The London County Council, in addition to the contracts which we have noted above, is also paying particular attention to the whole tramway problem, and if one studies a map of London on which the various tramway lines are marked, it is interesting to note that all the tramway lines in the north come to within about half a mile of the river, and that all the tramways on the south side of the Thames also stop short of the river, though they are considerably closer. In this way, therefore, there is a belt about half a mile wide, which is not touched in any way by tramways, making, for the present, an impossibility for tramway communication between the north and south. As is well known, the London County Council is operating the tramways on the south side of the river, but the tramways on the north side of the river have been leased to the North Metropolitan Tramways Company, who are still operating them. There has been considerable dispute between the London County Council as to the operation of these tramways, the County Council wishing them to be converted to electric traction, and the Metropolitan Tramways Company refusing to do so, without ample compensation. The London County Council has now decided to give notice to the Tramways Company that they intend putting in force the provision of the lease by which they can insist upon electric traction being installed. The Metropolitan Company has refused to give any price for the surrender of the lease, but the lease contains clauses by which the County Council can enforce the introduction of electric traction, though they, themselves, will have to provide capital for the necessary work. Some months ago the County Council requested their chief engineer, J. W. Ryder, accompanied by A. Baker, the manager of the London County Council Tramways, and J. Allan Baker, a member of the London County Council, to proceed to the United States to investigate what had been done in that

country in the way of shallow subways, as it would appear that it is almost impossible to ever succeed in securing a cross communication between the northern and southern tramways on the surface. Mr. Ryder and his party visited Boston, where such a system is at work, and New York, where a rapid transit system is being put down on a shallow system, as opposed to our deep tubes in London. Mr. Benn, the chairman of the highways committee, has now presented a report to the Council on the proposal to construct the subways, which would also include gas and water pipes and electric wires for various purposes, and the Council have now reported: "That the Council do apply, in the next session of Parliament, (1) for powers to make subways in streets for the reception of pipes, wires and other things, where desirable, and for electrical traction and other purposes of locomotion; and (2) powers to construct a subway and to construct tramways therein for electrical traction from the Victoria Embankment, along Wellington Street, across the Strand, through the new street thence to Holborn, under Holborn and Southampton Row, and to take such tramways, by an inclined plane, to the street level at a point in the center of the carriage way of Southampton Row, and thence to join with the existing tramways belonging to the Council in Theobald's Road." The committee estimates that the work would cost about £320,000. This would be the first link between the northern and southern systems, and would, of course, be a tremendous boon, and would probably be followed by other methods of linking up the north and south sides of the river.

The arbitration proceedings between the Manchester Carriage & Tramways Company, who operated the tramway system in Manchester before they were taken over by the Manchester Corporation, and the Manchester Corporation has now been concluded. Sir F. Bramwell, the arbitrator, will probably make his award within the next few months. The company has claimed an amount of £510,000 as covering the system, which they have had to give up to the corporation, whereas the corporation contends that £140,000 will be ample for all that they obtain from the company in the condition which it now is. Many experts were brought from all over the country, and gave evidence, both as regards the cars, the horses, the track and everything pertaining to the system.

The Light Railways Commissioners have rejected the scheme of Middlesex County Council for electric cars from Wembley to Harrow, the scheme for tramways for Cricklewood to Harlesden, via Willesden, as well as a greater part of the scheme from Harrow to Edgware. It is interesting to know in connection with this that most of the opposition came from Harrow, one of the most important witnesses being Earl Spencer, chairman of the governors of Harrow school. It was claimed by him that the governors entertained serious fears of the effect of the tramways on the work and discipline of the school. Dr. Wood, the head master, also gave evidence to the effect that if Harrow were turned into a suburb it would be absolutely fatal to the school. It is a matter of history that Harrow defended itself against the invasion of steam railroads, so that history is somewhat repeating itself, as it has now successfully defended itself against the invasion of electric traction. It is safe to say, however, that it will not prevent electric tramways from reaching Harrow from some direction for very long.

J. B. Braithwaite, Jr., has resigned his seat on the board of the Brush Electrical Engineering Company, Ltd., Lord Vaux, of Harrowden, succeeding him as chairman. Mr. Reginald Ryley has been elected a director of the company in place of the late J. Slater Lewis.

The Corporation of Reading have taken over the tramways of Reading from the Tramways Company, whose headquarters are at Bristol, the company's agreement having run out. The amount paid was about £13,000, fixed by arbitration. The system of horse traction is to be superseded by overhead electric traction. On Thursday the corporation accepted the tender of Mr. Nuttall, of Manchester, for constructing the permanent way, about 11 miles, at a cost of just £83,000. All except the points and crossings are to be of English make.

During the fog days the underground railways, more especially the two-penny tube, have proved a great public boon. It has been impossible to run trains with any degree of reliability in the open, and journeys which in ordinary conditions should occupy only a few minutes, have occupied hours. In the city the work of many business houses has been handicapped owing to the absence of members of the staff who have been unable to be present at the usual time in the morning. Cabs and busses during some of the time were absolutely impossible, and had to be withdrawn from service, some busses even "camping out" all night, rather than risk the journey home.

This month the directors of the British Electric Traction Com-

pany gave a banquet at the Castle Hotel, Taunton, to celebrate the successful inauguration of the system of electric tramways, which has recently been completed in the town. At present the line only runs through the principal thoroughfares from the Great Western Railway station to the eastern boundary of the borough, but it is contemplated to effect important extensions at an early date. The provisional order was obtained by the Taunton & West Somerset Electric Railway & Tramways Company, but the work was afterward taken over and successfully carried out by the British Electric Traction Company.

Brighton will be in a position within the next few days to inaugurate its new system of electric tramways which have been installed under the superintendence of Mr. T. B. Hoiday the tramway's engineer and manager. The total length of the tramway laid at present is about 12½ miles of single track or 6½ miles of road. A most unusual method has been adopted in the laying of the track, steel girders having been placed under the rail-out, and it is expected that this will insure perfect steadiness and stability on the lines. The girder rails are 101 lbs. to the yard and each 40 ft. long and thoroughly bonded throughout. The current is furnished from the electric light generating station in North Road where, in an annex, three units have been installed, consisting of engines and generators, one being 325 kw capacity and the smaller sets of 175 kw each. The cars are 28 ft. 10 ins. in length, 6 ft. 6 ins. in width and 6 ft. 7 ins. in height and accommodate 50 passengers, 24 inside and 26 out. An official inspection of the road by the Board of Trade has already taken place, and as soon as a report has been presented and the Board of Trade has passed the sections, cars will be put in service. Arrangements are already being made for quite large extensions. The contractors engaged on the work are: Permanent way and wood paving, Messrs. Macartney, McElroy & Company, London; overhead construction and equipment, Messrs. R. W. Blackwell & Company, London; feeder and distributing cables, St. Helen's Cable Company, Warrington; tramcars, British Westinghouse Company, London (the bodies being built by Mr. George F. Milnes & Company, of Hadley, Salop); rails, Messrs. Bolckow, Vaughn & Company, Middlesborough; points, crossings, and tie-bars, Messrs. Askham Bros. & Wilson, of Sheffield; steam dynamos and booster, Messrs. Bruce Peebles & Company, Glasgow; engines, Messrs. Willans & Robinson, Thames Ditton. The tramways depot has been built by corporation workmen.

It is reported that two of the proposed tube schemes for London have been combined, viz., the Brompton & Piccadilly and the Great Northern & Strand lines so that they would form a through route from the northern suburbs to the West End and Kensington. The Brompton & Piccadilly line scheme was intended for a railway from South Kensington by way of Knightsbridge and Hyde Park corner to Piccadilly Circus, the length being only about 2 miles. The Great Northern & Strand line is a scheme for a line from the Woodgreen station on the Great Northern Railway by way of King's Cross to Russell Square and High Holborn. It will be necessary, therefore, to have a short link from Piccadilly Circus to run under Shaftesbury Avenue to High Holborn, and a bill will, in all probability, be introduced into Parliament next session for this purpose. At Piccadilly there will be an exchange station with the Baker Street and Waterloo Tube, while doubtless a station will also be arranged with the Charing Cross, Euston & Hampstead authorized tube near Tottenham Court Road. It is rumored that Mr. C. F. Yerkes is interested in this scheme, and there is no doubt but that a scheme of this kind will sooner or later be put through as there is much need for a communication between the northern suburbs and the West End.

The City & South London, which was the first tube to be opened in London on Nov. 4, 1890, is rapidly completing their extension from Moorgate Street to Islington, and it is expected that this new addition to the line will be opened to the public within the next few weeks. This system now extends from Clapham in the southwest through the southern part of the city and across the river in the vicinity of London Bridge. In the last year or so an extension from London Bridge was opened to Moorgate Street and now this remaining extension is on the eve of being opened. The total distance will be 6½ miles, and is evidently expected that it will largely increase the receipts of the company. Stations have been provided at Old Street, City Road and the "Angel," which will be the station for the Agricultural Hall, one of the largest halls in London, at which a great many functions are now given in the course of the year. The depth of the rail from the surface at the "Angel" will be about 100 ft., and electric lifts of ample capacity have been provided. Mr. T. C. Jenkin has been appointed manager of the road recently. Anticipating the opening of the extension, the company has ordered a complete set of eleven trains, the carriages of which have been

built by the Bristol Wagon Company and the cars of which are much lighter than the old ones and more comfortable, better upholstered and are much more satisfactorily lighted. There will now be four cars to each train instead of three. It is interesting to note that in 1890 the company started with 14 locomotives and 30 carriages, and at the present time have 53 electric locomotives and 123 carriages, so that they are now in good condition to take care of a large increase in their business.

It is now quite decided that the J. G. Brill Company, of Philadelphia, who have had an office in London for some years under the able management of Maskell E. Curwen, will establish a factory in this country and a site has been selected in the city of Preston in the Midlands for that purpose. Preston already contains two large factories connected with electrical enterprise, the Electric Railway & Tramway Carriage Works, and also the English Electric Manufacturing Company, so that with the addition of this factory for trucks it will become quite an important electrical center from a manufacturing point of view.

Mr. Joseph Pogson has resigned his position as tramways manager to the Huddersfield Corporation, and Mr. H. N. Thomas, the electrical engineer at the power station at Longroyd Bridge, has been appointed *pro tem*, to superintend the tramways traffic in his place.

The Simplex Steel Conduit Company have sent out some supplementary price sheets, showing their heavy enameled conduit, and their new screwed unbrazed conduit, which they claim is the cheapest screwed conduit on the market.

The Tyneside Tramways & Tramroad Company has been incorporated by act of Parliament for the purpose of constructing and workings tramways from Wallsend to Willington Quay and North Shields, and a tramroad from Wallsend to Gosforth.

The total length of the route from Gosforth to Wallsend is 3½ miles, and from the Wallsend boundary to the terminus at North Shields 4½ miles. At the North Shields end the system will be fed by the Tynemouth Tramways which run from Whitley Bay along the coast through Tynemouth to North Shields to the point where the Tyneside Tramways commence and at the Gosforth end by the Newcastle Corporation Tramways which will communicate with all parts of Newcastle. The Newcastle Corporation are under a pledge to Parliament to extend their tramways to Walker, and when these extensions are completed their lines will join those of the company, and will provide a direct communication between Newcastle, North Shields and Tynemouth; they will thus serve as an additional feeder of this company's system. By the company's system, Newcastle and Gosforth, with a population of 214,803, will be connected with North Shields, having a population of 51,514, and the tramways pass through one of the most important industrial districts in England. The route followed by the tramroad between Gosforth and Wallsend passes through open country in every way adapted for the erection of residences for workmen and others whose occupation lies in the riverside district, and who will thus be brought into easy and rapid connection with the various works and with Newcastle, Gosforth, North Shields, and Tynemouth and the coast. The trams will also prove of great advantage to the residents of Wallsend and Willington Quay, by providing them with a regular, rapid and cheap means of intercommunication, the lack of which is now so much felt.

The capital required for land to be purchased, erecting car sheds, laying and equipping the lines, providing rolling stock, including the necessary working capital, is estimated at £120,000, of which permanent way and overhead lines will take about £90,000. As a third of these lines will be constructed as tramroad along the Old Coxlodge Waggon Way, so avoiding the necessity of paving, and as the company do not require to erect a generating station, the cost of construction and equipment will be much lower than is generally the case. The engineers are of opinion that the lines can be opened for traffic within less than twelve months of their obtaining possession of the necessary land.

The directors of the company are William Armstrong Watson-Armstrong, John Hobart Armstrong, George Edward Henderson, Summers Hunter, John Theodore Merz, D. C. L.; John Henry Brunel Noble, James Tennant, J. P.

At a recent meeting of the Manchester Town Council among the transactions was the acceptance of a tender from Messrs. W. T. Glover & Company for the supply, delivery and laying of high-tension, three-core, three-phase feeder cables, low-tension distributors, tramway feeders, telephone and potential wires, arc lighting cables, iron troughs and earthenware pipes, etc., from the switchboards at the Stuart Street generating station to the switchboards in the distributing sub-stations. The amount of the contract was over £130,000. About 140 miles of cable will be required and 100,000 yards of cast-iron troughing.

A. C. S.



Report of the Massachusetts Electric Companies

The second annual meeting of the Massachusetts Electric Companies was held in Boston Dec. 18. President Gordon Abbott stated that the experience in the first year's operation had shown so decisively the advantages of a policy of consolidation that it has been steadily followed, and with the consent of the Railroad Commissioners, companies have been merged, until to-day, instead of the fourteen operating companies of a year ago, there remain only three: The Boston & Northern, the Old Colony, and the Hyde Park Electric Light Company, together with two other companies recently acquired. The Hyde Park Electric Light Company has not been consolidated with the other two properties. In addition to furnishing power to a portion of the line of the Old Colony Company, it does a commercial lighting business, and under existing laws cannot be consolidated with the street railway company to which it supplies power.

By the purchases during the past year, and new construction, the mileage of the companies comprising the system of the Massachusetts Electric Companies has been increased by 32 miles to a total of 819.585 miles of track, located in twenty-two cities and sixty-six towns, with an aggregate population of over one million people, exclusive of Boston. There has been expended by the various companies during the past year \$1,339,477 for improvement and reconstruction; with this money 17.439 miles have been constructed, either with heavy girder or with heavy T-rail, and 10.168 miles have been reconstructed with the same heavy T-rail; forty-two new cars have been purchased, and eighty-five old cars reconstructed and increased in size; additional machinery has been installed at Brockton and Lawrence, and a new car house, sixty cars in capacity, has been built at Haverhill; while 214 new motors and equipments have been provided, and 106 miles of new feed wire has been strung. In determining this aggregate it may be said that the entire expenditure on reconstruction of equipment has been charged off, and on track work 25 per cent has been charged to betterment, and 75 per cent to reconstruction, charged against the surplus. In the report of last year reference was made to the system of providing accident insurance for all the companies in which you are interested, through the medium of a mutual insurance company, owned and controlled by the companies insured, and taking no risks outside of those companies. This company has continued its operations very successfully during the past year, as will be seen by a report annexed hereto.

The premiums collected during the past year have been at the rate of 5 per cent of the gross earnings of all the companies insured. It is believed by your trustees, and the belief is supported by the results of the operations of the year, that this premium is too high, and the question of declaring a dividend to the companies insured was seriously considered before the books of the year were closed.

CONSOLIDATED INCOME ACCOUNT

Of the Four Operating Street Railway and Electric Light Companies Controlled by the Massachusetts Electric Companies for the Year Ending Sept. 30, 1901

Earnings .....	\$5,778,133.44
Expenses .....	3,915,485.74
Net earnings .....	\$1,862,647.70
Charges .....	937,206.12
Net divisible income .....	\$925,441.58
Dividends .....	779,462.00
Surplus for the year.....	\$145,979.58

\* CONSOLIDATED BALANCE SHEET

Of All Street Railway and Electric Light Companies Controlled by the Massachusetts Electric Companies for the Year Ending Sept. 30, 1901

ASSETS	
Property .....	\$29,370,508.31
Cash .....	513,114.51
Accounts receivable .....	226,218.01
Coupon deposits .....	110,960.00
Sinking and redemption funds.....	92,860.29
Prepaid taxes, insurance, interest and rentals.....	102,077.88
Material and supplies .....	546,686.57
Total assets .....	\$30,962,425.57

LIABILITIES

Capital stock .....	\$12,988,200.00
Funded debt .....	13,813,500.00
†Notes payable .....	1,990,175.62
Vouchers and accounts payable .....	499,421.56
State and local taxes .....	237,164.98
Coupons outstanding .....	110,585.00
Dividends declared, unpaid .....	530,405.00
Accrued interest, rentals and excise tax.....	305,290.38
Renewal funds .....	21,396.64
Surplus .....	466,286.39
Total liabilities .....	\$30,962,425.57

\* As compared with previous year, does not include the Nashua Street Railway, leased to and operated by the Boston & Northern Street Railway Company, as interest has been sold; includes the Lawrence & Reading, the Middleton & Danvers, the Haverhill & Andover, and the Reading, Wakefield & Lynnfield street railway companies, acquired during the year.

† Of the amount of \$1,990,175.62, \$607,865.27 were held either by the Massachusetts Electric Companies or by the Massachusetts Street Railway Accident Association.

MASSACHUSETTS STREET RAILWAY ACCIDENT ASSOCIATION

Statement of Profit and Loss Year Ending Sept. 30, 1901

INCOME	
Premiums .....	\$273,748.47
Interest .....	10,142.84
	\$283,891.31
EXPENSE	
Damages, employees .....	\$2,439.58
Damages, passengers .....	83,153.98
Damages, trespassers .....	25,703.77
	\$111,297.33
Salaries, wages and legal expense.....	\$46,196.52
Office expense .....	1,270.95
Miscellaneous expense .....	7,558.64
	55,026.11
	166,323.44
Surplus for the year.....	\$117,567.87

MASSACHUSETTS ELECTRIC COMPANIES

Statement of Profit and Loss Year Ending Sept. 30, 1901

INCOME	
Dividends on stocks owned.....	\$777,841.00
Miscellaneous interest on notes, etc. (net).....	41,317.63
Total income .....	\$819,158.63
EXPENSE	
Salaries—general officers .....	\$9,000.00
Printing and stationery .....	1,642.30
Legal expenses .....	6,565.00
Miscellaneous expenses .....	14,456.25
Total expense .....	31,663.55
Net income for the year.....	\$787,495.08
CHARGES	
Interest on coupon notes .....	\$89,690.63
	\$697,804.45
Dividends (4 per cent on preferred shares).....	602,296.00
Surplus for the year .....	\$95,508.45
Surplus Sept. 30, 1900.....	\$361,833.79
Less	
Discount on coupon notes .....	\$67,500.00
Preferred-share dividend adjustment.....	200,765.33
Net debits (principally interest adjustments) .....	17,009.84
	285,275.17
	76,558.62
Surplus Sept. 30, 1901.....	\$172,067.07

MASSACHUSETTS ELECTRIC COMPANIES

General Balance Sheet, Sept. 30, 1901

ASSETS	
Sundry stocks, etc., in treasury.....	\$28,544,979.42
Stocks deposited under indenture of trust Dec. 31, 1900, to secure issue of coupon notes.....	2,711,000.00
Cash .....	231,876.20
Notes and accounts receivable.....	916,522.27
Cash deposited to pay dividends and coupons.....	5,908.32
Total assets .....	\$32,410,286.21

LIABILITIES	
Preferred shares .....	\$15,057,400.00
Common shares .....	14,293,100.00
Coupon notes .....	2,700,000.00
Vouchers and accounts payable .....	861.82
Accrued dividend on preferred shares.....	150,574.00
Accrued interest on coupon notes.....	30,375.00
Dividends and coupons uncalled for.....	5,908.32
Profit and loss surplus .....	172,067.07
<hr/>	
Total liabilities .....	\$32,410,286.21

### Recent Contracts in London

The most interesting contracts that have yet been awarded in London for traction purposes are those which have just been given out by the London County Council for the equipment of their tramways from Westminster, Waterloo and Blackfriars Bridges to Tooting, which lines will be the first of the County Council tramways to be transformed from horse haulage to electric traction. A few days ago the County Council awarded to J. G. White & Company, of London, a contract for the sum of about £171,000, which covers the track laying and road work for approximately 14 miles of track, all on the conduit system. This contract, however, we understand, does not cover the rails, which have been ordered direct from Walter Scott, Ltd., of Leeds, for the sum of £25,442, as well as the slot rails, etc., for £25,334.

A few days later the County Council awarded the contract for the complete generating plants for the above tramways to Messrs. Dick, Kerr & Company, of London, who will install apparatus manufactured by the English Electrical Manufacturing Company, of Preston, coupled to engines manufactured by Ferranti, Ltd., of Hollinwood, Lancashire. The contract is for three-phase 1500 kw machines and covers electric plant for two generating stations, one for a direct-current temporary station, to be erected near Loughborough Junction, and a three-phase plant required for the permanent generating station, to be erected at Greenwich, together with the necessary sub-stations in connection with the electrification of the tramways above referred to. Dr. A. B. W. Kennedy, the Council's consulting electrical engineer, who has charge of this first section of the work of the County Council in reconstructing their tramways reported fully to the County Council on the tenders. For the supply of the continuous-current plant twenty-nine firms tendered, though with the alternatives which most of the companies proposed it made a total of 212 proposals. That of Messrs. Dick, Kerr & Company, for £25,964, was accepted. For the supply of three-phase plant, which, of course, is the more interesting of the propositions, twenty-two firms tendered, with alternate proposals, bringing the total number up to 160. Messrs. Dick, Kerr & Company also secured the contract for this plant, the price being £46,425, which was not by any means the lowest price, some of the Anglo-American companies and Anglo-Germans being lower. The County Council, however, in carefully considering the whole proposals, decided to give the contract to Messrs. Dick, Kerr & Company, considering that their tender was the most suitable for the requirements of both plants. It is interesting, therefore, to note that both for the temporary continuous-current plant and the permanent three-phase plant that the generators will be built by the same firm, and that the engines will also be built by the same firm, and it is expected that they will derive distinct advantages from having apparatus by the same manufacturers in both stations from the point of view of convenience, and also economy in work, superintendents, supply of duplicate parts, etc., etc. Messrs. Dick, Kerr & Company have undertaken to deliver the continuous-current plant in ten months, and the three-phase plant within eighteen months from the date of order, and this time in both cases is less than what was asked for when the tenders were advertised for. In addition to the main engines, Messrs. Dick, Kerr & Company will sub-let to Belliss & Morcom, Ltd., of Birmingham, the manufacture of the auxiliary engines necessary.

### Fire at Chicago

The Lincoln Avenue car house of the Chicago Union Traction Company, of Chicago, Ill., situated at Lincoln Avenue and Wainwright Avenue, was completely destroyed by fire on Dec. 15. The fire started in the early morning, from an unknown cause, and was discovered by the watchman, who immediately sent in an alarm. The firemen promptly responded to the call, but in the intensely cold weather the hydrants had been frozen, and before water could be directed at the building the flames had made such headway that they were beyond control. Working in shifts, the firemen made a heroic struggle, but to no avail. It is unofficially

stated that 180 cars were in the building at the time of the fire, not one of which was saved. On the ground floor of the building were the winter cars, being used regularly, while on the second floor were the summer cars. Cable cars are operated on Lincoln Avenue, and the destruction of the equipment of one of the most important cable lines in the city caused some interference with traffic, but by taking cars from other lines, operations were resumed on Dec. 16. The loss is estimated at \$165,000, covered by insurance. A car house on the same site was burned in 1895.

### Long Cars for the Chicago Union Traction Company

Master Mechanic F. T. C. Brydges and Assistant J. Millar are now completing a lot of thirty long cars for the Chicago Union Traction Company at the Fortieth Avenue shops of that company. These cars are 30 ft. long inside the bodies, and something over 40 ft. over all. They are being put on Chicago Truck Company's trucks, with four G. E.-52 motors. Christensen air brakes, with independent motor compressors, have been adopted. It will thus be seen that the Chicago Union Traction Company is falling in line in the movement toward long double-truck cars, which is so general all over the country, and which is gaining strength now that four-motor equipments in place of two motors are removing the objections that formerly held against double-truck cars on the point of traction. The Chicago Union Traction cars will not, however, have cross seats, as the new Chicago City Railway cars, but will have side seats.

### The Aurora, Elgin & Chicago Railway Plans

The Aurora, Elgin & Chicago Railway, which has acquired the existing electric railway between Aurora and Elgin and is building on its own right of way from the terminus of the Metropolitan Elevated road in Chicago to Wheaton, with lines from Wheaton to Aurora, is to employ a third rail of standard T-section weighing 100 lbs. to the yard. This third rail will be placed alongside of the track, in the same position as on the elevated roads. It will be insulated by wood-block insulators. The track rails are to be 80-lb. in 60-ft. lengths. All of the lines are on the company's own private right of way and laid out for very high speeds.

The rolling stock will consist of cars and trucks built on M. C. B. lines, and each car will have four 125-hp. motors under it. The cars will be equipped with the General Electric train control system, so that they can be operated in trains or single. Motors are to be geared to maintain a speed of 70 miles per hour on a level with the weight of car under which they are to be put, and there is nothing in the construction of the road that will prevent the attainment of this speed on long stretches between stations.

When this road is in operation it will probably make the highest schedule speed over much of its line of any electric road in the United States. The power station is being built at Batavia on a river, and from here power will be transmitted at 26,000 volts to six sub-stations. The present power houses supplying the Aurora and Elgin line will be discontinued.

### Electricity in Berlin

From the annual report, just published of the Berlin Elektrizitäts-Werke, which supplies power for lighting and miscellaneous purposes in Berlin, as well as to the street railway companies, it appears that there are supplied from its generators 353,253 arc and 14,274 incandescent lamps, besides 6426 electric motors of 21,448 aggregate horse-power. Of this total 49,949 arc lights, 1878 incandescent lamps, and 1462 motors represents an increase during the past year.

One year ago, the aggregate electrical energy supplied for tramway service was 8000 hp; this has now increased to 16,800 hp. When the principal city lines were changed from horse to electric equipment, the municipality held out firmly against the use of overhead conductors in the central districts. The trolley was tabooed on all except suburban routes, so that cars intended for use on lines running from the central portions of Berlin to outlying districts were equipped with the mixed system—trolleys for suburban sections and storage batteries for the downtown portion of their route. The cars became badly stalled during the snow storms of last year, so that overhead rights were granted, and substantially all of the lines are now equipped with the trolley. This vastly improved service—especially the greatly accelerated speed on the suburban lines—has practically revolutionized the conditions of public transportation in Berlin, and has drawn a con-

stantly increasing percentage of population to Hallensee, Charlottenburg, Friedenau, Wilmersdorf, and other populous towns which have sprung up in recent years within a radius of 7 miles or 8 miles from the cathedral of Berlin.

Of the entire consumption of current, 21 per cent, out of a total of 89,668,258 kw-hours, is used for lighting, 22 per cent for miscellaneous power purposes, while the remaining 57 per cent are charged to the tramway lines.

### Street Railway Patents

[This department is conducted by W. A. Rosenbaum, patent attorney, 177 Times Building, New York.]

UNITED STATES PATENTS ISSUED DEC. 10, 1901

688,346. Trolley Pole for Electric Cars; P. Scholtes, Mount Oliver, Pa. App. filed Sept. 16, 1901. A locking device mounted near the wheel locks the wire in the wheel until the cord is pulled to release it.

688,351. Brake; F. B. Skidmore, Milwaukee, Wis. App. filed June 15, 1901. A pivoted actuating lever, the short arm of which is connected to the brake and the long arm projecting across the path of a roller. Means for actuating the roller in a straight line, and a push rod connecting the latter to an actuating crank.

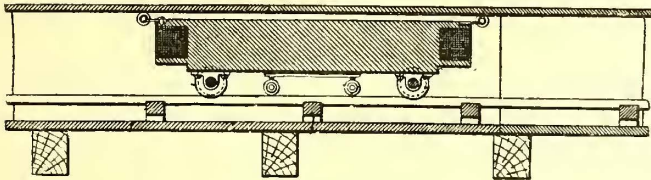
688,456. Electromechanical Automatic Street Railway Switch; W. J. Bell, Los Angeles, Cal. App. filed July 2, 1901. The switch is thrown by pushing a button on the car, which causes a magnet to move the switch point. After the car passes it automatically operates a mechanical device to return the switch point.

688,486. Trolley Contact Pole; E. B. Robertson, Philadelphia, Pa. App. filed July 12, 1901. The trolley pole is jointed near the middle, and a spring connects the two parts together, and acts in conjunction with the main spring of the pole to make the wheel hug the wire.

688,506. Electrical Controller Attachment; G. L. Fairbrother, Thompsonville, Conn. App. filed April 19, 1901. A detachable plate is secured to the head of the controller, and provided with means for locking the handle at each point, it being necessary for the motorman to release before he can move the handle from one point to the next.

688,509. Trolley; F. W. Garrett, Johnstown, Pa. App. filed Dec. 1, 1899. A contact spring is attached to the trolley wheel and drags against the harp as the wheel rotates.

688,568. Trolley; M. J. Wilson, Painesville, O. App. filed Aug. 12, 1901. Details.



PATENT NO. 688,572

688,572. Electric Railway; F. M. Ashley, Brooklyn, N. Y. App. filed Feb. 26, 1898. The switch magnet, which controls the current from the feeder to the section, is mounted on a carriage, which moves through a conduit under the attraction of a magnet carried by the car.

688,629. Trolley Wheel Guard; E. W. Gailey, Allegheny, Pa. App. filed May 13, 1901. Flexibly mounted guard fingers flanking the wheel.

688,686. Car Truck; C. W. Powell, Green Island, N. Y. App. filed Feb. 9, 1901. The truck comprises two frames of rectangular form, one below being mounted upon the axles, and the one above being longer than the first, and sustaining the car body, and connected with the lower frame by leaf spring.

688,795. Vehicle Brake; B. W. Scott, San Jose, Cal. App. filed March 14, 1901. A wheel or roller in connection with a brake-shoe is acted upon by an inclined surface to force the shoe to its work.

688,797. Electric Railway Switch; P. Siegel, New York, N. Y. App. filed June 13, 1901. Details.

### ENGINEERING SOCIETIES

NEW YORK ELECTRICAL SOCIETY.—The 219th meeting of the Society will be held at the College of the City of New York on Thursday, Dec. 19, at 8 p. m. The paper of the evening will be presented by Prof. D. C. Miller, of the Case School of Applied Science, on the subject of "Polarized Light." Ladies are invited.

NEW YORK RAILROAD CLUB.—The next meeting of the club will be held at 349 Madison Avenue, New York City, on Thursday evening, Dec. 19. The paper of the evening will be entitled "Harbor Lighterage and Transportation," and presented by H. L. Joyce, manager Manhattan Lighterage & Transportation Company.

### PERSONAL MENTION

MR. J. G. WHITE, who has been seriously ill with pneumonia, is improving in health.

GENERAL OTTO H. FALK, of the Falk Company, was married Dec. 10 to Miss Elizabeth A. Vogel, of Milwaukee.

MR. LEMUEL BANNISTER, for the last five years general manager of the British Westinghouse Company, has resigned his position in all the Westinghouse companies.

MR. J. E. DERRICK, general superintendent of the Youngstown & Sharon Railway, of Youngstown, Ohio, has resigned. Mr. Derrick's successor has not yet been appointed.

MR. JOHN W. HERBERT, of New York, has been elected president of the Niagara Falls, Wesley Park & Clifton Tramway Company, and the Niagara, St. Catherines & Toronto Electric Railway.

MR. ROYAL H. HOLBROOK, manager of the Ottumwa Electric & Steam Company, of Ottumwa, Ia., made the Chicago office of the STREET RAILWAY JOURNAL a visit recently. Mr. Holbrook reports that his company is extending several of its city lines.

MR. THOMAS C. BARR has been elected president of the Elizabeth, Plainfield & Central Railway Company, of Elizabeth, N. J., to succeed Mr. David Young. Mr. Barr was formerly president of the Essex Passenger Railway, and had previously been identified with traction interests in Worcester, Mass.

MR. W. F. D. CRANE has joined the engineering forces of Sanderson & Porter, 31 Nassau Street, New York City. Mr. Crane was formerly manager of the electrical department of the H. W. Johns Manufacturing Company, and was recently one of the engineers for the Electric Vehicle Company.

MR. M. ENYO, chief engineer of a company, of Tokyo, Japan, which contemplates the construction of the first street railway in that city, and has already awarded part of the contracts for the same, is in this country. Mr. Enyo may be found at the offices of Mitsui & Company, or McIntosh, Seymour & Company, New York.

MR. FRANCIS H. SHEPARD, who has recently been abroad in the interests of the Sprague Electric Company, has just returned to this city. It is announced that Mr. Shepard has resigned his position with the Sprague Electric Company, where he has acted as assistant to Mr. Frank J. Sprague in his engineering work, and has accepted a very responsible position with an English syndicate, to carry on important work in heavy electric traction in that country. Mr. Shepard will return to England in February.

MR. HENRY C. PAYNE, of Milwaukee, Wis., has been appointed Postmaster-General by President Roosevelt, to succeed Mr. Charles E. Smith, resigned. Mr. Payne is vice-president of the Milwaukee Electric Railway and Light Company, vice-president of the Milwaukee Light, Heat and Traction Company, and a director of the North American Company, and has been prominent in national politics for some time, even now being chairman of the State committee. Mr. Payne is a man well fitted for the position, for he has an extended knowledge of public affairs, and possesses rare executive ability.

MR. GUSTAV LINDENTHAL, the New York consulting engineer, has been appointed Commissioner of Bridges of that city. Mr. Lindenthal received his education and early practical training in Austria and Switzerland, coming to this country in 1874, and being made a citizen of the United States in 1879. There was considerable objection to the placing of a resident of Manhattan in charge of the bridges, but Mayor-elect Low in announcing the appointment justified his action by laying stress on the fact that obstruction to traffic occurred mostly at the Manhattan terminals of the bridges, and that it was only by acceptance by both boroughs that plans for improving transit facilities could be carried out. Mr. Lindenthal is president of the North River Bridge Company, a company holding authority to build a bridge at Twenty-Third Street across the Hudson River, and is closely associated with the Pennsylvania Railroad, having acted as its consulting engineer for many years.

## FINANCIAL INTELLIGENCE

### THE MARKETS

#### The Money Market

WALL STREET, DEC. 18, 1901.

The tightening of the money rate, so clearly foreshadowed in last week's conditions, has come to pass during the present week. Call money has loaned as high as 12 per cent, with an average of 7, while 6 per cent is asked for all classes of time loans. The unusually high charges reflect the reduced surplus of the banks, and the desire of bankers with an enormous shifting of credits in prospect for the closing days of the year, to restrict new borrowing to only the most urgent demands. There is still nothing to be feared in the way of a really serious stringency, and the money position, as a whole, may be said to have improved during the week. Saturday's statement of bank averages showed a considerably smaller loss in cash than had been expected, and what was more important, it showed that the greater part of the loss had been offset by a decrease of \$11,000,000 in the loan account. This decrease represented the liquidation of speculative holdings, which has been going on extensively during this month's decline on the Stock Exchange. In other words the money market tension is working out its own cure in the most natural manner—through the enforced repayment of its least consequential speculative assets.

To complete the cure the advance in local money rates has automatically checked gold exports to Europe, and has induced the interior markets to finance their own unexpected speculative requirements in preference to drawing upon their New York deposits. Thus, two of the most formidable sources of drain a week ago have been removed. The third and most important—the eternal Treasury surplus—will during the next week be kept down by the anticipatory disbursements on the government interest, and in the subsequent weeks, during which money affairs are likely to be somewhat critical, it is possible that fresh gold arrivals on the Pacific Coast will be a sufficient offset. The chances are favorable to the local money markets getting into the smooth water of January without anything more serious happening than has been witnessed already. It is evident that the supply of lendable funds will continue very meagre, however, for another fortnight; that any new borrowing outside the routine commercial channels will be discouraged, and that even the borrowers of the most necessary character will have to pay a high premium.

#### The Stock Market

The improvement in the money position, with its accompanying assurance that no serious stringency will occur, is responsible for the stronger undertone of the stock market in comparison with a week ago. Technical conditions have been benefited in the way they always are when liquidation of speculative holdings has been in progress. A number of the Wall Street cliques which were compelled to take on too heavy a load in their unsuccessful efforts to bid up prices early in the month have been forced to sell out, and the floating supply of stocks, in consequence, has shifted into stronger hands. The market, as a whole, appears therefore to have reached a comparatively safe position. But it is plain that with the narrow surplus reserve of the banks, and with the uncertainty of whether available capital will be enough to accommodate even the necessary demands of the first-of-the-year settlements, there is no material yet awhile to start a fresh speculative campaign upon. The general dealings, moreover, are restricted by the mystery surrounding the copper situation, and especially by the uncertainty of the Amalgamated Copper Company's quarterly dividend, which at this writing still remains to be acted upon. Superficially the market reflects a disposition to break away from the whole copper imbroglio, and there is no doubt that however bad the impending developments may be, it will be a relief to have the present suspense ended. Both the copper disturbance and the tight money market are purely temporary influences. The real question which the market must soon put to a test is whether or not prices are too high in the judgment of the investment community. The record of outside trade and railway earnings is truly marvelous, and apprehension that the disaster to the corn crop may have effects which are not yet disclosed is fast disappearing. It is simply a matter of divergent opinion whether current prices have fully measured these conditions, and the trial of this disputed point is likely to come very soon.

The local traction shares have followed the fluctuations of the general list so closely during the week that no individuality attaches to their movement. No particular attention has been paid

to the starting of the Manhattan Elevated's new power house, although this is reassuring to anyone who has been skeptical about the immediateness of the electrical equipment. The stock was apparently taken on the decline quite largely by the pool which recently forced the stock up to its extreme figure, and it rallied fully as easy as any other issue when the selling pressure was removed. Brooklyn Rapid Transit was well supported by the leading speculative interest in the property, and the floating short interest found some difficulty in covering when the general turn in prices came. Metropolitan seemed also to have been oversold, and the stock had to be bid up sharply in order to close short contracts.

#### Philadelphia

Union Traction shares were temporarily depressed by rumors put in circulation toward the end of last week that the company's employees were about to strike. The quotation fell from 33 at the close last Tuesday to 31½ on Friday. But strong speculative support was given on the decline, and a new story was started to the effect that a holding company was about to be formed, which would take over the present Union Traction stock, the shares of the Philadelphia Electric Company, and the new trolley franchises. This report found no credence outside of speculative circles, but it helped to rally the price to 32¾. The best information about the recent advance is that it is the work of a pool, with a strong inside following. Philadelphia Traction has sold down to 97½, a loss of a half point for the week. American Railways, on scant sales, dropped a point to 43. Consolidated Traction, of Pittsburgh, continues to be picked up quietly by interests identified with the recent consolidation deal. The stocks are unchanged at 22¾ for the common, and 63¾ for the preferred. Consolidated of New Jersey has been strong and moderately active, selling up to 67¾. The movement is connected with the plans for building a tunnel for the North Jersey Company to gain entrance to Manhattan Island. The minor transactions of the week comprise United Traction, of Pittsburgh preferred, at 52, Railways General at 5, Rochester Passenger, common, at 41¼, the preferred at 95; Philadelphia City Passenger at 208, and Second and Third Streets Passenger, at 303. In the bond department, Electric-Peoples Traction 4s continued the feature at 98. Consolidated of New Jersey 5s, ex-interest, at 109¾, Indianapolis 4s at 87, and Easton Consolidated Electric 5s at 103½.

#### Chicago

Dealings in all the Chicago tractions have been very light during the week, and have caused scarcely any change in prices. The liquidation in the surface line stocks seems to have entirely ceased. There is no disposition toward recovery shown in the Union Traction shares, but they are steady at 11 for the common, and 47 for the preferred. City Railway, selling ex-dividend, jumped up on the purchase of a 20-share lot to 190 on Saturday. West Chicago, after selling at 92, fell under, scattering, selling to 90½. The trading in the elevated stocks includes simply the sale of a few hundred Metropolitan common at 39, and preferred at 91, and a few lots of Lake Street at 11½. Regarding the last-named road there is said to be no immediate prospect of any interest payment on the income bonds, even with the increased earnings, and the improvements in equipment and terminals which have recently been made. In the rehabilitation of the property, charges have been enlarged as rapidly as income, or nearly so. The third track is now being laid. Eight motor cars and twenty coaches have lately been purchased at a total cost of \$125,000. The new track and equipment is expected to cost somewhere around \$400,000.

#### Other Traction Securities

St. Louis securities have relapsed into inactivity again, and prices have declined under realizing sales. St. Louis Transit sold down in the St. Louis market last Wednesday from 34¼ to 33½, and on Friday sales were made on the New York curb at 31½. United Railways preferred fell meanwhile from 89 to 88½, and the 4 per cent bonds from 90 to 89¾. A single sale of Louisville preferred at 115¼ is all that was done in those issues. New Orleans Traction was stronger, rising from 30 to 31¼, and the preferred from 105 to 105½. In the Boston market Massachusetts Electric common recovered sharply from the depression of a week ago, selling up from 32 on Wednesday to 34 on Friday. Later, however, it lost the greater part of this gain. The preferred selling ex-dividend is steady around 91. Scattered lots of Boston Elevated sold at 168 and 167. West End common rose a half point to 94½, and the preferred was dealt in quite freely at 114. In Baltimore interest is still absorbed by the movement in United Rail-

ways. A good deal of attention was attracted to a circular issued by a prominent commission house of that city, which pointed out that earnings increased from \$4,274,304 in 1899, to \$4,431,742 in 1900, and that this year over \$4,700,000 will be earned. The surplus, after all charges, including interest on the income bonds, was reckoned at \$100,000, and the additional amount expended during the year for improvements to property at \$250,000. This circular had no perceptible effect, however. The income bonds which touched 67 a week ago recovered fractionally, but the common stock has fallen to 14½, the lowest point on the movement. One view of the recent decline is that it is nothing more than a raid, inspired by the political party which threatens to make trouble for the company in the coming session of the Legislature. Other sales for the week on the Baltimore Exchange include United Railway's 4s at 94½, City and Suburban 5s at 114½, Pittsburgh Traction 5s at 116½ and 117, Baltimore Traction 5s at 116½, and Baltimore Traction convertible 5s at 100%.

**Security Quotations**

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

	1901	
	Closing Bid	Dec. 10 Dec. 17
American Railways Company	*44	43
Boston Elevated	166	166
Brooklyn R. T.	62¼	62½
Chicago City	185½	*187
Chicago Union Tr. (common)	10½	10½
Chicago Union Tr. (preferred)	47	47
Cleveland City	112	..
Cleveland & Eastern	31	..
Cleveland Electric	86	..
Columbus (common)	45	45
Columbus (preferred)	100	101
Consolidated Traction of N. J.	67½	67½
Consolidated Traction of N. J. 5s.	†109¼	109¼
Consolidated Traction of Pittsburgh (common)	22¾	22¾
Consolidated Traction of Pittsburgh (preferred)	66¾	64
Detroit United	75½	..
Detroit United certificates	75	..
Electric-People's Traction (Philadelphia) 4s	98	98
Elgin, Aurora & Southern	42	..
Indianapolis Street Railway	42	42
Indianapolis Street Railway 4s	87½	87½
Lake Street Elevated	11½	11½
Louisville (common)	107¼	107½
Louisville (preferred)	115¾	115¼
Manhattan Ry.	135½	134¾
Massachusetts Elec. Cos. (common)	32	32
Massachusetts Elec. Cos. (preferred)	93½	*91
Metropolitan Elevated, Chicago (common)	40	39¼
Metropolitan Elevated, Chicago	90	90½
Metropolitan Street	158½	160¾
New Orleans (common)	29¾	31
New Orleans (preferred)	105	105½
North American	93½	92½
Northern Ohio Traction (common)	42	..
Northern Ohio Traction (preferred)	88¼	..
North Jersey	24	25
Northwestern Elevated, Chicago (common)	38½	35
Northwestern Elevated, Chicago (preferred)	a90	88
Philadelphia Traction	97¾	97¾
Rochester (common)	40	40½
St. Louis Transit Co. (common)	34	33
South Side Elevated (Chicago)	a109	108½
Syracuse (common)	25	23
Syracuse (preferred)	60	60
Third Ave.	121¼	121
Twin City, Minneapolis (common)	106¼	107½
United Railways, St. Louis (preferred)	89	87
United Railways, St. Louis, 4s.	90½	89¾
Union Traction (Philadelphia)	33	32½

\* Ex-dividend. † Ex-interest. (a) Asked.

**Iron and Steel**

The important statistics issued during the week by the *Iron Age* show that the weekly output of the pig-iron furnaces increased 3583 tons during November, and on December 1 had reached a total of 317,358. Despite this increase, furnace stocks declined during the month 42,000 tons. It thus appears that consumption in the lower grades of the industry is still running well ahead of production. In face of this situation prices are not being advanced, and the recent decision of the Steel Corporation to continue this season's rate throughout the coming year shows how well able the heads of the industry are to control the market and how well they are doing it. Bessemer pig iron is quoted at \$16 a ton, steel billets at \$27.50, and steel rails at \$28.

**Metals**

Copper prices have been cut severely during the week from 16¾ cents to 14 cents for lakes, lead has also been reduced from 4¾ cents to 4 cents, tin is steadier at 24½ cents, and spelter is higher at 4½ cents.

SAN FRANCISCO, CAL.—It is reported that the California Gas & Electric Corporation, which was recently incorporated in San Francisco, with a capital stock of \$30,000,000, is about to close a deal for the control of the North Pacific Coast Railroad, with a view to converting it into an electric line. The North Pacific Coast Railroad is a narrow-gage line about 94 miles in length, terminating in Sansalito and connected with San Francisco by ferryboats. It is proposed to electrify the road from Sansalito, via San Rafael, Mill Valley and San Anselmo, to Cazadero, a distance of 80 miles, and provide fast passenger boats for the ferry lines. Extensions of the road are contemplated, including one from San Rafael to Petaluma, givin San Francisco its first suburban electric railway of any great length. Already a large number of San Francisco business men have summer or permanent residences along this scenic route, notwithstanding the poor transportation service heretofore supplied. Electricity for operating the road will be supplied from the company's transmission plant on the North Yuba River, from which the street railways of Oakland are now operated. The California Electric Corporation, which has absorbed the Bay Counties Power Company and the California Central Gas & Electric Company, is already supplying electric light and power in San Rafael, Petaluma, Santa Rosa, Vallejo, Dixon, Nevada City, Grass Valley and many other towns to the north and east of San Francisco. It has ample power capacity, and will probably have no difficulty in carrying out its railroad plans.

SAVANNAH, GA.—The meeting of the Edison Electric Illuminating Company called for Dec. 9 to act on the acquisition of the Savannah, Thunderbolt & Isle of Hope Railway was postponed. The plan has not been abandoned, and another meeting is expected to be held in the near future.

WORCESTER, MASS.—The report of the Worcester Street Railway Company for the year ending Sept. 30, as filed with the Railroad Commissioners, follows:

	1901	1900
Gross receipts	\$1,031,235	\$710,022
Operating expenses	701,060	522,022
Earnings from operation	\$330,175	\$188,000
Fixed charges	153,118	108,617
Net earnings	\$177,057	\$79,383
Dividend	153,000	56,000
Surplus	\$24,057	\$23,383

SPRINGFIELD, MASS.—The report of the Springfield Street Railway Company for the year ending Sept. 30, as filed with the Railroad Commissioners, follows:

	1901	1900
Gross receipts	\$753,809	\$686,019
Operating expenses	527,588	479,845
Earnings from operation	\$226,221	\$206,203
Fixed charges	73,234	76,244
Net earnings	\$153,987	\$129,959
Dividends	156,672	116,672
Surplus	*\$3,685	\$13,287

\* Deficit.

DETROIT, MICH.—The Detroit & Port Huron Shore Line Railway has filed a blanket first mortgage for \$2,500,000 in favor of the Union Trust Company, trustee. The mortgage secures an issue of 5 per cent bonds, and is due Jan. 1, 1950. Par value of each bond is \$1,000.

DETROIT, MICH.—The Detroit United Railway Company reports earnings as follows:

	1901	1900
Gross receipts	\$254,807	\$219,802
Operating expenses and taxes	148,682	127,656
Net earnings	\$106,125	\$92,146
From Jan. 1 to Nov. 30		
Gross receipts	\$2,647,729	\$2,335,955
Operating expenses and taxes	1,443,361	1,309,956
Net earnings	\$1,204,368	\$1,025,999

OMAHA, NEB.—The rumor of consolidation of the street railway, electric lighting and water interests of this city has again been revived. It is now said that J. P. Morgan & Company will finance the consolidation, and that the original plan, including the power-plant scheme, will be carried out in its entirety.

JERSEY CITY, N. J.—United Traction & Electric Company has declared a dividend of 1 per cent, payable Jan. 1. Books close Dec. 17 and reopen Jan. 2.

OSSINING, N. Y.—The Ossining Electric Railroad has recently been purchased by the Westchester Traction Company, and the latter will assume the management of the property Jan. 1, 1902.

BINGHAMTON, N. Y.—The Binghamton Railway Company has been granted permission by the State Board of Railroad Commissioners to issue a first mortgage of \$2,500,000, covering its entire property, to take up and retire underlying securities and for new construction. Under the new mortgage bonds for only \$1,500,000 may be issued now, while the company must get consent of the State Board upon a second application before issuing the remaining \$1,000,000.

SYRACUSE, N. Y.—The Syracuse, Lakeside & Baldwinsville Railway Company reports earnings as follows:

Quarter ending Sept. 30	1901	1900
Gross receipts .....	\$44,530	\$40,614
Operating expenses .....	29,077	27,843
Earnings from operation .....	\$15,543	\$12,771
Receipts from other sources .....	1,521	1,686
Gross income .....	\$16,974	\$14,457
Fixed charges .....	6,700	6,700
Net earnings .....	\$10,274	\$7,757

UTICA, N. Y.—The Railroad Commissioners have authorized the Mohawk Traction Company to issue a mortgage of \$4,000,000, with the proviso that only \$2,500,000 shall be sold at the present time.

SCHENECTADY, N. Y.—The Schenectady Railway Company reports earnings as follows:

Quarter ending Sept. 30	1901	1900
Gross receipts .....	\$47,492	\$22,807
Operating expenses .....	23,887	14,199
Earnings from operation .....	\$23,605	\$8,608
Receipts from other sources .....	11,849	11,247
Gross income .....	\$35,454	\$19,855
Fixed charges .....	5,310	4,875
Earnings from operation .....	\$30,144	\$14,980

ROCHESTER, N. Y.—The promoters of the Monroe County Belt Line are extremely enthusiastic over the project, and are predicting that the line will be completed by July, 1902. The company expects to enter Rochester, but no arrangement for operating over the lines of the Rochester Railway has been made. The road is to be a passenger and light freight line connecting Fairport and intermediate towns and villages with Rochester by means of a belt line or loop. Brighton, Penfield, Fairport, Despatch and Pittsford will be passed through. The officers of the company are: A. H. Brown, of Penfield, president; Dewitt C. Becker, of Fairport, vice-president; P. R. McPhail, of Rochester, treasurer; Merton E. Lewis, of Rochester, secretary and attorney; George W. Aldridge, I. M. Luddington, W. H. Rowerdink, Fred. Guernsey, W. A. Parce, directors.

CLEVELAND, OHIO.—Negotiations are still going on between the Everett-Moore syndicate and George Kerper, owner of the Toledo, Bowling Green & Southern Railway. The syndicate wants control of the road, but Kerper is only willing to sell a half interest. The syndicate may be able to force matters, since the Toledo, Bowling Green & Southern has only a temporary arrangement for entrance into Toledo.

CLEVELAND, OHIO.—The directors of the Cleveland, Elyria & Western Railway met recently and decided to take advantage of the ten-year option and retire the original bond issue on the Cleveland & Berea Railway, amounting to \$73,000. They will be redeemed Jan. 1, 1902, at the Savings & Trust Company, which holds the original mortgage. They will be retired by \$73,000 of Cleveland, Elyria & Western Railway bonds, held in escrow for this purpose under the consolidation mortgage held by the Western Reserve Trust Company.

COLUMBUS, OHIO.—J. E. Latimer, one of the promoters of the Columbus, Delaware & Marion Railway, recently had a lengthy conference with the promoters of the Columbus, Delaware & Northern Traction Company, which proposes to build a line from Columbus to Delaware and Marion, practically paralleling the Columbus, Delaware & Marion. For some months there has been talk that the two parties had agreed to consolidate and build a single line, but Mr. Latimer says there is now little probability of such a move. He claims that his company has its line practically completed between Columbus and Delaware. But little work has been done by the Columbus, Delaware & Northern. The Columbus, Delaware & Marion Company will place its line between Columbus and Delaware in operation in about sixty days. Mr. Latimer says that his company will probably make traffic arrangements for entrance to Columbus, thus making a through line from Cleveland to Columbus.

CONNEAUT, OHIO.—An official of the Pennsylvania & Ohio Railway, which owns the Conneaut-Ashtabula line and is preparing to build to Erie, admits that the Everett-Moore syndicate has made a proposition for the purchase of the road, but states that the present owners have no intention of selling unless they secure a good figure. Officials of the syndicate recently inspected the system of the Pennsylvania & Ohio Railway.

MARIETTA, OHIO.—The Parkersburg & Marietta Interurban Railway has acquired three-fourths of the stock of the Marietta Electric Company,

thereby securing control of the lines of the two cities. The stock was bought on a basis of \$400,000 for the entire plant. It is said that the lines will eventually become a part of the Camden Interstate system.

CLEVELAND, OHIO.—Stockholders of the Cleveland Electric Railway will meet Jan. 15 to take action on a proposition to increase the capital stock of the company \$1,000,000. The present capital stock is \$13,000,000 with outstanding bonds amounting to \$4,350,000.

STEUBENVILLE, OHIO.—George A. Maxwell, George Henry and John McKee have purchased the stock held by C. H. Stroebel and George K. Canfield, in the Pleasant Heights Traction Company, and the property is now owned wholly by local people.

CINCINNATI, OHIO.—It is stated that the Cincinnati Traction Company will make extensive changes at the Zoo this coming season. The company contemplates running a loop into the gardens and running cars to the doors of the restaurant, so that in case of bad weather visitors may be saved the exposure of walking to the park entrance to get cars. It is said that the management is arranging engagements with John Phillip Sousa, Theodore Thomas and Walter Damrosch, as well as other noted bandmasters and orchestra leaders, for concerts.

NEWTOWN, PA.—The control of the Newtown & Yardley Street Railway Company has passed into the hands of the Johnson syndicate, owning the Lehigh Valley Traction Company. Horace G. Reeder, Edward W. Twining and Charles T. Eastburn have resigned as directors and officers of the company, and O. M. Bates and John G. Hoefgen, of Allentown, Pa., and Jilson J. Coleman, of Trenton, N. J., have been elected to fill the vacancies. C. M. Bates has been elected secretary and treasurer of the company. The surveyors of the road have already commenced the survey, and the materials are being ordered, and the road will be completed with as little delay as possible. It is expected that cars will be running over the road in the early spring.

PHILADELPHIA, PA.—The American Railways Company reports gross earnings for the month of November, 1901, of \$73,797, against \$61,887 for the same month of last year, an increase of \$11,909. The results for the five months ending Nov. 30 show gross earnings of \$418,920, against \$375,024 in the same period of last year.

GETTYSBURG, PA.—The Washington, Westminster & Gettysburg Electric Railway Company has filed a mortgage in favor of the Union Trust Company, of Philadelphia. The mortgage is given to secure an issue of \$1,850,000 in 5 per cent gold bonds of the denomination of \$1,000 each. The filing of the mortgage is a preliminary step toward the construction of the long-projected electric railway from Washington to Gettysburg.

BOSTON, MASS.—The Railroad Commissioners have approved an issue of \$1,800,000 4 per cent fifteen-year bonds by the West End Street Railway Company, to be applied to changes and improvements made in accordance with provisions of the lease to the Boston Elevated Railroad Company. The use of \$32,591, proceeds of an issue of bonds for permanent improvements also, is authorized.

WORCESTER, MASS.—The Railroad Commissioners have approved an issue of \$60,000 5 per cent twenty-year bonds by the Hampshire & Worcester Railway to pay floating indebtedness.

BOSTON, MASS.—At the annual meeting of stockholders of the Massachusetts Electric Companies, adjourned from Nov. 20, held Dec. 18, the sale of 5556 shares of the capital stock of the Newport & Boston Street Railway Company and 2875 shares of the Hyde Park Electric Light Company, on such terms as the trustees may decide, was authorized. The following trustees were elected to serve three years: Gordon Abbott, Alexander Cochrane, Reginald Foster, Walter Hunnewell and Stillman F. Kelley. The date of the annual meeting was changed from the third Wednesday in November to the same date in December.

PITTSBURGH, PA.—The Philadelphia Company reports earnings as follows:

November	1901	1900
Gross receipts .....	\$286,971	\$209,670
Operating expenses and taxes .....	192,319	173,281
Earnings from operation .....	\$94,652	\$36,389
Receipts from other sources .....	5,589	12,055
Gross income .....	\$100,241	\$48,444
Rentals on leased gas lines, interest on current liabilities, interest on funded debt, etc. ....	39,207	31,395
Net earnings .....	\$61,034	\$17,049
Dividend on preferred stock .....	16,666	16,666
Surplus .....	\$44,368	\$383
Eleven months ending November	1901	1900
Gross receipts .....	\$2,745,742	\$2,206,579
Operating expenses and taxes .....	1,680,773	1,357,244
Earnings from operation .....	\$1,064,969	\$849,335
Receipts from other sources .....	513,013	359,046
Gross income .....	\$1,577,982	\$1,208,381
Rentals on leased gas lines, interest on current liabilities, interest on funded debt, etc. ....	458,279	414,094
Net earnings .....	\$1,119,703	\$894,287
Dividend on preferred stock .....	183,251	183,251
Surplus .....	\$936,452	\$611,036

TABLE OF OPERATING STATISTICS

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

Table with columns for Company, Period, Total Gross Earnings, Operating Expenses, Net Earnings, Deductions From Income, Net Income, Amount Available for Dividends. Rows include companies like AKRON, O.; ALBANY, N. Y.; AUGUSTA, GA.; BINGHAMTON, N. Y.; BOSTON, MASS.; BROOKLYN, N. Y.; BUFFALO, N. Y.; CHICAGO, ILL.; CLEVELAND, O.; CORTLAND, N. Y.; DENVER, COL.; DETROIT, MICH.; DULUTH, MINN.; ELGIN, ILL.; HAMILTON, O.; LONDON, ONT.; MILWAUKEE, WIS.; MINNEAPOLIS, MINN.; MONTREAL, CAN.; NEWBURGH, N. Y.; NEW YORK CITY; OLEAN, N. Y.; PITTSBURG, PA.; PHILADELPHIA, PA.; RICHMOND, VA.; ROCHESTER, N. Y.; ST. LOUIS, MO.; SCRANTON, PA.; SYRACUSE, N. Y.; TOLEDO, O.; W. NEW BRIGHTON, S. I.

## NEWS OF THE WEEK

## CONSTRUCTION NOTES

**SAN FRANCISCO, CAL.**—It is reported that the Market Street Railway contemplates the erection of new repair shops.

**LOS ANGELES, CAL.**—The Los Angeles & Pasadena Electric Railway Company has made application for a thirty-year franchise to operate an electric railway east of Pasadena, beginning at a point in California Street at the eastern boundary of the city of Pasadena, and running thence to Wilson Avenue, and thence along Wilson Avenue northerly to Colorado Street.

**SAN FRANCISCO, CAL.**—The San Francisco & San Mateo Electric Railway is making preparations to use again the power house at Sunnyside, which was shut down a year ago, when the company made a contract with the Independent Light & Power Company for power. The latter company is unable, owing to increased business, to give extra power required by the railway. It is the intention of the San Francisco & San Mateo Company to operate that part of its system south of Thirtieth Street with power from the Sunnyside plant.

**COLORADO SPRINGS, COL.**—The Council has refused to grant Frank L. Dana and his associates a franchise for the construction of an electric railway from the center of the city to Prospect Lake and the cemetery.

**FLORENCE, COL.**—The Council of Canon City has granted the Florence Electric Street Railway Company a twenty-year franchise for the construction of an electric railway here. The company now has under construction in this city an extended system, and the plan is to extend the lines to Canon City.

**TAMPA, FLA.**—Col. John P. Martin, of Xenia, Ohio, who proposes to establish there an electric railway system and lighting plant, states that he has completed all arrangements for beginning work. Contracts for all the materials have been awarded. The plan is to build about 20 miles of line within the city limits and to construct branches to St. Petersburg and Manatee. Line to the Thonotosassa section and to Plant City is also projected. A large tract of land in the business section of the city has been purchased as a site for the office and power station.

**GALESBURG, ILL.**—The Galesburg & Oneida Electric Railway Company has been incorporated, with a capital stock of \$10,000, to construct an electric railway to connect Galesburg and Oneida. The incorporators of the company are: F. W. Emory, A. N. Lindsey and N. C. Lucas.

**ELGIN, ILL.**—Additional franchises sought by the Elgin, Aurora & Southern Traction Company have been secured, and the Aurora, Elgin & Chicago Railway, which is the Chicago line now under construction, has completed its track into Aurora. The track is now laid from the terminals at Batavia and Aurora eastward to the Desplaines River, within 15 miles of Chicago.

**MACOMB, ILL.**—The Macomb & Western Illinois Railway Company, which proposes to construct an electric railway to connect Macomb, Industry, Rushville, Beardstown, Monmouth and Strong, has secured part of its right of way, and anticipates no difficulty in securing the remainder. Surveys have not been made, but the contract will be awarded before the spring of 1902. The proposed line will be about 95 miles long. William A. Compton, of Macomb, is president of the company.

**CARBONDALE, ILL.**—A right of way over the county roads will be granted to the Carbondale & Murphysboro Electric Railway, a line which is to connect the two cities and connect with the lines being built out from East St. Louis. St. Louis capital is interested in the venture.

**BELLEVILLE, ILL.**—The St. Louis & Belleville Traction Company has applied to the City Council for a franchise to operate a double track on West Main Street from the Public Square to the city limits. The right to carry express matter is also applied for.

**BATESVILLE, IND.**—The Batesville Traction Company has been incorporated, with a capital stock of \$10,000, to construct an electric railway to connect Batesville, Ripley County, and Shelbyville, Shelby County. Louis Zollner, Sherman P. Minear, Charles R. Porter, William N. Harding, Thomas E. Goodrich and John R. Messick are among those interested in the company.

**NORTH MANCHESTER, IND.**—A company composed of citizens of this city has been granted an electric railway franchise covering two routes, one from this city north by way of Manchester to the Kosciusko County line, and another from Wabash south to the Grant County line. The total length of the two lines is 26 miles. The Commissioners require the company to begin work within two years and complete by Dec. 1, 1905. It is expected that the lines will be built next year.

**JEFFERSONVILLE, IND.**—It is announced that an electric railway between Jeffersonville and Indianapolis is no longer a matter of conjecture, but that a large force of men will begin the work March 1, 1902. The plan is to connect at Seymour with a line now running from Indianapolis to Franklin. The promoters announced Dec. 6 that every foot of the right of way had been purchased, and that New York capitalists had become interested. The estimated cost is \$20,000 per mile, including tracks, cars, power house, poles and wires. Already \$500,000 is pledged to build the line, which will eventually be extended to Louisville, thus connecting the latter with Indianapolis.

**CEDAR FALLS, IOWA.**—The extension of the Waterloo & Cedar Falls Rapid Transit Company's lines from Cedar Falls to Denver is almost completed. The grading has been finished and the track has been laid up to within 2 miles of Denver.

**SOUTH McALESTER, I. T.**—The City Council has granted a franchise to several Chicago men for an electric railway extending from South McAlester to McAlester, Krebs, Alderson, Carbon and Haileyville, I. T. The line will

be about forty miles long, and will connect South McAlester with all the mining towns in the Choctaw Nation. Work is to be commenced within six months, and the line completed within eighteen months. The general offices, power house and machine shop will be located in South McAlester.

**COVINGTON, KY.**—The construction of the Cincinnati, Covington & Erlanger Electric Railway has been begun. The new line will connect Covington and Erlanger, and is controlled and will be operated by the Cincinnati, Newport & Covington Railway.

**LOUISVILLE, KY.**—T. C. H. Vance has applied to the City Council for a franchise for the construction of an extended system of electric railways here. The matter has been referred to the committee on franchises. Following so closely the reported offer of the purchase of the Louisville Railway and the Louisville Gas Company, this application has caused considerable comment.

**VERSAILLES, KY.**—A special committee has reported to the Woodford Fiscal Court in favor of granting a franchise to W. W. Longmoor and others, of Frankfort, for the construction of an electric railway over the McCracken's Mill Turnpike, from Versailles to the Franklin County line, and over the Versailles and Lexington Turnpike from Versailles to the Fayette County line. The court will not act upon the matter this week.

**DANVILLE, KY.**—The Danville Electric Power & Railway Company, recently incorporated, is reported to have secured all the franchises to construct an electric railway to connect Danville, Junction City and Shelby City. About 8 miles of line will be constructed. Besides the operation of the railway, the company will generate electricity for light, heat and power purposes. Among those interested in the company are: George F. Anderson, C. R. McDowell, Harry W. Wiseman, Guy E. Wiseman, Jr., A. S. Robertson, A. B. Robertson, Samuel Lyons, M. J. Farris and W. J. Price, of Danville.

**JENNINGS, LA.**—Plans for the construction of an electric railway from Jennings to Lake Charles, a distance of 33 miles, and from Jennings to Lake Arthur, a pleasure resort, are being considered. Nothing definite has been decided. It is understood that Louisiana interests are behind the project.

**NORTH ATTLEBORO, MASS.**—The Cumberland & North Attleboro Electric Street Railway Company, which, as previously stated, proposes to build an electric railway to connect Cumberland with Woonsocket, R. I., is capitalized at \$25,000. The company now has a franchise application pending in North Attleboro. The directors of the company are: Theron I. Smith, Dr. E. E. Hale, Harry D. Hunt and David D. Coddling, of North Attleboro; Joshua T. Nowell, John R. Warman, of Boston; B. B. Merrill, of Malden.

**BOSTON, MASS.**—Excavations were begun at the junction of State Street and Atlantic Avenue on Dec. 2 by the Boston Tunnel Construction Company, in the line of carrying the tunnel eastward under the harbor to meet the section already carried 500 feet westward from East Boston. The shaft will be 64 feet deep, and will occupy an area at the surface of about 3000 square feet. One side of the street has been left open for traffic. Operations are now being carried on in the East Boston section, 90 feet below mean high water mark, under an artificial air pressure of 24 lbs. per square inch. The new route to State Street appears to be easier to penetrate than the original South Ferry course, little being found but blue clay in the soil encountered.

**ATTLEBORO, MASS.**—The Interstate Consolidated Street Railroad Company has notified the Selectmen of Attleboro that it is ready to operate by electricity the present branch steam road running between Attleboro and North Attleboro just as soon as it is abandoned by the Consolidated Railroad Company. The road will be used for the transportation of freight and express matter largely and for through passenger service between the two towns, no stops being made. The company has asked the Selectmen to grant it a right of way on Bank Street, that it may run its cars from the present crossing on Park Street to the line of the steam road at the Bank Street crossing.

**DETROIT, MICH.**—The Detroit & Michigan Air Line Railroad Company has been incorporated, with a capital stock of \$1,000, to build an electric railway from Toledo to Detroit. The new company is an Everett-Moore corporation, S. H. Hildreth, Harrison B. McGraw, Harry B. Potter, Robert Grosser and A. A. Caslin being the incorporators.

**DETROIT, MICH.**—Electric railway traffic is now open between Detroit and Jackson. The Detroit, Ypsilanti, Ann Arbor & Jackson Railway has been placed in operation to Grass Lake, and the Jackson & Suburban Railway operates to that place from Jackson.

**FERGUS FALLS, MINN.**—Foreign capitalists are understood to have been communicating with the Merchants' Association relative to establishing an electric railway here. It is said that they are the same persons who recently were granted a franchise in Little Falls, and that their purpose is to build a line to connect Little Falls and Fergus Falls.

**ST. LOUIS, MO.**—The St. Louis, St. Charles & Western Railway Company and the St. Louis Transit Company has notified the County Court that they will comply with the order issued Sept. 25, and remove the third set of rails from the St. Charles Rock Road. There has been a controversy in regard to this for some time.

**ELIZABETH, N. J.**—The East Jersey Traction Company, capitalized at \$1,000,000, was incorporated Dec. 12. The purpose of the company is to construct an electric railway along Staten Island Sound from Elizabethport to Carteret, Seawaren and Boynton Beach. From Carteret the line will probably be extended to Woodbridge and Rahway, and from there to Elizabeth. It would then pass through Tremley Point, also, and could be extended to Perth Amboy. The incorporators of the company are: Governor Voorhees,



Judge Benjamin A. Vail, of Rahway; Hamilton Fish Kean, Julian Kean and James Maguire, of Elizabethport; Frank Bergen, James B. Cahoon, of New York. The incorporators organized by electing Frank Bergen president; James Maguire, treasurer; Judge Vail, secretary.

CAMDEN, N. J.—The South Jersey Gas, Electric & Traction Company is considering plans for extending its lines from Manau to Clayton, Glassboro, Pitman Grove and Barnsboro.

ROCHESTER, N. Y.—General Manager Nicoll, of the Rochester Railway Company, says that the company has expended in the improvement of its system since September of last year the sum of \$435,537, of which amount nearly \$340,000 has been expended since its ratification of the agreement with the city in connection with the payment of the paving claims in April of this year.

OLEAN, N. Y.—The extension of the Olean Street Railway to White House has been completed, and cars are now being operated to that place. The company propose to further extend its lines to Bolivar.

MONTICELLO, N. Y.—John B. McAfee & Co., of Philadelphia, have been awarded the contract for the construction of the Monticello, Fallsburgh & White Lake Electric Railway. The new road will extend from Monticello to Fallsburgh, and is to be completed by July 1, 1902.

WESTFIELD, N. Y.—The Lake Shore Traction Company, with capital of \$28,000, has been incorporated, to construct an electric railway 28 miles long, connecting Westfield and Silver Creek, Chautauqua County. The directors of the company are: Arthur C. Wade, Almet N. Broadhead, Ole L. Becker, William R. Reynolds, Mayne R. Stevenson and John T. Wilson, of Jamestown; Arthur B. Ottaway, of Westfield; Fred. R. Green and Harry D. Kirkover, Jr., of Fredonia.

ROCHESTER, N. Y.—The Rochester & Elmira Electric Railway has recently been granted a franchise in Bath.

ROCHESTER, N. Y.—The Railroad Commissioners have authorized the Monroe County Electric Belt Line Railroad Company to construct its proposed road in Monroe County.

HORNELLVILLE, N. Y.—It is said that plans are being perfected for constructing an electric railway from Hornellsville to Penn Yan. The line will probably extend through Hammondsport and Penn Yan via the west shore of Lake Keuka. Otto C. Bingandorf and C. H. Ginther, of New York, and Charles Armstead, of Hornellsville, are said to be interested in the project.

MATTEAWAN, N. Y.—The Citizens' Street Railway Company is in the market for a 400-hp Corliss engine and a 250-kw belted generator, together with shafting and other accessories. The firm of W. M. Sheehan & Company, electrical engineers and contractors, of New York City, which is in charge of the new plant of the railway company, announces that an induced draft system will be installed. The boiler order, calling for two boilers of 200 hp each, has already been contracted for with Thayer & Company, of New York, and will be built by the Aultman & Taylor Company, of Mansfield, Ohio. It is confidently expected that the equipment will be running by early summer.

PATCHOGUE, N. Y.—A. C. Hume and J. H. Robertson, as the representatives of New York financial interests, have been here recently in connection with the Patchogue & Port Jefferson Traction Company, of which mention was made last week. Messrs. Hume and Robertson have been in conference with the officers of the Patchogue Electric Light Company, and it is understood that they have obtained a thirty-day option on the plant of that company. It is expected that the deal will be consummated, and that the road will be built early next year.

OMAHA, NEB.—The Omaha Street Railway Company has decided to extend its lines to Florence, 7 miles from Omaha, on the Missouri River. Work is to be begun early in 1902.

WADESBORO, N. C.—The Bluiitt Falls Electrical Power Company has, as previously stated, considered constructing an electric railway in Wadesboro, but the proposed electric railway will not be constructed until the development of power at Bluiitt Falls is well under way. The officers of the company are: Fred. J. Coxe, president and treasurer; Robert L. Steele, secretary; S. T. Stowe, superintendent; Richard Morton, of Baltimore, purchasing agent.

SPRINGFIELD, OHIO.—Harry Frye, Jr., has applied to the Clarke County Commissioners for a franchise for the proposed line which will extend from Springfield to Wilmington and Hillsboro, with a branch to Xenia. Mr. Frye claims his project has been financed and nearly all right of way secured.

GREENVILLE, OHIO.—John Whiteley and Joseph Koyer are the promoters of the Greenville & Richmond Traction Company, which is being organized to build a line from Greenville to Richmond, Ind. Right of way is being secured.

EAST LIVERPOOL, OHIO.—The East Liverpool Street Railway Company is building an extension to Smith's Ferry.

YOUNGSTOWN, OHIO.—The Mahoning Valley Railway Company has nearly completed its new power station at Edinburg, Pa., which will furnish current to the new New Castle extension. The New Castle line will be in operation in the near future.

MANSFIELD, OHIO.—Surveys will be started at once on the Norwalk, Greenwich & Mansfield Railway, a private right of way having been secured. Cleveland people, headed by O. P. McIlrath, are promoting the road. The company will have no competition over this route.

UPPER SANDUSKY, OHIO.—The Tiffin & Southern Electric Railway, which is to run from Tiffin through Upper Sandusky to Kenton, has been incorporated under the laws of West Virginia, with a capital stock of \$500,000. The incorporators of the company are: Michael Riley, of Pittsburgh; Judge Smalley, of Upper Sandusky; D. C. Donovan, William P. Malone and M. A. Smalley, of Toledo.

GEORGETOWN, OHIO.—The Ripley, Georgetown, Hillsboro & Columbus Railway Company has been incorporated, with a capital stock of \$10,000, to construct an electric railway from Ripley to Columbus, passing through Brown, Highland, Fayette, Pickaway, Madison and Franklin Counties. The road will touch Georgetown, Sardinia and Hillsboro. Among the incorporators of the company are: M. McKeehan, G. Baumbach, N. J. Marshall and J. R. Moore.

CLEVELAND, OHIO.—The Cleveland City Railway Company expects to build about 5 miles of line along the new boulevard from Detroit Street to Rocky River, for which contracts have been let. The company is now building a new boiler house, and contracts have been let for engines, generators and coal-handling machinery. Last week the company awarded contracts for thirty open car bodies and trucks, to be delivered in May.

MARION, OHIO.—The Columbus, Delaware & Northern Traction Company is securing consents of property owners on a number of streets in Marion, to afford entrance for the line to be built from Columbus. The company is to become a direct competitor of the Marion Street Railway Company.

CINCINNATI, OHIO.—Philip Swing, promoter of the Cincinnati & Columbus Traction Company, has applied for a franchise through Hamilton County, along the Madison Pike.

FINDLAY, OHIO.—The Toledo, Bowling Green & Southern Railway has instituted service between Findlay and North Baltimore.

MADISONVILLE, OHIO.—The Madisonville Council has granted the Cincinnati & Columbus Traction Company a franchise. It is expected that construction work will start in the spring. The road will touch Hillsboro, Greenfield and Washington Court House.

CLEVELAND, OHIO.—The Middle States Railway Company, incorporated last week to operate from Bowling Green to Toledo, has increased its capital stock from \$1,000 to \$50,000. It is an Everett-Moore corporation, but the direct purpose of the company has not been announced.

CANTON, OHIO.—The Stark Electric Railway, which is being built by Cleveland people, has secured all the required private right of way between Canton and Alliance. Construction work is progressing rapidly.

FAYETTE, OHIO.—The Toledo & Western Railway has obtained an extension of time to Sept. 1, 1902, in which to complete the road. The company has a large force at work between Morenci and Fayette.

TOLEDO, OHIO.—The lower division of the Detroit & Toledo Shore Line will be fully completed within a few days, and it is expected that cars will be operated through from Toledo to Detroit by Jan. 1. This will make a through line in operation from Port Huron, Mich., to Painesville and Akron, Ohio.

FREMONT, OHIO.—The Tiffin & Port Clinton Railway, which is being built by the Kerlin Brothers, of Toledo, has been fully graded between Fremont and Port Clinton. The road is in operation between Fremont and Ballville. A new water-power plant has been installed at Ballville.

WELLINGTON, OHIO.—The Cleveland, Elyria & Western Railway has asked the Wellington Council for a franchise to the south corporation line, to furnish entrance for the proposed Cleveland, Ashland & Mansfield Railway.

AKRON, OHIO.—Daniel Gindelsperger and Frederick Green, of Cleveland, have applied for a franchise through Summit County for a road which they propose to build from Cleveland to Akron and Barberton. They have a franchise in Cuyahoga County.

LIMA, OHIO.—The Allen County Commissioners have granted franchises through the county to the Toledo & Lima Railway and the Lima, Delphos, Van Wert & Ft. Wayne Traction Company. Both roads will shortly commence construction work.

DETROIT, MICH.—The Rapid Railway system (Detroit & Port Huron Shore Line) has been successful in condemnation proceedings in securing right of way for the new short cut from New Baltimore to Marine City. The new cut will shorten the distance from Detroit to Port Huron about ten miles.

GEORGETOWN, OHIO.—The Ripley, Georgetown, Hillsboro & Columbus Railway was incorporated Dec. 12, with temporary capital stock of \$10,000, to build an electric railway from Ripley, on the Ohio River, to Columbus, by way of Georgetown, Hillsboro, Washington Court House and Mt. Sterling. The incorporators of the company are: M. McKeehan, G. Bambach, A. M. Kantz, W. J. Marshall, O. E. Bane and J. R. Moore.

CLEVELAND, OHIO.—The Stark Electric Railway Company, which is building an electric railway from Canton to Alliance and Salem, has been granted an extension until Jan. 1, 1903, in which to complete the road, by the Stark County Commissioners.

MT. VERNON, OHIO.—Surveying and preliminary work is being done on the Mt. Vernon, Mt. Gilead & Marion Railway.

DAYTON, OHIO.—The Dayton & Kenton Railway Company has been incorporated, with \$2,500,000 capital stock, by H. S. Forgy, C. L. Hubbard, B. H. Rannels, E. M. Hopkins and W. W. Steele. The company proposes to build an electric railway from Dayton to Kenton, passing through Montgomery, Clarke, Miami, Champaign, Logan and Hardin Counties.

SPRINGFIELD, OHIO.—It is stated that the present Medway power station on the Dayton, Springfield & Urbana Railway is to be removed to a point near Dayton, and that a large power house is to be erected near Springfield to take care of the eastern division of the road, the Urbana branch, as well as a portion of the Columbus, London & Springfield Railway, which is owned by the same interests. It is said that the Medway car house will also be moved to Springfield, this point being practically the center of the system.

CLEVELAND, OHIO.—An ordinance that provides for the asking of franchises for at least fourteen new street car routes, some of which shall parallel the present two electric systems, and the remainder of which shall traverse new territory, was introduced in the Council on Dec. 17. A condition of the grant is that they shall be sold to the highest bidder, and only three cents fare charged.

CLEVELAND, OHIO.—An ordinance which is an opening wedge for the proposed three-cent fare lines in Cleveland was introduced in the City Council Dec. 9. In brief, it authorizes the city clerk to advertise for proposals for building and operating street railways in Cleveland on the following terms: Fare to be three cents, with universal transfers; franchise to be for twenty years; city to reserve the right to purchase the roads at such time as might be agreed upon; appliances to be modern and no trailers to be used; Council to have right to change schedules; no proposal to be considered unless accompanied by bona fide check.

FREMONT, OHIO.—Kerlin Brothers, owners of the Fremont & Ballville Street Railway, are building a temporary water-power plant at Ballville. The Toledo, Fremont & Norwalk Railway Company, which heretofore has furnished power to the Kerlins, has abrogated its contract.

SANDUSKY, OHIO.—The Erie County Commissioners have been asked to grant a franchise over several short stretches of road to the Sandusky, Clyde, Tiffin & Southern Railway. The road will be built largely on private right of way, all of which has been secured, and will extend from Sandusky to Tiffin. J. C. Parker, of Sandusky, is president of the company.

CINCINNATI, OHIO.—The power house of the Cincinnati & Eastern Traction Company, near California, is nearly completed, and the equipment is being installed. The station will furnish power for three interurban lines now under construction by Cincinnati interests which are largely identical. They are the Cincinnati & Eastern, which will extend to Richmond; the Suburban Traction Company, which will extend to Bethel, and the Rapid Railway, which will extend to Lebanon. The Richmond and Bethel lines will be placed in operation about May 1, and the Lebanon line about Sept. 1.

DAYTON, OHIO.—The Dayton, Springfield & Urbana Railway has applied to the Montgomery County Commissioners to enable it to build a branch line from Medway to Dayton by way of North Dayton, covering an excellent territory that desires traction facilities.

NORWALK, OHIO.—Work on the Cleveland, Elyria & Western Railway's Norwalk extension is being delayed because of trouble in securing right of way between Berlin Heights and Norwalk. Condemnation proceedings will be started. The line between Berlin Heights and Oberlin will probably be placed in operation within a month. The company has secured an extension until July 1, 1902, in which to complete the line into Norwalk.

NORWALK, OHIO.—S. W. Owen, promoter of the Norwalk-Tiffin Electric Railway, states that 85 per cent of the right of way has been secured, and that sufficient financial backing has been assured to build the road. The route will be from Norwalk to Monroeville, Hunt's Corners, Weaver's Corners, Franks, Reedtown, West Lodi, Republic, and thence to Tiffin.

FOSTORIA, OHIO.—The Findlay & Marion Electric Railway Company claims to have secured all right of way from Findlay to Marion, and for the branch line to Fostoria. The company has asked for a franchise in Fostoria to enable it to connect with the Toledo, Fostoria & Findlay Railway, which will give connection to Toledo.

MARION, OHIO.—Officials of the Columbus, Delaware & Marion Railway recently inspected the proposed route between Delaware and Marion. A private right of way has been secured nearly the entire distance between the towns. Construction work on this part will commence in the spring. It is the intention to build spur lines from Marion to Kenton and from Marion to Galion. The latter spur would connect with existing air line, and would make a through line from Cleveland to Columbus. Cars will be running from Columbus to Delaware in sixty days.

DAYTON, OHIO.—The Dayton & Kenton Railway Company has been incorporated, with \$2,500,000 capital stock, by Herbert S. Forgy, Charles L. Hubbard, B. H. Rannels, Edward M. Hopkins and Wilber W. Steele. The purpose of the company is to build an electric railway connecting Dayton with Kenton, passing through Montgomery, Miami, Clarke, Champaign, Logan, Shelby and Hardin Counties. A number of branch lines are proposed.

TOLEDO, OHIO.—The Middle States Railroad Company has been incorporated, with \$1,000 capital stock, by Harrison B. McGraw, Frederick A. Henry, Robert Crosser, L. M. Hildreth and A. A. McAslin. Most of the incorporators are Cleveland capitalists, and have figured in the organization of a large number of the Everett-Moore lines. The purpose of the company is to build an electric railway running from Bowling Green, Wood County, to a point in Lucas County, where the Detroit & Toledo Shore Line now ends; also to purchase the latter line from Toledo to Monroe, Michigan.

HAMILTON, OHIO.—The State Board of Public Works has decided to lease to the Southern Ohio Traction Company the right of way for four-fifths of a mile between Middletown and Franklin, on the outer slope of the canal bank, the value of the right being fixed at \$10,000, so that the company will have to pay to the State \$600 per annum, or 6 per cent. The lessee company is also required to permit any other line, steam or electric, to use the tracks, provided a share of the cost and maintenance is paid by it.

CLEVELAND, OHIO.—The immense growth of its electric railway and telephone interests, the constantly growing tendency of material and supply people to establish themselves as closely as possible to the headquarters of the syndicate, together with the increasing popularity of the Electric Building as an office building, has induced the Everett-Moore syndicate to make arrangements to duplicate its magnificent headquarters building. The proposed structure will be nine stories high, and will resemble very closely the Electric Building. It will adjoin the latter, extending from Prospect Street through to Huron Street, and will be built next spring. It is possible that still another building may be erected on Huron Street, directly in the rear of the Electric Building. If these plans are carried out, it will give the syndicate the most extensive office building holdings in Cleveland.

TOLEDO, OHIO.—The Manufacturers' Railway Company has applied to the City Council for the right to construct a number of new lines across Jefferson Street between Water Street and the new dock line. The company offers, if the privilege sought is granted, to extend the Jefferson Street sewer

to the new dock line, to fill in that portion of the street and wharve it similar to the property on either side. It agrees to have the work completed by Sept. 1, 1902. The tracks are to be constructed at the present grade, the city reserving the right to put in necessary supports for any bridge over the Maumee to be constructed at this point, and the company promises that there shall be no claims for damages to any property between Water Street and the dock line on account of the building of any such bridge.

PORTLAND, ORE.—An electric railway to tap the rich Salmon River mining regions is projected as an alternative in case the Oregon Short Line Railroad does not carry out its plan of extension to the neighborhood of the Blackbird district. The project is fathered by J. E. Dubois, the Pennsylvania millionaire, and P. A. H. Franklin, of Salt Lake, as a part of their operations in Idaho.

SCRANTON, PA.—A company composed of local business men and merchants has applied to the Council for a franchise for the construction of an electric railway in opposition to the Scranton Railway.

BROWNSVILLE, PA.—The Brownsville & California Street Railway Company has been incorporated, with a capital stock of \$42,000, to construct an electric railway to connect Brownsville and California.

BROWNSVILLE, PA.—The Brownsville, Bridgeport & West Side Street Railway Company has just been incorporated, with a capital stock of \$24,000, to construct an electric railway to connect Brownsville and Bridgeport.

DOYLESTOWN, PA.—The stockholders of the Danboro & Point Pleasant Turnpike Company have decided to lease the road to the Doylestown & Easton Railway Company. It is the purpose of the Railway Company to run a branch from Point Pleasant to Danboro, connecting with its main line to Easton.

JOHNSTOWN, PA.—The Johnstown Passenger Railway Company has paid the Borough of Windber \$7,500 in lieu of bearing the cost of paving streets over which the line is to pass, as provided in the ordinance just passed. The road is already built to the Windber borough line.

NORRISTOWN, PA.—Seventeen cars of machinery for the new power house of the Norristown Traction Company at Collegeville have arrived. When the new car house above this town is completed and the new power house is in operation a new equipment of cars will be put in service.

CHESTER, PA.—The extension of the Philadelphia & Delaware County Electric Railway to Glen Riddle, Lima and Rockdale has reached Black Horse, and will be opened as far as Lima by Dec. 25. The new line will be known as the Media, Glen Riddle & Rockdale Electric Railway.

NEW CASTLE, PA.—A. A. Anderson, general manager of the New Castle & Lowell Railway Company, announces that the new power house at Edinburg will be in operation within the next week.

FITCHBURG, PA.—The entire water privilege, land and buildings at Factory Village, known as the Blackburn property, is said to have been sold to a syndicate representing the Fitchburg & Ashby Street Railway Company. The securing of this most valuable water privilege is an important step toward the construction of both the Ashby and Ashburnham street railways.

STEELTON, PA.—Jacob H. Foreman, A. R. Rupley, Walter Stewart, Harry Hertzler and H. W. Smith, of Carlisle, will soon apply for a charter for the Steelton & New Cumberland Bridge Company, which will erect a modern steel trolley and wagon bridge over the Susquehanna River between Steelton and New Cumberland. The bridge will be almost a mile long, and work upon it will be commenced early in the spring. The promoters are interested in an electric railway to be constructed from New Cumberland to Lewisberry, and which will ultimately form a link in the trolley system between Harrisburg and York. They are also interested in electric railway lines between Boiling Springs and Mt. Holly, Middletown and Elizabethtown, and Womelsdorf and Ungerstown.

STROUDSBURG, PA.—The Minisink Railroad Company has been incorporated, with a capital stock of \$60,000, to construct an electric railway from Stroudsburg to Portland via Delaware Water Gap. The line will eventually be extended to connect with the Lehigh Valley system. Among the incorporators of the company are: William Bray, Joshua Bray, of East Bangor; Charles Shuman, of Bath; A. O. Allen and E. Hilderbrand, of Portland; Samuel Overfield, of Delaware Water Gap; F. W. Eilenberger, of North Water Gap; I. I. Johnson and Joseph H. Shull, of Stroudsburg.

KITTANNING, PA.—The Kittanning & Cowanshannock Valley Street Railway Company has been granted a franchise by the borough of Kittanning and by the township. The new line will extend from Kittanning to Cowanshannock, passing through Rural Valley, and a park will be laid out about a mile from Kittanning. The plan is to begin construction work in the near future. As previously stated, the officers of the company are: Charles Dunbar, of Allegheny, president; Henry Schall, of Walk Chalk, vice-president; Charles Colwell, of Greendale, treasurer; George Caruthers, of Pittsburgh, secretary.

PROVIDENCE, R. I.—The Cumberland Electric Street Railway Company has been organized, Harry D. Hunt being elected chairman and Joshua T. Nowell, of Boston, secretary and treasurer. The proposed road is to run west from Washington Street, Providence, into Cumberland, and through Blackstone Valley villages to Woonsocket.

SIOUX FALLS, S. D.—The Central Heat, Light & Power Company, which has been granted the right to lay wires for supplying electricity for lighting and other purposes, has applied to the City Council for a franchise for the construction of about 15 miles of electric railway in the city and suburbs. H. H. Natwick is president of the company.

JOHNSON CITY, TENN.—There are several petitions before the Council asking for a franchise to construct an electric railway here. Knoxville and Lynchburg, Va., parties have become interested in the subject of an electric railway for Johnson City. One plan is to build a belt line so as to connect with Jonesboro.