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EDITORIAL NOTICE

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

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Summer Uniforms

The recent extreme hot weather is said to have raised the problem of summer uniforms for street-car crews, in an acute form, in some of the western cities; the men at one or two places winning their contention that shirt waists were good enough, and all that the heat warranted. On some of the lines in the vicinity of New York the same point came up, and the men took the initiative, but only went so far as to remove hats, coats, vests, suspenders, collars and ties, but did not don shirt waists. We can not say that the spectacle was brilliantly successful. Such hot weather may not return this summer, but there are other summers, and the question of light uniforms is worthy of consideration. Uniform makes for discipline, and if neat and handsome, cultivates personal pride among the wearers. To throw off uniform means, oftentimes, an insensible abandonment of restraint and discipline, and to the outsider has a bad appearance, even if an adverse judgment is not justified by any slackening in efficiency. On the other hand, the ordinary heavy wear is not exactly the right garb for the hottest July in thirty-one years, and the effort to get rid of some of it for a time is not blameworthy. It does seem easy to pick out a uniform that would be as appropriate for summer as is the ordinary heavy cloth one for winter. It need not be much, but uniformity is, of course, the essential element, next to lightness. With lighter wear the men would, doubtless, be more efficient, so long as there was not the sense that discipline is relaxed; and that is the danger where a uniform is thrown aside and everybody comes out in his own style of dirty or glaring negligee costume, as did the motormen on one line outside of New York, but not many miles from New York City Hall.

High Speeds on Highways

In the recent automobile race between Paris and Berlin the records for high speed, long-distance travel on public highways were broken, and when the elaborate precautions taken to keep the roads clear are taken into consideration, it is safe to say that it will be a long time before the same speeds will ever be allowed again in times of peace. Practically the entire distance was policed, and where the motor cars passed through towns on their way, a clear road was assured by cordons of soldiers. Even with these precautions there were several accidents, and others were avoided more by good luck than good management. The best time for long-distance runs was 744 miles in sixteen hours and six minutes, or an average of 47 miles per hour, while on short stretches of straight road the speeds ran as high as 70 miles to 75 miles per hour. It seems somewhat strange that this contest should have been held and these speeds secured in countries where the running time of all regular trains is so much slower than in this country, and still stranger that the automobiles should be allowed to course through city streets at rates so greatly in excess of those at which the trams are allowed to proceed. Although useless in many ways, the contest, in the elaborate protection of the roads required, teaches a perhaps sufficiently obvious moral that high-speed transportation on public highways is impracticable in ordinary commercial service for either automobiles or trolley cars, so that if the latter wish to make good running time they must "take to the fields." This being the case, the interurban electric road need not have very much to fear from the automobile. With the city road the situation is possibly a little different, although it is very doubtful whether even here the automobile has yet demonstrated its ability to offer any kind of serious competition. Operated in conjunction with a trolley line, however, there would seem to be instances where an automobile service might prove advantageous. Take, for instance, a short spur or connecting line where the traffic is light and the regular car schedule can not be arranged to provide the service without long lay-offs at either end, or where track rights can not be secured, or are not worth securing. We know of one or two instances of this kind, and believe that with care an automobile service might be made profitable.

A Motorman's Nerve

In the discussions of the annual meeting of the British Medical Association last week, Dr. Alexander Scott, of Glasgow, made the alarming assertion that most railway accidents were due to neurosis of railway men, caused by the nerve tension of their duties. To prove this he cited many cases which had come under his own observation. After citing a number of cases from steam railway practice, he stated, turning to trolley railway work, that a Glasgow man, who had been accustomed to driving horses, was put on an electric vehicle. He caused a smash-up in which one person was killed and several injured. It was proved that the man had not tasted drink and the case was one of nervous tension. The doctor thought it was time to consider whether more attention should not be paid to the temperament of railway men, and he deplored the fact that the medical profession was so poorly represented at inquiries in regard to the causes of railway accidents. The point thus raised by Dr. Scott is an interesting and important one, but we doubt whether the motormen employed by the American street railway companies are to any serious extent afflicted with neurosis. They never impressed us that way. Every company, for its own sake, seeks at the outset to insure that each man shall be well selected, with a nerve not less steady than his hand and eye. The process of natural selection also comes into play, and the man of excitable temperament who might, perhaps, in the old days have been able to keep his nose close to a horse's tail all day, jogging along, without any grave disturbance of his equanimity, soon drops his job, or is made to do so, if the higher tension of the swift electric car is more than he can stand. In this respect we think that the instruments which show how a man throws the current on and off his car are very useful as an indication of nerve character. While on the whole, the quality of imperturbability is a good one to have with which to withstand the excitement of the busy street and its obstacles, the average motorman fortunately takes his excitements stolidly.

Passengerial Eccentricity

Aside from regulating the behavior of their own employees, street railway companies often are perplexed in making provisions which shall tend to render their passengers amiable with each other. Putting aside the moot point whether passengers should be allowed to cramp each other by standing up in vacant aiseways, there are many other situations where the mutual conduct of passengers toward each other can do much to mar or increase the comfort of a ride. The spitting habit is one of these things, for example, in which the natural desire for relief from superabundant saliva ought to be instinctively governed by the amount of pleasure that it gives a fellow-passenger—a lady—to see one spit skilfully. The interference of the conductors at such times is laudable, but rarely triumphant. Again, in disputes about fare, it is natural for a passenger to resent supposed extortion, but it surely should never be deemed right to supplement a refusal to pay by hurling chisels all around a car. But this is what a carpenter did in New York last week with the result that an innocent fellow-passenger became an inmate of the Flower Hospital. That was pushing protest to an excess. Passengers, moreover, are rather exacting sometimes; and in Paris a court has just held that a conductor need not assist or conduct a lady passenger to her seat, he not being an usher. This seems obvious, but the lady sued for \$4,000 to offset a damaged leg, her injury being sustained while she tried to get to her seat. Her ideal is certainly ours, and we hope that some day more leisurely, polite methods will prevail. But in London there is another lady who travels by the Regent Street omnibuses, and who boards them very frequently, but never rides more than a dozen paces in any one of them. Now, it is hard to picture the poor conductor trying to play the role of a Chesterfield to such a fare as that, upon whom an injunction to "step lively" would be sadly wasted. An idiosyncrasy of this kind helps the company's receipts, but usually the eccentricities of the passenger are inimical to good service and fair dividends.

Street Railway Freight

Note is made in these pages from time to time of the rapid development of street railway and suburban freight systems. It is hardly realized how large is the business thus carried on in various parts of the country. For example, it is stated that some 10,000 gallons of milk are now delivered daily in Cleveland by the inter-urban trolley cars. In fact, the Commissioners of Cuyahoga County are endeavoring to find a limit as to the amount and extent to which street railway companies shall be allowed to become interested in such traffic. The companies are averse to severe limitations, as are their patrons; while the authorities want clauses to prohibit the carrying of other than box or package freight. The same growth is visible in many other sections of the country, and it is noted, in Connecticut for instance, that around New Haven a large trolley freight traffic has been created. The local company has just put into service a new 40-ft. freight car, first of a series, and a sub-organization is already running nineteen auxiliary delivery wagons. Now, on all this business, the local company earns a revenue while rendering a public service; but we often wonder whether there is any effective limit to the gratuitous work of hauling freight that is thrust upon the companies in the big cities. A correspondent of one of the New York dailies asks the same question, and remarks quite pertinently of a recent trip:

The car was crowded, as those cars nearly always are, and on the platform I observed one man with a valise too big for him to carry; a messenger boy with a dress-suit case, carrying it to or for somebody; a man with two arm baskets filled with empty milk jars; another man with a box of empty bottles; a workman with a bagful of tools, one item being a long-handled shovel, and lastly, a boy with a basket filled with some kind of straw-packed stuff on his arm and in one hand a paper box nearly as tall as he was. In the car half filling the aisle was a man near the door with a big paper box on the floor before him, and further along another with a somewhat similar box. Just what the women carried in their laps in the way of delivery wagon loads I did not observe, being too busy taking care of myself on the platform among the freight. I suppose it is all right, in fact I know it is, that a traveler going to or from a railroad station or dock may carry his hand baggage on the car, and a workman might carry his tools, but it is neither fair to the car companies nor to the passengers for persons not riding to send their freight by street car. Certainly small dealers should be prohibited from using the cars as delivery wagons.

We are aware that attempts are to be made to develop a convenient delivery system in New York City, by running light freight cars in the slacker hours; but it is difficult to see how they can touch such an abuse as that just signalized. To ask the weary conductor to check it by drawing the line, say at 56 lbs., would invite as many free fights as a like attempt to enforce rules against standing. But the nuisance is there, all the same.

Electric Power for Heavy Service

It is noteworthy, when the extent of the application made of electric power is considered, that it has not replaced the steam locomotive to a greater extent than it has. For elevated railway work it has usurped the position of its steam rival, it has driven the horse and mule from the streets, and on interurban electric railways it is carrying on a close competition with neighboring steam roads for local traffic. But a treatise on the use of electric power on the trunk roads at the present time would be like one on snakes in Ireland. There is none. To be sure in certain isolated cases like that of the Baltimore tunnel, and on the short sections of track where the New Haven road, under the direction of Col. N. H. Heft, has been employing electric power for special conditions, the service is being continued, and is presumably satisfactory, but the radical change from steam to electricity, even for heavy suburban trunk line service has not yet taken place. This is all the more worthy of note from the fact that a number of the steam railroad companies several years ago evinced a great interest in the silent and invisible power, and several of them, like the Illinois Central, Erie and Long Island, conducted a careful investigation into the practicability of electric service on some of their suburban lines. It is not proposed to discuss here the reasons for the retention in these cases of steam power, nor the seemingly practical abandonment of interest at the present time of steam railroad engineers in the application of electricity to heavy railroad traffic. It is a very broad question, and the chief objections to

the employment of electric power on divisions where it would be preferable to steam seems to be, as claimed by the steam companies, first, trouble in the switch yards, and, second, a sacrifice of simplicity by the use of two motive powers, as steam would have to be retained for long-distance traffic.

Independently of the real value of these objections to the use of electricity, there is one phase of the question, however, which is of interest to the electrical fraternity, and that is the advantages possessed by electric locomotives on heavy grades. For mountain climbing their constant torque and practically inexhaustible energy render them particularly suitable to the work to be performed, and if water powers are available, they provide a very economical method of haulage. The experience in the Baltimore tunnel has shown that the heaviest freight trains can be handled with ease by the modern electric locomotives, and that the latter are as reliable for this service and are more easily controlled than a steam engine. The announcement, therefore, does not come as a surprise that the engineers and operating officers of the Canadian Pacific Railway system have been experimenting with electrical power as applied to heavy railroad trains, and they believe that the electric locomotive provides an economical way to move trains over high mountain grades without the use of steam engines. This matter, it is said, is to be submitted for action at the next meeting of the Canadian Pacific directors. It is also reported that the Baltimore & Ohio Company is considering the use of electric locomotives for the same purpose; that is, on some of the heavy grades on that road, where it crosses the Allegheny Mountains, and where the regular steam engine has now to be assisted by one or two others in making the ascent.

The New York Central Tunnel

As advocates of the adoption of the best means of mechanical traction, and having recorded so long and so often the admirable results achieved by electricity in this great field, we can but commend the presentment of the New York Grand Jury when it says, as regards the improvement of the Park Avenue tunnel: "The Grand Jury is convinced that in the present state of the art of electrical application to mechanical ends, the progress has been so general and uniform that everything requisite for an electrical installation and its approaches is as standard at the present time as steel rails or car wheels; that to install electrical traction in these tunnels and the approaches thereto, everything required can be had without difficulty, delay or great initial expense." This broadly put, the finding is true, and might have been penned in regard to any other tunnel where steam is still in use, whether the New Jersey termini opposite New York, the tunnels between Paris and London or the Metropolitan road that Mr. Yerkes is trying to reclaim. It is in the application of the dictum that the difficulties lie, and we can well imagine that a great corporation must feel sore at being thus held up to public obloquy by those who can in nowise suggest actual solutions of its problem.

After all is said and done, the difficulties that confront the New York Central in making a change to electric traction at its main terminal are very serious, and nothing is gained by minimizing them. So far as we can judge, the strongest complaints come from the commuters who travel over the road daily. The through passenger, after a long run across country, thinks nothing of the seven or eight additional minutes he spends in "brushing off;" but there is no doubt that the commuter takes his tunnel punishment hard; and now that other lines of travel are luring him away, he is more than ever a factor to be reckoned with and humored. When one looks upon the superb new depot that the company has built, when one contemplates the magnificent and lavish manner in which the tracks for miles out have been sunk between stone walls and bridged with steel, it is impossible to feel that expense enters into the calculation. What the company needs is good advice and a little courage. It is even to be regarded as a misfortune that the marked mechanical genius shown by a member of the family which

created and maintains the New York Central system should thus far have been concentrated on steam locomotives rather than on electric motors, for, after all, with a railroad or a man, "it is not where you are at, but the way you are going," and the whole drift of the times is away from steam traction and toward electricity. This is not an opinion, but a plain, palpable fact.

It is unfortunate, moreover, that at this juncture in the fortunes of the New York Central system, there should exist, as there undoubtedly does, in many quarters, a suspicion that if some of the high officials of the road had not been hoping to solve the problem with some kind of a stored steam motor, electricity would long since have been given a better chance. In the meantime, worthy of its long and honorable traditions, the New York Central will, we are confident, grapple with its problems, and lead the way to new achievements worthy of itself and the new century.

The excuse is sometimes made, indeed was advanced, by a correspondent in a recent issue of this paper, that the importance and extent of the traffic through this tunnel prohibited any tests in it of an untried system; that the experiments required with any installation of this kind, even if the troubles incident to putting it in operation were confined to only those which its most ardent advocates would admit are inseparable with any new system, would seriously delay the other traffic; and that a road having the enormous train service of the New York Central was not the place to make the preliminary experiments. These arguments are weighty, no doubt, but do not explain why the preliminary trials with electricity could not be made on some other branch of the New York Central, where the initial problems could be worked out without interfering with any through traffic. The managers of the Metropolitan Street Railway did not select Broadway as the scene of their early trials with the underground conduit system, but installed a section on Lenox Avenue, at the northern end of the city, and it was only after this method of street transportation had proved to be practical that it was extended to the heavy traffic lines of the company. Now the New York Central Railroad, in its New York and Putnam division, possesses an ideal section of track on which to install electric traction. The line connects at its southern end with the Manhattan Elevated Railroad system, soon to be running by electricity, carries a suburban traffic and has no through trains, or practically none, to interfere with the electrical service. It would seem as if here the railroad company had an ideal road for electrical operation, and one, too, where the engineers and officials could study the larger problems which would have to be overcome in the electrical equipment of its main terminus.

The Final Contracts by the Manhattan Elevated Railway

The final large contracts for the completion of the equipment of the rolling stock of the Manhattan Elevated Railway were awarded last week, and consist in contracts for the heaters and air brakes. The former was given the Consolidated Car Heating Company, of Albany, N. Y., and calls for the electric equipment of 1200 cars. Each car will contain eighteen heaters, making the total number of heaters 21,600. These 21,600 heaters, it is calculated, will contain 64,800 coils, which will give a length of 1,350 miles of wire and a heating surface of 58,722 sq. ft. The iron will be practically 94 tons in weight and the heating cores, if placed end to end, would be about 12 miles long. The order was obtained through the energetic efforts of C. S. Hawley, of the New York office.

The contract for the air brakes was given to the Westinghouse Company. As announced some weeks ago the traction brake interests of this company are to be handled by the Standard Traction Brake Company, which is now a Westinghouse property. The Standard Traction Brake Company, it will be remembered, is a new corporation, organized by the Westinghouse interests, which has taken over the former Standard Air Brake Company, and will handle all of the brakes for electric railway service made by the Westinghouse Air Brake Company, including the new electric brake described in a recent issue of this paper, the axle-driven brakes and motor compressor brakes. All of these types of brakes will be manufactured at the shops of the Westinghouse Air Brake Company at Wilmerding, Pa.

Seeing Washington Observation Cars

Early in the month of January of the present year, the residents of Washington City observed for the first time the novel excursion or Seeing Washington Cars traversing the principal thoroughfares and avenues occupied by the superb street railway system of the

through a thorough and systematic course of training, and when this is completed they are only allowed to lecture over a portion of the trip, increasing the length of their address as they become proficient. The result is that the patrons of the car hear an address delivered from the standing lecturer, through a megaphone, that keeps them interested for two hours. This is an ac-



OPEN CAR WITH OBSERVATION PARTY, WASHINGTON

Washington Traction & Electric Company, and their many inquiries concerning the presence of these cars on the streets were quite fully answered in the numerous notices that appeared in the columns of the city's daily papers.

While the introduction of these cars in the city of Washington was in the nature of an innovation, the idea was not a new one, since a similar service had been previously inaugurated in Denver, Col., by the promoter and general manager of the Washington enterprise. Washington, however, offers, as the capital of a great nation, numberless and superior advantages in points of general interest for such an enterprise, and the local and visiting public immediately patronized the cars. The points of interest cover a wide field, in a city with miles of beautifully laid out trees, lined streets and avenues, of smooth asphalt, bordered by the magnificent public buildings, hotels and residences of people of wealth. A city well provided with parks, and in nearly all of them are monuments or statues to men who helped to make the history of the world's greatest republic.

To the uninitiated the city is a vast unexplored storehouse full of items of human interest, and withal contains those blots on an otherwise spotless escutcheon, the places where two of the republic's presidents fell by the foul hands of assassins. All this, and a thousand other things are told by the guide in charge while the passengers travel along in the Seeing Washington Cars.

Satisfactory arrangements were made with the Washington Traction & Electric Company whereby the Seeing Washington Car Company is furnished with observation cars suitable to the season. The cars are run on regular schedules and make several trips each day. Twenty-five miles of streets are traveled in two hours, during which time the lecturer delivers a splendidly prepared address which covers completely in 23,000 words the 1000 points of interest seen by those on board the cars as they are passed.

The offices and waiting rooms are located at 1419 G Street, N. W., in the exact center of the street railway traffic of the two great traction systems which gridiron the city and its suburbs, and directly opposite the starting point of the cars. Here the cars in charge of the railway company's motormen are packed on a reserve section of track until the time for starting, when they are taken in charge by the observation car conductors and lecturers. The passengers secure their tickets at the office, except, of course, those who take the car while en route, these purchase coupon tickets from the conductors. The regular fare is 50 cents. Many parties are met at their hotels, taking the car as it passes on its regular schedule trip. The lecturers are men of fine appearance, with pleasant and well-trained voices and experienced in addressing assemblages of people. Before taking the cars they are put

complished fact, and when the reader remembers that the car travels through some of the busiest streets, it seems wonderful that a training can be acquired to speak so as to be heard above the noise and din of the traffic of busy thoroughfares.

The enterprise is operated in a systematic and businesslike manner. The management keeps well informed as to all excursion parties and conventions expected in the city, and sends its agents to meet the trains bearing them some distance from the city, and



CLOSED CAR USED FOR SEEING WASHINGTON

plan for entertaining the visitors on the observation cars. Other agents look after the visitors at their hotels and arrange for excursion parties of societies and orders, composed of the local citizens.

When necessary, the cars meet the trains at the depots, and in event of delayed trains, instead of waiting any length of time at the depot, make trips around short loops, thus avoiding a blockade of the street railway system. The winter cars used have a seating

capacity of fifty passengers, the summer cars seat eighty. No crowding is allowed. In the event that there are more passengers than the cars will seat, other cars are provided. There are a number of fine amusement resorts on the suburban lines of the Washington Traction & Electric Company, and private excursion parties secure the observation cars and lecturers for these trips.

As seen in the two views, one showing two closed winter cars, and one a summer car, signs are displayed notifying the general public that the cars are observation cars, and also that they are "special cars." This avoids any annoyance from local travelers attempting to board the cars.

By special arrangement the cars call at hotels for the excursionists and return them to their hotels after the trip. The route lies over several divisions of the traction company's system, and as these divisions are interconnected at so many points, it is an easy matter to cover any selected route, and in event of blockade on any line due to accidents, the Seeing Washington Cars can temporarily change their regular route and thus avoid delays. It is reported that the Seeing Washington Car Company will shortly be in the market for several new cars built after special designs now being prepared, in order to improve what now seems to be a perfect service.

New Franchise at Ottumwa

The Ottumwa Electric & Steam Company, of Ottumwa, Ia., has, after some little opposition, succeeded in having its old franchises extended to twenty-five years. The former franchises had a life of seventeen years from that time, but the owners of the property (which includes both street railway, electric light and steam-heating plants) wished to increase the present investment and issue bonds so that an extension was desirable. Under the laws of Iowa it is necessary to submit the franchise, after its passage by the City Council, to the voters of the city for ratification. The franchise was carried by an overwhelming majority. This being the first franchise of its kind that has been granted in any of the larger cities of Iowa, some of its features are of interest, especially to investors in Iowa properties. The company is now operating about 7½ miles of track (some of it over grades as high as 11 per cent) in addition to 137 alternating street arcs, 100 commercial arcs, a 500-volt power service and 6000 incandescent lamps. It was the first company in Iowa to do exhaust steam heating and has about 3 miles of pipe line, installed by the American District Steam Company. This gives an idea of the size of the company's plant, which is essential in considering franchise terms. The new street railway franchise provides that within eighteen months there shall be at least 2½ miles of new track, and that after Sept. 1, twenty-four tickets shall be sold for \$1, and that school children shall be sold twenty-

Meeting of the Illinois State Electric Association

The executive committee of the Illinois State Electric Association, consisting of William B. McKinley, J. H. Baker, R. L. Allen, W. E. McCullough and J. F. Porter, with the officers, J. D. Gerlach, president; E. B. Hillman, vice-president; H. E. Chubbuck, secretary, and D. Davis, treasurer, have authorized a change in the date of the next annual meeting of the above association, which will be held at Rock Island, from the 27th of November to the 24th and 25th of September.

Secretary H. E. Chubbuck announces that after consultation with Messrs. Davis and Sharpe, who represent the electric interests of Rock Island and Moline, the following programme has been outlined for the meeting:

- Sept. 24, 10.00 A. M. to 12.30 P. M.—Morning session.
- " 12.30 P. M. to 2.00 P. M.—Lunch.
- " 2.00 P. M. to 3.00 P. M.—Afternoon session.
- " 3.15 P. M. to 6.30 P. M.—Boat ride on Rapids.
- " 6.30 P. M. to 8.00 P. M.—Supper.
- " 8.00 P. M. to ————Rock Island Club.
- Sept. 25, 9.00 A. M. to 12.00 M. —Papers, etc. Election of officers.
- " 12.00 M. to 1.00 P. M. —Lunch.
- " 1.15 P. M. to 6.00 P. M.—Visit to the Arsenal, People's Power Company and street railway plants, also a trolley ride to different Moline factories, etc.
- " 7.00 P. M. to ————Black Hawk to banquet and adjourn.

The membership in the association has now reached eighty-two, and as many companies will be represented at the convention by at least two representatives, it is thought that there will be fully one hundred delegates at the meeting. The headquarters will be at the Harper House, Rock Island. The meetings of the association have always been well attended, and a most successful convention is anticipated.

Washington Traction & Electric Properties

The following table of the operation for the year ending Dec. 31, 1900, of the properties of the Washington Traction & Electric Company has been made up for the companies available from the statements filed with Congress, that for 1898 from reports in *American Street Railway Investments*. Owing to the classification adopted in the Congressional reports, it is somewhat difficult to apportion the figures in the several columns given in the 1900 report, and in all instances it was not possible to determine the proper location of each account. In several cases the amount

NAME OF COMPANY.	FOR THE YEAR ENDING DECEMBER 31, 1898.						FOR THE YEAR ENDING DECEMBER 31, 1900.					
	Miles.	Gross Receipts.	Operating Expenses Including Taxes.	Earnings from Operation.	Interest on Funded Debt.	Surplus.	Miles.	Gross Receipts.	Operating Expenses Including Taxes.	Earnings from Operation.	Interest on Funded Debt.	Surplus.
Anacostia & Potomac River Ry. Co.....	15.4	\$32,743	\$31,850	\$893	a \$120	\$473	27.8	\$197,195	\$158,471	\$38,724	\$56,315	d \$17,591
Brightwood Ry. Co.....	11.0	55,935	c 47,565	8,370	-----	8,370	11.9	54,230	55,234	d 1,014	19,152	d 20,166
Capital Ry. Co.....	-----	-----	-----	-----	-----	-----	e 1.3	e 16,172	e 20,729	e 4,557	e 531	d e 5,088
City & Suburban Ry. Co.....	19.5	27,984	26,675	1,309	b 75,000	d 73,691	31.8	235,928	197,942	38,586	92,123	d 53,537
Columbia Ry. Co.....	5.6	171,397	80,007	91,390	37,386	54,004	13.9	217,905	100,583	108,322	55,243	53,079
Georgetown & Tenalloytown Ry. Co.....	9.5	24,225	21,826	2,399	6,355	d 3,956	8.8	31,732	38,760	d 7,028	4,144	d 11,182
Metropolitan R.R.....	22.0	836,819	653,614	183,205	74,930	108,275	22.7	797,833	431,982	365,851	122,617	243,234
Washington & Glen Echo R.R. Co.....	12.9	-----	-----	-----	-----	-----	7.6	f -----	-----	-----	-----	-----
Washington & Great Falls Electric Ry. Co..	10.0	40,903	21,297	19,606	b 24,000	d 4,394	13.6	78,662	60,392	18,370	4,746	13,524
Washington & Rockville Ry. Co.....	-----	-----	-----	-----	-----	-----	10.1	-----	-----	-----	-----	-----
Washington, Woodside & Forest Glen Ry & Power Co.....	-----	-----	-----	-----	-----	-----	2.9	f -----	-----	-----	-----	-----
Total.....	105.0	\$1,190,006	\$882,834	\$307,172	\$218,081	\$89,081	152.4	\$1,629,637	\$1,072,493	\$557,144	\$354,871	\$202,273

a The report for the previous year shows interest payment \$20,621, and deficit for the year of \$13,621. b Estimated. c Including taxes and interest. d Deficit.
 e For the year ending Dec. 31, 1899, no report for 1900 filed in the Second Session, 56th Congress. f Maryland corporations and no report filed with Congress.

four tickets, good between the hours of 8 A. M. and 5 P. M. on school days, at 3 cents each. Royal H. Holbrook, formerly chief engineer of the Cedar Rapids & Marion City Railway, is the new superintendent. He took charge April 1, and is rapidly bringing the Ottumwa property up to the high state of commercial efficiency which he kept at the Cedar Rapids plant. Mr. Holbrook's face is a familiar one at street railway conventions and at many of the power houses between Buffalo and the Pacific Coast, where he has been a welcome visitor as a man full of good ideas in mechanical and electrical engineering.

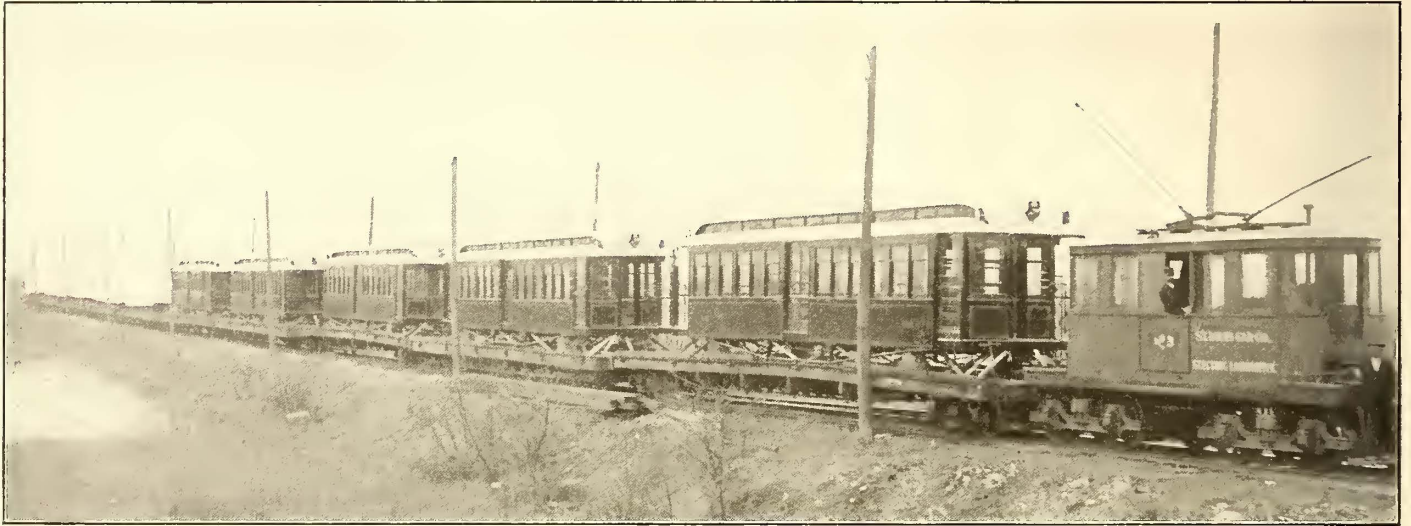
charged to interest does not correspond with the amount calculated from the bonded indebtedness outstanding. The interest due on all the bonds of the companies mentioned above, as calculated from the reports in *American Street Railway Investments* of bonds outstanding, would amount for the year 1900 to a little less than \$450,000 annually, against which, of course, should be credited the earnings from operation of the Washington & Glen Echo, the Washington & Rockville and the Washington, Woodside & Forest Glen Railway & Power Companies.

The Modern Convertible Car

A great deal of interest has been shown by railway officials recently regarding the subject of convertible cars. For years car designers have been striving to perfect a practical type of car which was suitable for both winter and summer service, and a considerable amount of space in this paper has been devoted to them. A successful car of this type, one that will meet the requirements and at the same time be handsome in appearance, symmetrical, and

Railway Company has ordered 120 of these cars, the Birmingham Railway, Light & Power Company, 20; the St. Louis, Belleville & Suburban Railway Company, 40; the latter order calling for 40-ft. cars. Syracuse and Schenectady have recently been furnished with this type of car, and from the amount of work on hand the St. Louis Car Company expects to turn out in the neighborhood of 800 to 1000 within the next year. They are built in various designs from 20 ft. up to 65 ft.

The accompanying engraving shows another product of the St.



TRAIN OF CARS DESTINED FOR BOSTON ELEVATED RAILWAY!

show results that are satisfactory, will therefore prove an important factor in the field of electric railway car construction.

There has been much published lately describing various convertible and semi-convertible cars which differ radically from former ideas of this class. They are mainly of three types, viz.: first, cars built with large side windows, having sash that lower in a pocket under the arm-rail. The pocket extends to the bottom of the channel steel side sill, which permits the use of an 8-in. lower arm-rail than where the ordinary wooden sill is used. The second type of car is provided with large side sash, which are removed from the car for summer service. The third type is a car with sash arranged to raise, and slanting pockets provided in the ceiling of the car overhead. The sash are stored in a manner similar to that used for the front window in a hansom cab.

The St. Louis Car Company, of St. Louis, Mo., has been most successful in the development of the first type of convertible car, mentioned above. Having come to the decision that a car which could be instantly changed from closed to open and vice versa while on the road was more desirable than one where a return to the car house is necessitated for the change or the symmetry of the ceiling affected by the introduction of pockets to hold the sash. The St. Louis Car Company's patent convertible car, with steel-channel bottom, is one of the most perfect, substantial, noiseless and long-lived cars of this type. It is built under patents obtained by J. H. Robertson when he was with the Third Avenue Railway, of New York City, and that company was the first to purchase 100 of these cars. In these cars all the features of a convertible car were embodied, but since the original cars were first put into service, by experimenting so as to better suit the requirements, they have been considerably improved. In this advanced type of car, steel 8-in. channels are used for side sills, a space between the two channels providing for the drop of the sash flush with the arm-rail, and a conveniently arranged flap closing up the opening when sash are dropped or raised. Should any refuse be thrown into the pockets in any way it will fall through and not accumulate as in other types of cars. The arm-rail is about 4 ins. above the seat cushion, and when the windows are opened all the space above this point and the ceiling is open for circulation of air.

These cars have been adopted by many large city lines. Many convertible and semi-convertible cars which look all right on paper have been found to be quite impractical for anything but rural service, the requirements of continual urban and interurban running being beyond their limitations. The fact that this type of convertible car has been largely adopted in Germany, and that the English Government, as well as its colonies, are very much interested and are giving it a thorough trial, is a guarantee that it has proved its merits both at home and abroad. In addition to the convertible feature, this car also has claimed for it great strength and durability and a minimum cost of maintenance. The Chicago City

Louis factory. The company is supplying a large number of cars for the Boston Elevated Railway Company, a description of which was given in these pages last week, and forty-five of them have recently been shipped in the manner illustrated.

For a Consolidation of Central New York Roads

Several months ago attention was called to the number of roads in Central New York controlled by Messrs. Power and Colvin and their associates, and now it is said that arrangements have practically been completed for a consolidation of these systems. In fact, arrangements are said to have been so far perfected that the number of directors for the new company to control the various independent systems has been decided upon, and that the incorporation of the new company is about the only step that is required to perfect the consolidation. The consolidation will include six companies—Stillwater & Mechanics Street Railroad Company, Glens Falls, Sandy Hill & Fort Edward Street Railroad Company, Greenwich & Schuylerville Electric Railroad Company, Warren County Railway, Saratoga Traction Company, and the Saratoga Northern Railway—and the new company is to be known as the Hudson Valley Railroad Company. The reported capitalization of the new company is \$26,000,000.

Increase in Jurisdiction of Railroad Commissioners in Connecticut

The new law placing the electric street railways of Connecticut under the supervision of the Board of Railroad Commissioners has become operative, and the duties and responsibilities of the board have consequently been largely increased. The legislation is partly the result of the trolley catastrophe at Peck's Mill, by which twenty-nine persons were instantly killed; and which, in a large measure, grew out of the premature opening of the Shelton Street Railway. The Commissioners now have exclusive jurisdiction and direction over the method of construction of street railways, and authority to designate the kind and quality of track and materials, and the method of applying the motive power. No trolley system can be opened to public travel until the Commissioners formally certify that it is in suitable and safe condition. They are required to inspect every trolley line periodically, and to recommend from time to time to its managers the adoption of such measures as the dictates of public safety and welfare suggest. They are authorized to employ an electrical engineer and as many experts as may seem desirable. Any railway company that feels aggrieved at any ruling of the Commissioners is authorized to appeal to the Superior Court.

London Letter

[From Our Regular Correspondent]

No sooner have the London streets begun to assume a normal aspect after the completion of the enormous amount of underground work which was done last winter than new arrangements are being completed for a wholesale upheaval of the streets again this year. Last year the whole of the Victoria embankment was open from end to end and traffic completely blocked, and it is now stated that it is again to be opened for the new River Company. It is also stated that the postoffice authorities, who are still working on their telephone system, are going to tear up Shaftesbury Avenue, Rosebery Avenue, and, most important of all, Queen Victoria Street, from Blackfriar's Bridge to the Mansion House. In addition to this, the County of London and Brush Provincial Electric Lighting Company, the London Electric Supply Corporation, the Metropolitan Electric Supply Company and others intend to tear up Holborn, Holborn Viaduct, Blackfriar's Road, Trafalgar Square, The Strand, Northumberland Avenue and other important avenues of communication. This does not represent the complete list, but it will show how the citizens of London will again have to suffer from this form of street obstruction and what a boon to London it would have been had the main thoroughfares been equipped years ago throughout with a large underground tunnel such as does exist under a number of the streets in the city, and which it is interesting to note is always put down under any new thoroughfare which may be built.

At a meeting of the Colchester Town Council the tramways committee recommended that the Town Council should approach the Board of Trade with reference to the proposed adoption of a system of cars propelled on the electric trolley system, but without the expense of tram lines, which, in other words, would mean a system of electrical omnibuses. The report was adopted, and it will be interesting to find out what the Board of Trade has to say regarding the matter.

When it was announced in a public meeting of the stockholders of the District Underground Railway that the control of the company had been secured by Mr. Yerkes it was imagined that an early solution of the whole problem of the electrification of the old underground system in London would be promptly forthcoming. Weeks and months have, however, passed by, and to all intents and purposes we are no nearer a solution of the difficulty than a year ago. The whole trouble seems to be from the fact that the Inner Circle of the Underground Railways is controlled by two separate companies, which, while they operate together, have separate capital and entirely separate management. When Mr. Yerkes secured the control of the District Company he did not secure control of the Metropolitan Company, and, as these two companies are entirely at variance as to the proper way to equip the underground system, as they generally are on other important problems, there appears to be a deadlock against progress being made. The two companies have now taken their troubles to a committee of Parliament, who in turn have taken counsel with the Board of Trade, and the result now is that the preamble of the bill of the District Railway Company for electrification of its system and powers to build a large £400,000 power house has been passed with the stipulation, however, that within two months the two companies must have agreed upon the electrical system for the working of the Inner Circle and the city lines and extensions. The Board of Trade is thereupon to appoint an arbitrating board to take evidence upon the two systems (it should already have been said that the Metropolitan Company, being still in favor of the Ganz system and the District Company naturally in favor of some system with which the Americans have had experience), and will then have the responsibility of determining which system is to be adopted. It will thus be seen that the position is one of no simplicity, and the final result will certainly have been attained after an immense amount of labor and thought and the solution of an intricate problem which one would never have conceived possible a year or two ago. The fight has been a long and keen one from beginning to end, and it will be a matter of great interest to know what the position of the Board of Trade will be. Meanwhile Londoners are patiently waiting for the solution of the problem, and they are undoubtedly willing to give increased patronage to this old road when equipped in a manner insuring modern comfort.

The two cities of Manchester and Salford are still in the throes of a deadlock as to the joint use of their systems of electrical tramways, which both cities are putting down. For years past the Manchester Tramways and Carriage Company operated the tramcars both in Manchester and Salford, and recently when this contract expired both of the corporations took possession of

their own system of tramways and operated at first with amicable arrangements, the Salford cars being allowed to cross the river and make their turn by way of Deansgate and back into Salford. When the two cities began to develop their systems, however, it was expected that through cars would be run between Salford and Manchester, as they were naturally doing in other cities, treating the two cities of Salford and Manchester as if they were only one, which, to the ordinary stranger who visits Manchester, would appear a most sensible way to conduct tramway matters, it being a matter of difficulty to know when one is in Manchester and when in Salford, so closely are the two cities situated. Later on, however, difficulties arose, and now no Salford car goes into any portion of Manchester, nor does any Manchester car touch Salford. The inconvenience is not really a great one, as the two lines of cars are only separated by 100 yds. or so, and through cars have never been used. The inconvenience is not felt, however, simply because the citizens have never had the privilege of through cars, but to anyone visiting the two cities it must be apparent that an amicable working arrangement between the two cities would be most beneficial. The difficulty between the two corporations is naturally a financial one, the Salford Corporation claiming that the Manchester Corporation desires altogether too much for the privilege of running Salford cars in Manchester. The differences between the two corporations would take too long to explain, and one would have to give details of almost every meeting of the committees which have been held. Suffice it to say, however, that the tramways committees of both cities are making earnest efforts to come to some arrangement, and it is to be hoped that ere long some amicable solution will be arrived at. Meantime both corporations are proceeding as rapidly as possible with the electrical equipment, Manchester having three sections already complete and in operation, although Salford has not as yet been able to inaugurate any of its electrical system.

A committee of the House of Commons is still considering evidence which is being called on behalf of the promoters of the Manchester and Liverpool Electric Express Railway bill, which is the bill that proposed to join the cities of Manchester and Liverpool by the overhead mono-rail system. Most of the experts in the country in railway construction have been called, and some of the most important opposition to the scheme, including even that of the city of Salford, has been withdrawn, so that it looks as if the bill has a better chance of passing this year than it had during last session, when it was thrown out.

The Nottingham Tramways Committee has just received from the Electric Railway & Tramway Carriage Works, of Preston, a new electric road sweeper, which, as it contains a water tank, can be used for either sweeping the track or sprinkling it. It can be driven or controlled from either end, as the driving gear, gear for raising or lowering the brushes, the water valve, brakes, etc., are all duplicated.

The award of the arbitrator (Sir Frederick Bramwell), appointed by the Board of Trade in regard to the purchase of the Portsmouth tramway undertaking from the Provincial Tramways Company by the Portsmouth Corporation, was made known recently. The Corporation has already paid £10,000 for the horses and cars, and is now ordered to pay the company £185,633 for the lines, in addition to the costs of the arbitration. The amount originally offered was £150,000, while the company claimed £280,000. The Corporation is now engaged in relaying and extending the lines for electric traction, and the total cost of the purchase and conversion will, it is estimated, exceed £600,000. The new electric cars will, it is hoped, be running by the autumn.

It seems only a few weeks since we recorded the opening of the electrical services of the London United Tramways, Ltd., although the completion of their first section of electric tramways took place months ago. On completion they were delayed by their dispute with the authorities of the Kew Observatory, but since opening their tracks a few weeks ago they have already done an enormous business, the electric tramways having become deservedly popular. The company has now cars running over about 16 miles of road, from Shepherd's Bush to Southall, to Kew Bridge, to Hammersmith Broadway and to Hounslow. The opening ceremony of an extension of their line from Acton to Ealing has recently been celebrated, when the occasion was made for the opening ceremony of the whole system. Many visitors were invited for the occasion, and were received by the chairman of the company, G. White, who was accompanied by Messrs. Everard and H. C. Godfrey, directors, and J. Clifton Robinson, managing director and engineer, to whose indomitable energy the whole success of the railroad is largely due. The visitors were conducted to cars at Shepherd's Bush, and the route taken was through Acton to Ealing, where the main thoroughfares were all decorated. The chief guest of the occasion was the Right Hon. A. J. Balfour, who at the luncheon submitted the toast of success

to the London United Electric Tramways. In the course of his speech he stated that the question of congestion in the centers of great populous areas might always be stated in terms of time and cost. There would be no congestion if we could all move at no expense with an indefinite speed from the outskirts to the center of London. He is a great believer in the providing of facilities for reaching the suburbs of the city from the great working portions of the metropolis, and he considered that the system of the London United Electric Tramways was no small contribution to the civilization and happiness of mankind. The chairman of the company referred to the progress which the company had made and to the tremendous opposition which they had met with, and stated that now at the end of five years they had 40 miles of route authorized, and he hoped in the near future they would have authority for an extension of other 54 miles. They are now carrying passengers at the rate of 32,000,000 a year on the 8 miles that have been already opened, and on the 16 miles which they are now inaugurating they expect to carry 52,000,000 per annum, and when they have 50 miles opened they have no doubt but what they will carry 150,000,000 passengers per year. He also made the interesting statement that the fares did not amount on the average to $\frac{1}{2}$ d. per mile, and that they were carrying workmen in large numbers at $\frac{1}{4}$ d. per mile.

It is interesting to note that all the cars which are now operated on the new extension of the London United Electric Tramways Company from Shepherd's Bush to Ealing are equipped with McGuire trucks, supplied by the McGuire Manufacturing Company, of which Frank Buxton is the manager in this country. This is about the first application of McGuire trucks in England, and doubtless they will be watched with a good deal of interest by tramway engineers who are interested to procure the best form of truck for electrical tramways. We understand that the European McGuire Manufacturing Company have orders for numbers of trucks to be used on several roads, and also for some special work on the Central London Railway, but as this is the first application of them in England they will doubtless be watched with more than ordinary interest.

D. Bruce Peebles & Company have just secured the order from the Corporation of Nelson, Scotland, for two 200-kw traction and lighting sets. This enterprising firm, on the occasion of the recent meeting of the Municipal Electrical Engineers in Glasgow, invited them to visit their works, which are situated in Leith. The works have been built upon the old Peebles estate, and, after an interesting inspection of their extensive factories, which they are rapidly increasing to accommodate a large amount of work which they are getting, the whole party adjourned to the lawn of the old Peebles mansion, where marquees had been erected for the proper entertainment of the guests. An elaborate luncheon was provided, and several pipers belonging to a Highland regiment were also in attendance to give proper effect to the entertainment by a Scottish company to the visitors, most of whom were naturally composed of Englishmen. Needless to say, Messrs. Peebles, Portheim and Pickstone, the "three P's" of the company, were in attendance, and did everything to secure the happiness and comfort of the visitors.

On visiting Manchester and approaching the suburbs of the city where Trafford Park is situated, from long distances can be seen looming up the enormous buildings which the British Westinghouse Electric & Manufacturing Company are erecting there at an expense of considerably over a million pounds. The work is now being rapidly pushed on, and is now in the hands of James Stewart, who, while of Scotch extraction, has got American methods. He is using all his abilities to push the work to completion. About 2600 men are engaged on the work, and every device for the saving of labor has been adopted. Needless to say, the building is entirely of steel with brick walls, and the whole of the steel work has been supplied by Dorman & Long, of Middlesbrough, who had the contract for the whole of the steel work. The British Electric Car Company is also building a comprehensive factory in Trafford Park, and, as W. T. Glover & Company, Ltd., manufacturers of electric cables and wires, and the Lancashire Dynamo & Motor Company also occupy sites in Trafford Park, quite an electrical center is springing up there. To provide houses for the workmen has also had the careful consideration of the authorities, and a large village has already sprung up, composed of complete little cottages of four or five rooms each, each house being lighted by electricity and the streets being also illuminated by current from the Trafford Park Power Company. Taken altogether, in the course of another year the site of Trafford Park will become one of great interest to electrical engineers in general. It is of interest also to note that the Lord Mayor of London, accompanied by other dignitaries, is soon to visit Trafford Park, and will on that occasion lay the cornerstone of the works of the British Westinghouse Company.

Maskell E. Curwen, London manager of the J. G. Brill Company, has just been awarded a contract for the rolling stock of the Kalgoorlie Electric Tramways in Western Australia. The contract comprises single-deck closed car bodies, mounted on Brill solid forged frame No. 21-E. trucks, and several very long closed car bodies, mounted on Brill high-speed No. 27 trucks.

While the London United Electric Tramway Company has been busy in the western suburbs of London the East Ham authorities have inaugurated the first municipal electric tramway within the area of Greater London. Though this system is yet quite a small one, it has one feature of importance, and that is the fact that everything is of British manufacture. The dynamos are made by the English Electric Manufacturing Company, of Preston, and the cars have been made by the Electric Railway & Tramway Carriage Works, of Preston, all being supplied by Dick, Kerr & Company, of London. The engines have been built by Musgrave & Sons, of Bolton, and the boilers by the Babcock & Wilcox Company, of London. The cars are equipped with the Bellamy reversed staircase, which presents a handsome appearance, and great care has also been exercised as to the selection of the poles for the carrying of the overhead trolley wires, which have also been designed to carry arc lamps for the illumination of the streets.

The central station for the South Lancashire Tramways is to be built at Atherton, which will furnish current for the whole system, aggregating 133 miles. When completed the system will form a network of electric tramways connecting with Wigan, Manchester, Liverpool, Bolton, Warrington, etc., and Atherton will be very central. The construction will be carried out by the British Insulated Wire Company, of Preston.

The Glasgow Corporation Tramways Committee has now submitted its annual report, and the following figures may be found interesting:

The result of the year's working shows that the revenue amounted to £489,469 8s. 7d., and the working expenses to £371,705 7s. 1d., thus leaving a gross balance of £117,764 1s. 6d. The revenue of the previous year was £469,965 10s. 11d.; and the working expenses £344,721 11s. 3d., leaving a gross balance of £125,243 19s. 8d. This year's gross balance has been applied as follows: Rent of Govan and Ibrox tramways, £5,057 14s. 7d.; interest on capital, £38,979; sinking fund, £19,470 13s. 4d.; depreciation written off capital, £29,758 16s. 7d.; and payment to common good, £12,500; a total of £105,766 4s. 6d., leaving a net balance of £11,997 17s., which has been transferred to the general reserve fund. From this statement it will be seen that the gross balance for the past year is £7,479 18s. 2d. less than for the preceding year, although the revenue shows an increase of £19,503 17s. 8d. This reduced balance is chiefly brought about through the increased price of provender throughout the whole year, and the increased sum which has been paid in local and imperial taxes. The net balance shows a decrease of £34,570 15s., as compared with last year. This is due to the increased interest and sinking fund on the large amount borrowed for the conversion of the system from horse to electric traction, and which was, until within the last few weeks of the financial year, entirely unproductive. The traffic receipts from horse traction were £404,614 13s. 3d., and other receipts £4,462 10s. 1d.—a total of £409,077 3s. 4d.; the traffic receipts from electric traction were £80,258 4s. 7d., and other receipts £134 0s. 8d.—a total of £30,392 5s. 3d.; making the whole revenue from traffic receipts £484,872 17s. 10d., and from other receipts £4,596 10s. 9d.—a grand total of £489,469 8s. 7d. The working expenses were: Horse traction, £335,282 2s. 8d.; and electric traction, £36,423 4s. 5d.—total, £371,705 7s. 1d., leaving, as already stated, a balance of £117,764 1s. 6d. The amount of the capital account on June 1, 1900, as reduced by depreciation, was £937,033 5s. 9d. The additional capital expenditure during the year to May 31, 1901, amounting in all to £886,659 18s. 11d., was principally in connection with the conversion of the system from horse to electric traction, and for the construction of additional lines. This expenditure has been added to capital account, and the sum of £29,758 16s. 7d. has been deducted, being the amount of depreciation written off for the year. The gross capital expenditure to May 31, 1901, has been £1,947,730 19s. 9d., from which the total amount of depreciation written off since 1894 has been £153,796 11s. 8d., leaving the capital account as at May 31, 1901, at £1,793,934 8s. 1d. The total amount borrowed for capital purposes is now £1,680,732 0s. 1d., of which £846,000 has been borrowed during the past year.

There are in all open for traffic 44½ miles and 9,847,545 car miles have been run, and 132,557,724 passengers have been carried. The percentage of working expenses to gross receipts is 82.05 for horse traction; 45.29, electric traction, with a total of 276.02. The average traffic revenue per car mile is 11.39d. for horse, 14.60d. for electric, and 11.82d. total. The average working expenses per

car mile is 9.44d. for horse, 6.62d. for electric, 9.07d. for total. In the same way, respectively, the average fares per passenger, .88d., .87d., .89d., and the average number of passengers per car mile is 12.96, 16.72 and total 13.46. The above figures speak louder than words in favor of electric traction, and by this time next year, when the whole city is operated electrically, the figures should be most interesting and instructive.

The Park Road, Glodwick Road and Lees Road sections of the Corporation tramways undertaking at Oldham have been formally declared open. These lines are part of a scheme for the construction of 25 miles of electric tramways within the borough, and the portions now opened are some $2\frac{3}{4}$ miles in length. The energy for working the lines is supplied from the electric power station in Gas Street, though the erection of a new power generating station at Greenhill will shortly be commenced. For the present three cars supplied by Dick, Kerr & Company, of London, will deal with the traffic on these routes, and the two "single deckers" carry thirty-eight and twenty-eight passengers, and the "double deckers" carry fifty-eight. The electrical equipment of the line has been erected by W. T. Glover & Company, of Manchester.

A select committee of the House of Commons yesterday passed the preamble of a bill promoted by the City of Birmingham Tramways Company, containing provisions which evoked considerable opposition from the suburban local authorities. Complications have, however, arisen, as within the municipal boundaries the Corporation declined to allow the promoters to make the lines, and elected to make them itself, granting leases to companies to work them, and the District Councils who control the lines in the outlying districts have also to be dealt with. Recently there has been a general disposition to favor municipal working of tramways, and the Birmingham Corporation having intimated its intention not to renew the existing leases when they run out, the District Councils have followed suit by announcing that they will purchase the lengths of tramway in their districts at the date prescribed by law. It appears, however, that this opportunity occurs in certain instances some years earlier than the expiration of the Birmingham leases. It might thus happen that the City of Birmingham Tramways Company, though holding a lease of the portion of a route inside the city, would be unable to get its cars beyond the boundary, because the line at that point had been bought by a local authority, who wished to work it themselves. The company, therefore, in their bill asked that, under such circumstances, the outside authorities should grant them running powers, on terms to be settled by the Board of Trade, for such times as their leases from the Corporation of Birmingham remained in force. Though this was opposed by the local authorities, it is, however, evident that through services are essential to the convenience of the traveling public, both as regards time and fares, and it is a matter for satisfaction that the discussion before the Parliament committee has led to a way out of the difficulty. This takes the form of an agreement that the outside authorities, when they purchase, shall grant leases coterminous with those at present existing inside the city. In this way the District Councils will receive a return in the way of rent, and the convenience of the public will not be interfered with.

Sir Charles Rivers Wilson, at a recent meeting of the British Electric Traction Company, of which he is chairman, after reviewing the prosperous financial position of the company, said that 45 miles of new tramways had been opened since the interim report was presented last November, the capital outlay on which was £128,000, which was unproductive in this year's balance sheet. The engineering works carried out since the last meeting amounted to 60 miles of new electric tramways. They had also obtained acts of Parliament and orders which had been confirmed for South Staffordshire 7 miles, Morley and district $8\frac{3}{4}$ miles, Spen Valley Light Railway 19 miles, Worcester district $4\frac{3}{4}$ miles, and others, covering a mileage of 80 miles, which would be proceeded with as soon as circumstances would allow. Besides these there were light railways for Kidderminster, the Potteries and Wigan, making a total of 26 miles or 27 miles. Altogether there were now in active operation 238 miles of trams, of which 118 were electric, 56 steam and 64 horse, many of the latter being in course of conversion to electricity, and this did not include 75 miles covered with omnibuses. Last year they took in penny and two-penny fares £600,000, as against £400,000 for the preceding year, and carried over 100,000,000 passengers.

The Swansea electric tram service has now completed its first year's working, and the returns show that no less than 4,500,000 passengers have been carried, or an increase on the horse traffic of from 60 per cent to 70 per cent.

The select committee of the House of Lords, presided over by Lord Welby, recently passed the preamble of the Shannon water and electric power bill. The measure, which is an important one in its bearing on the industries of the West of Ireland, proposes

to incorporate a company with a capital of £360,000 and £180,000 borrowing powers, and empower them to carry out a scheme to utilize the waters of the River Shannon for the purpose of generating electricity, and to supply energy for lighting and power purposes over an area of 30 miles radius from the power station to be situated $4\frac{1}{2}$ miles from Limerick. The works to be constructed under the bill consist of a short canal to carry the waters of the Shannon to the generating station to be erected at Cloonlara, where a fall of 40 ft. is obtained.

The British Electric Traction Company has completed its line from Lower High Street, Stourbridge, to a point in the Hagley Road, and recently it successfully underwent inspection by Colonel Yorke, R. E., of the Board of Trade. The line is one which has occasioned much discussion, as the policy of allowing it to pass through the main street of the town (parts of which are narrow) has in some quarters failed to meet with approval. After the Board of Trade issues its certificate the cars will be put in immediate service.

J. H. Cawthra has resigned his position as borough engineer of the Swansea Corporation, and has accepted a similar position with the Corporation of South Shields.

In view of the statements that have appeared in the daily press and elsewhere in regard to the relations of the British Thomson-Houston Company and the General Electric Company, and in answer to numerous inquiries in regard to the same, the former company informs us that the facts as reported are substantially correct. As is well known, the British Thomson-Houston Company owns the patent rights for Great Britain of the General Electric Company, the Thomson-Houston and other companies, and, while the General Electric Company has always been interested to a certain extent in the British Thomson-Houston Company, it has now increased that interest and purchased British Thomson-Houston stock formerly held on the Continent. This does not affect the holdings in Great Britain, and, in fact, the purchase meets with the approval of the British shareholders. The works, now being built at Rugby, will be pushed to completion, so that the manufacture of apparatus for the English market and export will be commenced as soon as possible.

The board of the British Thomson-Houston Company will be joined by C. A. Coffin, president; Gen. Eugene Griffin, first vice-president of the General Electric Company, of New York, thus giving the General Electric Company, of New York, three directors out of a total of thirteen, W. J. Clark, the manager of the foreign department of the General Electric Company, already being a member. E. A. Lazarus is chairman of the board of directors, and recently Gen. Griffin has been appointed vice-chairman, and W. J. Clark is now managing director of the British Thomson-Houston Company.

Almost immediately after the opening of the Glasgow Tramways the local newspapers and many of the London technical papers appeared to take a huge delight in recording the fact that the Allis engines in the Pinkston power house would not start work. On investigation, it turned out to be quite true, that the main bearings of these engines had heated and had to be renewed, and that accordingly there had been a few weeks' delay. The Allis engineers claimed that the engines had been put into actual service too soon and without any of the usual trials and gradual increase of load. It is gratifying now, however, to find from a recent report by the consulting engineer that all these troubles have been got over, and that the engines are now doing regular and good work. The Musgrave engines are also now in service, and, while they also heated somewhat on the start, they are now doing good work also. In the meantime the report goes on to say that the Stewart engines, which have been in constant service from the first, though not under full load, are to undergo certain alterations, as their governing properties have not satisfied the engineers. The coal handling devices have been tested and found satisfactory,

A. C. S.

Seventh General Meeting of the Verein Deutscher Strassen-und Kleinbahn Verwaltungen

It has been decided to hold the 1901 convention of the above society at Stuttgart, between Sept. 5 and 7. The following papers will be read:

1. Report on Brakes, by Director Fromme and Engineer Poetz.
2. Safety Devices Used on Electric Roads to Guard Against Running Down of Passengers, by Engineer Poetz.
3. Accidents During the Year 1900, by Secretary Vellguth.
4. Remarks on the New System of Statistics, by Secretary Vellguth.
5. Discussion of the Legal Status of Electric Railways, with

particular reference to the discussion on the same subject at the recent meeting of city authorities. The private ownership will be taken up by Director Kolle, and some one still to be selected will defend Municipal Ownership.

6. The Saving Effected by Using Electric Power on Street Railways, by Chief Engineer K. Sieber.

Meeting of the International Tramway Association

At a recent meeting of the Tramways and Light Railways Association of Great Britain some announcements were made as to the 1902 meeting of the International Tramways Association, which is to be held in London July 1-4. The list of questions to be sent to all members of the association were presented, and are given below. It was announced that Granville C. Cunningham, general manager of the Central London Railway, has undertaken to edit the replies received to Question XI., and to be responsible for a report on this question, summarizing the information given in the different replies.

The list of questions as proposed by the association includes two classes.

The questions of the first class are those which have now been placed on the programme, and for which gentlemen will be appointed to present papers.

The second class includes questions concerning facts which form useful information to members of the association, but which, being rather of a documentary nature, do not admit of discussion, and ought not, as such, to form the subject of papers to be submitted to the general meeting.

The replies which will be made to these questions will be communicated to members of the association at the same time as the others.

A summary of the replies to each of these documentary questions will be prepared under the care of a member of the association and distributed at the same time as the reports.

It should be understood, however, that if time permits, certain of these questions may form the subject of a paper during the last meeting of the assembly.

QUESTIONS OF THE FIRST CLASS

I.—Transfers.

Under what conditions do you consider that the use of transfers is useful or desirable?

What is the system of transfer tickets that you employ?

Kindly send a specimen of your tickets.

In what manner does this system insure the supervision of the transfer service?

What are the advantages and disadvantages which you have experienced?

II.—Gages of Track

What are the advantages and disadvantages of a narrow gage and the standard gage for suburban tracks?

III.

What rating should be adopted for motors and generators, taking into account the different elements of output, speed, torque, heating, etc.?

IV.—Brakes

Describe the systems you employ:

- (a) For electric traction;
- (b) For steam traction, compressed air, etc.

Also:

- (a) When motor cars are used alone?
- (b) When trailers are used?

State if the brakes of the trail cars are worked by the conductor of the motor car or locomotive.

Where you have several brakes on the same car, which is employed on ordinary occasions?

State if you have employed the systems of your own initiative, or if they have been required by the authorities.

Give the advantages and disadvantages which you have experienced of the systems which you employ.

What instructions are given to employees as regards the working of the brakes?

V.—Payments for Franchises

Give the principle on which payment to be made to the authorities for tramway franchises.

N. B.—The different systems of payment most generally in use are the following:

- A percentage or progressive payment on the gross receipts.
- A percentage or progressive payment on the earnings from operation.
- A percentage or progressive payment on the net profits.
- Payment per car in service.
- Payment per track-kilometer.
- Payment per passenger.
- Payment per ticket sold, etc.

VI.

What obligations are imposed on tramway companies in regard to the streets on which their lines are located?

VII.

How do you consider the car houses ought to be arranged with regard to the track location?

Should the cars be concentrated in a limited number of houses, or distributed among a greater number?

Discuss the question from the standpoint of rolling stock, of utilization and inspection of the staff, and of the lost transportation made by the cars at the beginning and end of the day.

How far have you been able to carry out your ideas, that is to say, how are your houses located, and what are the advantages and disadvantages of your present arrangement?

VIII.—Systems of Traction

Have you any systems other than the overhead trolley?

Give full particulars as to length of the line, time of operation, reasons for adoption and cost.

- (a) Per kilometer of single track;
- (b) Per car in service.

Give the price of rolling stock (price per car with the number and size of the motors, and number of seats and amount of standing room).

Give the operating expenses:

- (a) Consumption of current per car-kilometer, compared with the corresponding consumption in the overhead trolley system;
- (b) Cost of maintenance of the conduit and its accessories per kilometer of track;
- (c) Cost of maintenance of rolling stock per car-kilometer;
- (d) All other expenses of working per car-kilometer.

QUESTIONS OF THE SECOND CLASS

IX.—Utilization of Material

What is the ratio between the number of passengers carried and that of the seats available on your different lines?

- (1) Per annum?
- (2) Per day; also for the different hours of the day?

Do you consider that a reduction of fares would sensibly increase this ratio?

If so, give the maximum value of the ratio which appears to you permissible with good service, satisfactory alike to the interests of the tramway owners and of the public.

Is there any advantage in employing, in city systems, cars of different sizes to meet variations of traffic?

X.—Central Stations

Give technical information concerning the maintenance, the consumption and output of the boilers, steam engines, gas engines, dynamos and accumulators at your generating station, and of any special apparatus you employ.

A detailed list of questions fixing the conditions under which the consumption and output should be given will be sent later, in order to obtain uniformity in the answers and permit of comparisons.

XI.

Give the information you possess on the subject of the installation, construction, method of working (steam, electric or cable traction) of underground railways for the interior service of large cities; also the data from your experience on the subject of organization and working of these railways, and the results which this method of operation has given.

XII.

Point out the improvements in car heaters.

XIII.

Give cost of electric energy applied to the tramway traction, as measured at the switchboard of the central station, with the employment of:

- (1) Steam;
- (2) Producer gas;
- (3) Water power.

A.—Is the current produced used exclusively for traction, or also for lighting or running stationary motors? What is the output in kilowatt-hours, and, where the question applies, what proportion of the current produced is used for traction, lighting or stationary motors? What is your daily maximum and minimum output?

N. B.—Where compressors, pumps, ventilators, etc., are run by electric motors, this part of the energy may be an important fraction of the output of the station.

B.—Give the cost of first installation of your central station and of its dependencies, including all building and equipments for production of the motive power and current up to the switchboard of the central station:

1. For Stations Using Steam—Land, all buildings, boilers with accessories, condensers, pumps, cooling apparatus, piping, etc.; engines, dynamos, storage batteries, and all appliances generally up to and including the main switchboard, but not including the feeders conducting the current outside the station.

2. For Stations Using Producer Gas—Land and all buildings, gas producers, purifiers and accessories, piping to the engines, engines, storage batteries, etc., etc., as above, whether serving for the production of gas or for the production of energy.

3. For Stations Driven by Water Power—Cost of purchase of waterfall, land and all buildings with dependencies, including total installation for the collection and disposal of the water, both up stream and down stream, water-wheels or turbines, pipes, dynamos, accumulators, etc., as above, up to and including the main switchboard of the station.

Note—If your station rents power from outside parties, give total cost and cost per unit (k. w. h.).

C.—Give the cost of operation per kilowatt-hour, analyzing it under the following principal sub-divisions:

1. Salaries and wages of the manager, employees and staff of the station and its dependencies, that is to say concerned with the production of the motive and electric power as defined above.

Note—For those holding other offices outside the employ of the station, kindly state what percentage of their services is chargeable to the station.

2. Cost of consumption in fuel, oil, water, and everything else used in the production of the motive power and electric energy.

3. Cost of maintenance and repairs:

- (a) Of buildings and complete installation of the station and its dependencies;
- (b) Of the motive power installation, such as boilers and accessories, gas producers and accessories, turbines, water-wheels, dams, etc.;
- (c) Of engines, dynamos, etc., with accessories;
- (d) Of storage batteries. If the maintenance of the battery is covered by a payment agreed upon, give the amount of this payment per hundred ampere-hours at 500 volts.

Note.—Give the sum reserved annually for repairs and depreciation of the objects named in a, b, c, d.

4. Rents, general charges and payments.

5. Miscellaneous expenses. These expenses include all cost of operation, maintenance, repairs, etc., not classed in the preceding subdivisions, in order to arrive at the total expense forming the cost of electric energy as defined in the present question.

XIV.

Do you carry baggage, goods or letters on your cars?

Give the charges made, and describe the manner in which the system is carried out.

XV.

Do you employ any apparatus for registering fares collected, or tickets sold?

If so, describe the working of this apparatus, pointing out how supervision is effected over receipts.

SYSTEM OF ACCOUNTS

The Council having decided to complete, especially from the point of view of electric traction, the general system of accounts established in 1888, has entrusted Leon Janssen and H. Geron to carry out in detail a scheme which will be submitted for the approval of the General Assembly in 1902.

All members are especially requested to forward their answers to M. Nonnenberg, general secretary, 85, rue Potagère, Brussels.

Uninsulated Returns in a Tramway System*

BY JOHN H. RIDER

Chief Electrical Engineer, London County Council Tramways

The general regulations prescribed by the Board of Trade, under the provisions of the tramways acts, include, among others, clauses which relate to the employment of uninsulated metallic return circuits of low resistance. Such returns, in the shape of the tramway rails, are up to the present in universal use in this country, and consequently the clauses mentioned are of universal application.

It is provided that the uninsulated return shall be connected with the negative terminal of the generator, and that all parts of the return circuit which do not consist of the rails shall be insulated, unless of such cross-sectional area as will reduce the difference of potential between the ends of the uninsulated return below 7 volts. This is also the maximum pressure allowed between the ends of the uninsulated return furthest from the generating station.

Excepting perhaps that the maximum allowed is too high, no fault can be found with these requirements, as unless the differences of potential be kept low, excessive earth currents will flow, causing considerable damage to any metal pipes in the vicinity. The earth, being more or less a conductor, practically connects all buried metal near the track to the rails. Unless great care be taken, therefore, the return current leaks out from the rails and flows through any other metal which may be lying in the neighborhood of the track. Being no respecter of paths, it has been even known to make use of the lead sheathing of the tramway feeders.

The mere passage of the current through these irregular paths does no harm, but at all points where the current leaves the rails or the pipes or the sheathing, corrosion takes place by reason of electrolytic action. The number of places at which the current flows into or out of the rails or pipes is entirely a question of relative resistances (or of conductivities) between the various paths open to the current, and at each place of leaving corrosion goes on. The only way to prevent leakage currents is to make the proper path of so low a resistance that the difference of potential between any two points is at all times exceedingly small. The requirements of the Board of Trade in this particular are most reasonable, and the engineer who thoroughly appreciates the position will endeavor to bring the maximum below this amount for other reasons than to comply with the regulations.

In the opinion of the writer, however, some of the other regulations are not only unnecessary, but even undesirable, as for instance those relating to the earthing of the negative bus-bar. Regulation No. 5 says: "When any part of a return is uninsulated it shall be connected with the negative terminal of the

generator, and in such case the negative terminal of the generator shall also be directly connected, through the current indicator hereinafter mentioned, to two separate earth connections which shall be placed not less than 20 yds. apart. Provided that in place of two such earth connections the corporation (or company) may make one connection to a main for water supply of not less than 3 ins. internal diameter, etc., etc." Regulation No. 6 says: "When the return is partly or entirely uninsulated, the corporation (or company) shall, in the construction and maintenance of the tramway, (a) so separate the uninsulated return from the general mass of earth and from any pipe in the vicinity; (b) so connect together the several lengths of the rails; (c) adopt such means for reducing the difference produced by the current between the potential of the uninsulated return at any one point, and the potential of the uninsulated return at any other point; and (d) so maintain the efficiency of the earth connections specified in the preceding regulation (No. 5) as to fulfil the following conditions, viz.: (1) That the current passing from the earth connections through the indicator to the generator shall not at any time exceed either 2 amps. per mile of single tramway line, or 5 per cent of the total current output of the station. (2) That if at any time and at any place a test be made by connecting a galvanometer or other current indicator to the uninsulated return and to any pipe in the vicinity, it shall always be possible to reverse the direction of any current indicated by interposing a battery of three Leclanché cells connected in series if the direction of the current is from the return to the pipe, or by interposing one Leclanché cell if the direction of the current is from the pipe to the return.

"In order to provide a continuous indication that the condition (1) is complied with, the corporation (or company) shall place in a conspicuous position a suitable, properly-connected, and correctly marked current indicator, and shall keep it connected during the whole time the line is charged."

Condition (2) is, of course, merely intended to show that the earth connection is maintained in good order.

It will be observed that the current coming back from the rails, via the earth, to the negative bus-bar, must not exceed a certain value. The strength of this earth current will depend entirely upon two things—(1) the difference of potential between the rails and the negative bus-bar; and (2) the resistance of the earth path. The former is the fall of pressure on the return feeder, which, although it may be only a small amount, from the point of view of economy in transmission, may be enough to send a large current back through the earth, particularly if the resistance of the earth path be low. This may readily happen on account of the existence of water or gas pipes near the return feeder, and particularly when a water pipe is used as the earth plate at the generating station.

In case of the Plymouth electric tramways, where the shortest return feeder is 760 yds. long, being connected to the rails at their nearest point to the generating station, the resistance between the rails and the earth plate (water pipe) is only about 0.5 ohm. It was found that 25 per cent of the return current came back through the earth.

Now, the resistance of the earth path can be made practically infinite by the simple expedient of removing the earth connection from the negative bus-bar.

Regulation No. 6 (1) is apparently intended to protect gas and water pipes, by insuring that no current (or only a very small amount) shall come back through the earth to the generators. Regulation No. 5 practically invites such current, and provides means for its measurement. If the earth connection be removed from the negative bus-bar, no current can come back through the earth. Why then should the connection be made?

The Board of Trade regulations appear to provide for an earth connection at the wrong place. When the return circuit of a tramway system consists partly of uninsulated rails and partly of insulated cables, the insulated part should be kept insulated except at the point where it joins the uninsulated part, and there the earth connection should be made rather than at the other end, where it is joined to the negative bus-bar.

With more than one return feeder, negative boosters may be necessary, to keep the points of earth connection at the rails at about the same potential. Earth currents would then be practically non-existent. With only one return feeder no negative booster would be needed, unless it were desired to reduce the fall of pressure for economical reasons. In this case it would depend entirely upon the length of the return feeder, as to whether it would be better to add to its cross section, or to use a negative booster. In the majority of cases the latter would probably prove the better way.

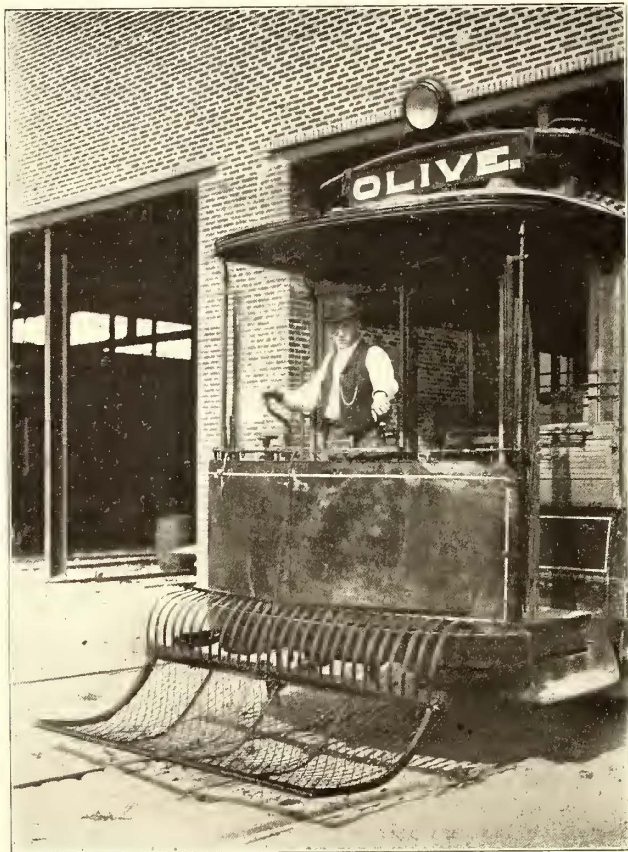
If the ventilation of this subject by the Incorporated Municipal Electrical Association should result in a modification of the Board of Trade regulations, then this short paper will not have been written in vain.

* Paper read before the Incorporated Municipal Electrical Association of Great Britain, at Glasgow, June 19-22, 1901.

New Fender in St. Louis

Experiments were made last week by officials of the St. Louis Transit Company with a street-car fender invented by Charles Hofmeister, of St. Louis.

The fender weighs 100 lbs. and is constructed of steel bars and wire netting. It is operated by the motorman's foot and seems capable of lifting a man, woman or child uninjured off the track, no matter how fast the car is run.



NEW TYPE OF FENDER

The fender was placed on an Olive Street car and given an exhaustive trial on a dummy man made of sand and sawdust and dressed in overalls and a jumper. The dummy weighed 200 lbs., a dead weight, said to equal in obstructing power a man weighing 350 lbs. Running at 10 miles an hour the car struck the dummy and the new fender picked it up time after time. In no instance was the dummy knocked from the tracks or rolled under the wheels. It was struck while standing up, lying down or when placed on hands and knees. After each trial the dummy was found lying in the curved wire netting of the fender.

The fender stands 9 ins. from the ground while the car is running. When the motorman sees a person on the track he will touch a spring placed on the bottom of the front platform; immediately the fender falls till it touches the track. In this position three curved steel bars sustain its weight and the same spring that formerly supported it 9 ins. above the track holds it level with the rails.

It is asserted by the inventor that a man lying on the track will be raised from his feet by the front end of the fender and thrown against the curved steel bars at the top of the fender; that these bars will give to his weight and break the force of the blow, the man falling in the basket of the fender unhurt.

New Automobile Route in New York

The Mobile Company of America has put in operation a line of rapid transit wagonettes, running from Wall Street ferry and Hanover Square through Wall Street and Rector Street to the terminal of the New Jersey Central Railroad at Liberty Street, and that of the Pennsylvania Railroad at Cortlandt Street. This is the first regular line, so far as is known, to be operated by steam wagonettes. The wagonettes will seat fourteen people each, and cost \$1,600 each.

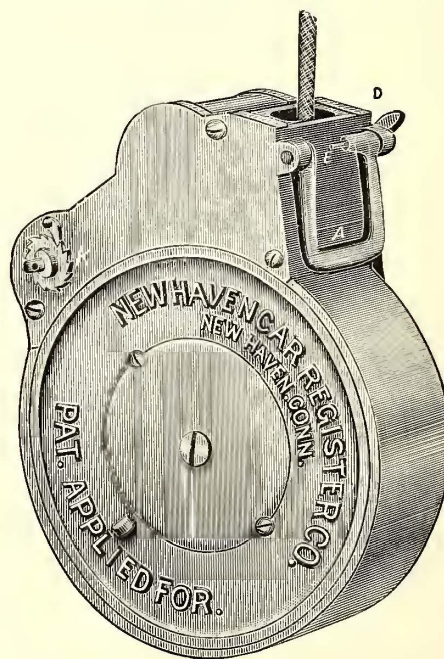
How Successful Railway Men Began Their Careers

An examination of the *Railway Age's* "Biographical Directory of Railroad Officials," with especial reference to the course through which the officers named therein have attained their present positions, reveals the fact that the operating department appears to present the greatest number of successful careers. There are approximately 5000 names mentioned in the directory. Under a classification which includes in the operating department telegraph operators, clerks, brakemen, and shop men, there appear to be over 1700, or over one-fourth of the whole, who have entered the service in the department, and by far the largest portion of these, or over 600, began as telegraph operators. There are also now filling places at the heads of their department 166 who began as brakeman, and 62 who were originally firemen; about 400 who began as mechanics in the shops, and over 200 who were laborers. The general office and accounting department furnished about 1100, the engineering department 900, and the various clerical and subordinate positions in the traffic department about 850.—

A New Trolley Catcher

The accompanying illustration shows the general appearance of a new form of trolley catcher recently perfected by the New Haven Car Register Company, New Haven, Conn. The company has been experimenting on this device for some time, and the several new features which it contains are the result of much thought and labor. It is constructed on simple and durable lines, the principles embodied being strictly up to date mechanically, and it is believed by the manufacturers that its design will immediately recommend it to street railway managers and superintendents, as well as making it popular with the conductors.

The importance of an efficient trolley catcher is recognized by all traction men, but the requirements are so great that much



A NEW TROLLEY CATCHER

difficulty is experienced in producing a perfect design. Those of the type illustrated are constructed with an adjustable tension, so as to readily adapt themselves to any of the various styles of trolley poles and springs now in use. They are also arranged to lock firmly on the car in such a way that it is impossible for them to work loose, and thereby become a menace to life and property, as has sometimes been the experience, and they are unlocked automatically as the handle is raised in removing them from the dasher.

The rapidity with which these machines catch the trolley pole as it leaves the wire is a marked feature of the device. All practical railway men will at once appreciate its value, as this quick action prevents damage either to the overhead material or the trolley wheel, pole or car. These catchers are expected to meet with the same success that the well-known fare registers made by the same company have merited, the reputation for reliability which is held by its manufacturers being sufficient guarantee of the advisability of giving it a trial.

An Effort to Secure Long Distance Traffic

It is announced that before the first of the year the Everett-Moore syndicate will undertake the experiment of competing with the through trunk lines for long-distance passenger traffic. Every means possible is being used to push the construction work on the three short links necessary to complete a through line from Cleveland to Detroit, and as soon as this is accomplished, fast through cars will be operated between the two cities. Much work is being done to improve the roadbed of the Toledo, Fremont & Norwalk Railway, so that fast work may be possible, while the lines completed and being built by the syndicate are well adapted for fast work. It is stated that from the start a seven-hour schedule between the two cities can be arranged, and it is believed this can be cut down to six hours as soon as everything is in perfect running order. If this is done it will make the steam roads look to their laurels, as some of the trains on the Lake Shore & Michigan Southern Railroad have a schedule of five and one-half hours, and others of six and one-half hours. It is stated that the rate of fare will be placed at about \$1.60, or on a basis of 1 cent per mile, which is less than one-half the cheapest rate ever made by the steam roads. It has not been decided as to whether single cars or two cars will be run on the through trains, but Mr. Everett states that they will be special cars, larger than those at present used, and especially fitted for long-distance travel.

After the through line is an accomplished fact, efforts will be made to solve the problem of rapid transit within the city limits of Cleveland, Toledo and Detroit. If this can be secured, the officials have no doubt as to their ability to compete in every respect with the steam roads, and make through electric travel extremely popular with the traveling public. Such schemes as elevated roads or underground roads are branded as ridiculous, but efforts will be made to secure private rights of way into the centers of these cities, even if it is necessary to take circuitous routes.

Mr. Everett again denies that the syndicate is seeking entrance to Pittsburgh. It is stated that the aim of the syndicate is to control the situation along the shores of Lake Erie, and there is no intention to deviate far from this line.

Street Railway Patents

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

UNITED STATES PATENTS ISSUED JULY 23, 1901.

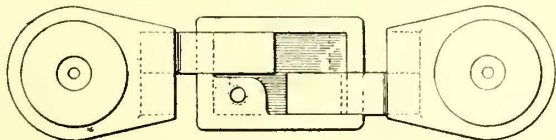
678,880. Conduit Plow; J. Hoffman, Schenectady, N. Y. App. filed March 12, 1900. The shank of the plow is composed of two metal plates stamped with off-sets to form, when assembled, a housing for the conductor.

678,894. Trolley Signal; C. H. Morse, Cambridge, Mass. App. filed August 11, 1900. The signals are set and locked by mechanical devices, and circuits operated by the trolley pole.

678,950. Fare Register and Recorder; W. J. Fordney, Lancaster, Pa. App. filed March 6, 1899. Details of a device for preventing dishonest practices of conductors.

678,974. Car Fender; R. F. Preusser, Washington, D. C. App. filed March 28, 1901. Details of a projecting and folding fender.

678,975. Car Fender; R. F. Preusser, Washington, D. C. App. filed May 10, 1901. Modification of the preceding patent.



PATENT NO. 679,002

678,987. Portable Connecting Track; H. C. Stiff, Johnstown, Pa. App. filed Nov. 27, 1900. The invention consists in the construction of tie clamps, which prevent both lateral and longitudinal displacement of portable connected rails.

678,988. Railway Crossing Structure; H. C. Stiff, Johnstown, Pa. App. filed Nov. 27, 1900. An arrangement of braces and bolts for firmly securing together the various parts of the structure without multiplication of the fastenings.

678,989. Controller for Electric Motors; E. W. Stull, Johnstown, Pa. App. filed Sept. 26, 1900. Means whereby the handle of the regulating switch can not be moved unless the reversing switch is placed at its off position.

679,002. Rail-Bond; A. Markle, Hazleton, Pa. App. filed Jan. 19, 1901. A rail-bond consisting of two conductors with their ends passing into a box, and therein electrically connected by plastic material.

679,080. Car Platform Closure; W. M. King, Sr., Alexandria, Va. App. filed May 4, 1901. A cover for the space above the steps is thrown into position when the door into the car is moved.

679,081. Car Seat; F. C. Koehler, St. Louis, Mo. App. filed April 15, 1901. Details of construction of a "walk-over" seat.

679,150. Brake for Cars; T. B. Hyland, Pittsburgh, Pa. App. filed May 6, 1901. The brake is operated by rotating a screw-shaft to move a nut thereon connected with the brake rigging.

679,220. Trolley; N. Durant, North Adams, Mass. App. filed August 18, 1900. The wheel is carried in a frame pivoted to the trolley arm at a point to the rear of the wheel and spring supported thereon, the object being to prevent the wheel from leaving the wire.

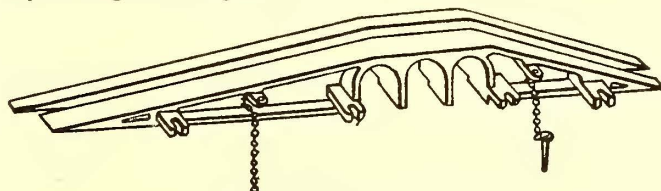
UNITED STATES PATENTS ISSUED JULY 30, 1901.

679,314. Electric Railway; E. M. Hewlett, Schenectady, N. Y. App. filed October 19, 1897. The resistance is cut into circuit with the switch magnet so that the potential to which the switch coil is subjected is a maximum while the switch is closing, and is so much in excess of the counter e. m. f. of the coil that the switch closes instantly.

679,331. Electric Railway System; W. B. Potter, Schenectady, N. Y. App. filed Feb. 28, 1901. The aim of the invention is to provide a system having section switches which are sure to open and close when required.

679,362. Electric Brake; F. E. Case, Schenectady, N. Y. App. filed July 17, 1897. An electric brake in which when a brake-shoe sticks a reverse current can be sent through the same to demagnetize and release it.

679,492. Trolley for Electric Cars; J. H. Beckert, St. Louis, Mo. App. filed Sept. 28, 1900. The trolley arm is forced upward only so long as it is against the wire.



PATENT NO. 679,570

679,570. Hose Bridge; F. R. McClurg, Pittsburgh, Pa. App. filed April 13, 1901. Means for preventing a hose bridge from moving along the track rail.

679,582. Railway Switch Operating Apparatus; W. D. Wood, West Haven, Conn. App. filed Aug. 8, 1900. An arrangement of levers in the roadbed actuated by a projection from the car.

679,586. Street Car Fender; G. Wray, Pittsburgh, Pa. App. filed May 31, 1901. The fender is normally held above the roadbed by cords which can be disengaged to allow it to drop.

679,615. Underground Electric Conductor for Street Railways; J. Floyd, Philadelphia, Pa. App. filed Nov. 21, 1900. A bridging conductor for crossings, to avoid opening the circuit as the car passes.

679,676. Brake for Single Track Railways; L. M. Hosea, Cincinnati, Ohio. App. filed Feb. 21, 1901. A trailing brake adapted to bear upon the single rail immediately back of the wheel.

679,682. Device for Operating Railway Switch Bars; J. S. Love, Edgewood, Pa. App. filed Jan. 27, 1900. Details.

ENGINEERING SOCIETIES

MASTER CAR AND LOCOMOTIVE PAINTERS' ASSOCIATION OF THE UNITED STATES AND CANADA—The thirty-second annual convention of the association will be held at Buffalo, Sept. 10, 11, 12 and 13. Many interesting reports and papers will be read, and a large attendance is expected. A cordial invitation is extended to foremen car and locomotive painters throughout the United States and Canada to be present at the convention and receive the benefit of the discussions on the several topics on the programme.

AMERICAN INSTITUTE OF ELECTRICAL ENGINEERS—The eighteenth annual convention of the institute will be held at the Pan-American Exposition, Aug. 20, 21, 22, 23 and 24. More extensive arrangements than ever before have been made, including the entire trip to Buffalo, and the meeting really commences the middle of the week previous. The preliminary announcement of the programme which has been issued assures to the members and their friends who avail themselves of this opportunity to visit the Exposition in good company a most enjoyable excursion, and the list of papers and authors guarantees the scientific standard of the meetings. Although possible contingencies may arise which will somewhat modify the routine, the following programme will be carried out:

Wednesday, Aug. 14, a general meeting will be held at 12 West Thirty-First Street, New York City, where badges will be distributed and a collation served. Quite a large contingent of foreign guests is expected, and at this session they will be made welcome and given an opportunity to meet the members of the institute. The remaining days of the week will be occupied in the inspection of the railway, lighting and manufacturing plants and telephone exchanges in the vicinity of New York, a dinner being held at the Hotel Marlborough on Thursday evening. Saturday morning the party will leave in a body on board the specially chartered steamboat "Mon-tauk" and proceed up the Hudson River to Albany, where the night will be spent. A visit to the General Electric Company at Schenectady will be given during the morning of Monday and the party will then continue its journey to Buffalo by special train on the New York Central & Hudson River Railroad. The convention will be held during the remainder of the week, as stated above, those topics relating especially to electric railroading being scheduled for Saturday, Aug. 24. Subjects will be introduced at this session by A. H. Armstrong, E. J. Berg and others. The headquarters of the institute while in Buffalo will be at the Niagara Hotel. It is expected that only morning sessions of the convention will be held, the afternoons being utilized as may be arranged by the Buffalo local committee for seeing the Exposition, visiting Niagara Falls, inspecting the Buffalo central stations, etc.

PERSONAL MENTION

MR. C. M. MARSHALL has been appointed superintendent of the Atchison Railway, Light & Power Company, Atchison, Kan.

W. P. PALMER, of Moberly, Mo., for the last twenty-two years assistant claim agent of the Wabash Railway, assumed the position of general claim agent for the St. Louis Transit Company, Aug. 1.

MR. HOWARD S. KNOWLTON, of the engineering staff of the Boston Elevated Railway Company, has resigned from that company to accept a position with Messrs. Stone & Webster, of Boston.

MR. M. J. KINCH, of Holland, Mich., formerly superintendent of the Holland & Lake Michigan Railway Company, has been appointed general superintendent of the Grand Rapids, Holland & Lake Michigan Railway Company. Mr. Kinch assumed his duties Aug. 1.

MR. P. LANE, engineer of the American Bridge Company; the Hon. C. C. Colby, of Stansted, Que.; E. C. Crosby, of Brattleboro, Vt., are interested in the electric railway to be built at Levis. They have been over the proposed routes, with which they are satisfied.

MR. HENRY H. LYNCH, who has been superintendent of construction of the Market Street Railway Company, of San Francisco, Cal., has also been appointed superintendent of repairs and construction of the entire system to succeed Engineer Fairchild, resigned.

MR. L. TRUDEAU, head roadmaster of the Montreal Street Railway, has resigned, to accept the position of superintendent of a system in Bordeaux, France. Mr. Trudeau has been in the employ of the Montreal Street Railway for sixteen years, starting as a conductor.

MR. CHARLES S. THRASHER, of Cleveland, has been appointed auditor of the Southern Ohio Traction Company, with headquarters at Hamilton, succeeding Mr. Warren N. Bicknell, who has become general manager of the Miami & Erie Canal Transportation Company.

MR. O. D. CHASE, of the Chase Construction Company, was accidentally killed at Dayton, Ohio, on July 29. Mr. Chase was riding on a construction engine used in the work of building the Dayton & Northern Traction Company's road, upon which his company is engaged, when it was overturned, killing himself and the engineer. Mr. Chase was thirty years of age and leaves a widow and three children. It is announced that the business will continue.

COLONEL GEORGE B. KERPER has resigned as general manager of the People's Railway Company, of Dayton, to devote his entire attention to the work of the Toledo, Bowling Green & Southern Railway, of which he has recently become chief owner. Mr. Kerper was also formerly general manager of the Mill Creek Valley Railway Company, which is building a road from Cincinnati to Hamilton. He will continue as a director of the People's Railway Company.

MR. D. B. HOLMES, who has been general counsel of the Metropolitan Street Railway Company, of Kansas City, since it was

organized, and who was before that time counsel of the Grand Avenue Railway Company, has resigned in order to give his entire time to his general practice. Mr. Holmes has been succeeded by Mr. Frank Hagerman, who has been associated with him as counsel of the Metropolitan Street Railway Company. Mr. Hagerman will, also, assume absolute control of the claim department of the company, thus separating it entirely from the executive department.

MR. GEORGE H. HOLT, head of the banking house of George H. Holt & Company, of New York, formerly president of the Denver City Railroad, and also identified with other prominent enterprises, is dead. Mr. Holt was born near Worcester, Mass., fifty-nine years ago, and was graduated from Amherst College in the class of 1864. He has been a member of the Stock Exchange since 1876 and was well known in financial circles. Mr. Holt was a member of the Metropolitan, Union League and Country Clubs, of the Downtown Association, the Amherst College Association and the New England Society.

MR. A. FRANK MARS has been appointed general manager of the South Middlesex Street Railway Company, of South Framingham, Mass. Mr. Mars is a practical street railway man, having been connected with several companies in the East. He was appointed superintendent of the Natick & Framingham Street Railway, which is now the South Middlesex Street Railway Company, when the road was constructed about ten years ago, and later accepted a position with a street railway company in Pennsylvania. After a short sojourn there, he returned to Massachusetts and was appointed superintendent of the Milford, Holliston & Framingham Street Railway Company.

MR. WILLIAM E. McCLINTOCK, formerly associate counsel for the Brockton Street Railway Company, of Brockton, Mass., and since that road has come into the hands of the Massachusetts Electric Companies and become a part of what is now the Old Colony Street Railway Company, a district claim agent, has resigned that position after a long period of successful work. Mr. McClintock has had the accident work of nearly 250 miles of road. Besides this he has prepared most of the important cases which have gone to trial, and has been a valuable assistant to Judge Bixby, senior counsel, in the trial of the causes, among which have been some notable ones. During his period of service Mr. McClintock has established an enviable reputation as one of the most successful claim agents and railway attorneys, and much of the credit for the success which his road has had in the settlement and trial of its cases has been due to his keen foresight and careful preparation. Mr. McClintock has not made his plans for the future known. He is prominent in Masonic circles and a member of the Algonquin Club, of Brockton, as well as other business and social organizations in Brockton, and is also a member of the New England Street Railway Club.

MR. F. E. HUNTRESS, of Boston, Mass., who has recently been appointed general Eastern agent of the St. Louis Car Company, has opened a new office at 716 Broad Exchange Building, New York City. In addition to acting as general Eastern



F. E. HUNTRESS.

agent of the St. Louis Car Company, Mr. Huntress will conduct the business of the Neal Electric Headlight Company, and his street railway supply business, with special reference to export orders. Mr. Huntress is one of the best known street railway men in New England, and in addition to establishing a large business, has also been prominent in many other directions. In public affairs he has been a well known figure in Massachusetts, having been chosen to the House of Representatives for three terms and to the State Senate for two terms. He was also a delegate to the National Republican convention at Philadelphia, and the Massachusetts delegate to notify President McKinley of his nomination. At the present time he is serving in the State Senate, of Massachusetts, and is one of the leaders of the Republican party in that State. He is comparatively a young man, only thirty-five years of age, and his business success has been won in quite a short time. He was graduated from Harvard College in 1889, and is a member of the University Club, of Boston; Harvard Club, of New York; Massachusetts Republican Club, and many other local and political organizations.

FINANCIAL INTELLIGENCE

THE MARKETS

The Money Market

WALL STREET, Aug. 7, 1901.

Conditions have not changed materially in the local money market since the date of the last articles in this column a fortnight ago. Call money hangs very easy around 2 per cent, and bankers are conceding $4\frac{1}{2}$ per cent for the distant time maturities, against a stiff 5 per cent rate a month ago. No change of consequence is expected until the crop-moving requirements begin to pull down the resources of the local institutions. The probabilities then are that rates for all classes of loans will advance and remain comparatively high until the first of the year. It is too early, however, to foretell whether or not there will be an actual stringency in the market. The estimates are that between fifty and seventy-five millions will be withdrawn from New York by correspondents in the West and South. To meet this the local bankers hold now \$22,000,000 surplus reserve, which is about the total of a year ago, and well up to the average of the season. If they can count upon the return of capital which has been borrowed during the last few months to finance new security issues, and if the Treasury, under the revised revenue law, ceases its drafts upon this center, the banks will pull through without any undue strain. The constant arrival of new gold from the Klondike, which is immediately transhipped across continent, was an important help last year, and it will be the same this year. These receipts appear in the machinery of exchange as a credit upon the Sub-Treasury. Hence they will tend toward equalizing any debit from the banks to the Treasury which may arise out of the ordinary operations of revenue. Upon the ability of the clearing house members to reduce their enormously expanded loans, however, depends chiefly their ability to maintain the surplus reserve. According to all expert calculation a large quantity of the credits taken out in the various syndicate enterprises should be available during the next few months. But here lies the test of main importance for the immediate future.

The Stock Market

The course of prices on the Stock Exchange during the last fortnight has reflected the generally unsettled condition into which financial sentiment has been thrown by the corn crop damage and the steel strike. The first of these factors has apparently spent its force for the present at least. With the breaking of the great drought in the States of the Missouri and Mississippi Valleys the deterioration of the corn harvest which went on so rapidly during July has been checked. Attention is now centered on the question of how much damage has actually been done. The latest advices say that the early-sown corn is practically ruined, except as it may serve the purpose of fodder. On the other hand, the later sowing has been greatly benefited, and in the great corn States, like Iowa and Nebraska, where total failure was at one time threatened, the expectation is that from one-half to two-thirds of a normal crop will be raised. Everything at the moment hinges upon the regular monthly report of the Agricultural Bureau, due next Saturday, whether or not it will bear out the exceedingly pessimistic view which speculative circles have commonly entertained. The grain trade is figuring on a yield of 1,500,000,000 bushels, which is a third less than an average production, like that of a year ago. To offset this, however, the price of corn is fully 20 cents on the bushel above the average, and it is plausibly reasoned that this advance, together with the higher prices for the phenomenal wheat crop, which are the direct result of the shortage in corn, will be a full compensation to the farmers; in other words, that their profits the present season will be fully up to the normal. Inasmuch as the decline of twenty points or so in the Western railroad shares has been largely based on the belief that the partial failure of the corn harvest will curtail the farmer's purchasing power for other commodities, and that railway traffic will be injured seriously thereby, it is conceivable that the downward movement of the last month may have been excessive. The failure to settle the differences in the steel industry is the more immediate matter of concern in the market now. Yet as this article is written the street has ceased to take the exaggerated view which it held at the beginning of the week regarding the probability of the contest between labor and capital becoming general. The insufficiency of the labor party's resources, the lack of popular sympathy with their cause, and the defections already occurring in their ranks are seen to be logical reasons why the struggle can not long be protracted. So far as the general situation in the market is concerned, there is much ground for the belief that the recent decline in prices has discounted the worst that may happen from the un-

favorable outside causes. Railway earnings and general trade, which are the two main determinants of security values, have never been more flourishing than they are now, and until there is much better reason for anticipating a change in these two respects, the present range of quotations on the Stock Exchange can not be looked upon as high.

The local traction shares have followed along very closely in the track of the general market, and so far as their outlook is concerned it can not easily be disassociated with the general future of speculation and investment. There is nothing of any importance impending in the various properties to indicate that they will move differently from the rest of the share list. The interest which attaches to the recent improvements and changes of power on the Metropolitan is confined to investment holders of the stock, and it is not likely to affect the present price. Brooklyn Rapid Transit's annual report, which is due very soon now, has been pretty thoroughly discounted. The increase in gross and net earnings has been a fair one, but the failure to reduce the operating ratio materially, as was promised a year ago, is not encouraging.

The Curb Market

There has been no market to speak of in the inactive traction specialties on the curb during the last two weeks. Even the St. Louis securities have scarcely been traded in at all. Quotations for these stocks have been made by specialists, who have varied their bids and offers from day to day in arbitrary fashion. The common has fluctuated between 26 and $27\frac{1}{2}$, and the preferred between $79\frac{1}{2}$ and 81. The high figures, it will be noted, are about the maximum for the season. The 4 per cent bonds of the company are idle and unchanged at 89. Other stocks have been changed in their quotations to conform to changes in their local markets, but no open sales are reported. Columbus common, which recently was bid up sharply from 42 to 48, is back now to $45\frac{1}{2}$. The preferred is off a point from the top at 102. Indianapolis Street Railway is lower on the bid price at 34, and Rochester Passenger has dropped two points to 25. North Jersey Traction is a half point lower bid. On the other hand, the bid has been raised on Syracuse common from 20 to 22, on the preferred from 60 to 62, and on New Orleans common from 26 to $27\frac{3}{4}$.

Philadelphia

The various street railway securities in Philadelphia have been little affected by the recent fluctuations in the general market. Union Traction held very steady above 27 until a week ago, when it weakened to its present quotation of $26\frac{1}{2}$. Apparently the short interest took fright at the rumors that the terms had been arranged for the Union Traction to take over the recently granted rapid transit franchises, but on the repeated denials of the story the bear party took courage and marked down the price again. On the other hand, the other local properties in Philadelphia have been distinctly strong. Philadelphia Traction is up from $94\frac{3}{4}$ to 96 on small investment purchases. Electric People's Traction 4s have risen from $95\frac{1}{2}$ to 96. Railways Company General is strong around $2\frac{1}{2}$, and the liquidation in American Railways which followed the reduction in the dividend on Electric Company of America shares has ceased, the price holding around 40. Odd lots of Indianapolis Street Railway sold at 37, and Consolidated, of New Jersey, at 68. The bond market has been generally firm. The principal feature was the sale a week ago of \$51,000 Consolidated of New Jersey 5s at 109, against a transaction at $108\frac{1}{2}$ a few days previously. Indianapolis 4s are in good demand at 81, and Newark Passenger 5s at 118. A few sales are reported in Second Avenue of Pittsburgh 5s at $118\frac{1}{2}$.

Chicago

The most important event that has occurred among the traction stocks of Chicago for some time was the formal announcement during the past week of the purchase of the Union Loop by the Northwestern Elevated. The price paid was \$6,250,000. Although this had been expected for some time, it is the chief reason for the sharp advance in the stocks of the Northwestern company. The common, which sold three weeks ago at 42, has risen to 47, and the preferred shares have gone up during the same period from $90\frac{1}{2}$ to 92. Judging by the remarkable increase in the earnings of the Union Loop during the past year, the acquisition of the property should prove very valuable to the Northwestern. Metropolitan shares have also enjoyed a rapid recovery during the last fortnight. The preferred is selling around 93, against 88 three weeks ago, and the common is up from 34 to 36. There is no particular reason for this movement except that the previous decline had carried the shares below the level at which they were attractive to investors. Traffic officials on both the ele-

vated and surface lines express surprise at the way business is keeping up. Increases over last year are both large and constant. Nothing as yet has been made public concerning the negotiations which are pending for the lease of the St. Paul line north of Wilson Avenue by the Northwestern Elevated. It is stated that no official announcement regarding the matter may be expected for some time. The strength in the traction bond issues is equally noteworthy with the rise in the stocks. A good demand is reported for West Chicago 5s and for Lake Street income 5s. Fifty thousand dollars worth of the new Northwestern 4s were sold privately during the last week at 97.

Stock Quotations

The following table shows present bid quotations for the leading traction stocks, and the active bonds, as compared with a week ago; also the high and low since Jan. 1, 1900:

	Jan. 1, 1900		1901	
	To Date		July 23	Aug. 6
	High	Low	Closing	Bid
American Railways Co.....	48¼	27	40	40
Boston Elevated	192	165	185	180
Brooklyn R. T.	88¾	47½	77¾	73
Chicago City	285	209	206	200
Chicago Union Tr. (common).....	..	..	17	15½
Chicago Union Tr. (preferred).....	..	..	58	58
Columbus (common)	48	20	42	45½
Columbus (preferred)	103	80	100	102
Consolidated Traction of N. J.....	69½	57	66	66
Consolidated Traction of N. J. 5s.....	110	..	109½	109
Consolidated Trac. of Pittsburgh (common).....	30¼	20¼	..	20½
Indianapolis Street Railway.....	41	15	35	34
Lake Street Elevated	16¼	6½	12½	12½
Manhattan Ry.	131¼	84	118¾	115
Massachusetts Elec. Cos. (common).....	43¼	15	38¾	37¾
Massachusetts Elec. Cos. (preferred).....	96	70	93	92½
Metropolitan Elevated, Chicago (common)...	37½	24½	35	36
Metropolitan Elevated, Chicago (preferred)...	94	76	90	92½
Metropolitan Street	182	143¾	167½	163
Nassau Electric 4s	97½	..	97½	97½
New Orleans (common).....	33½	18¼	26	27¾
New Orleans (preferred).....	108	90	102	100
North American	*106	*74	99	97
North Jersey	36	21	23½	22¾
Northwestern Elevated, Chicago (common)...	52	..	45	47
Northwestern Elevated, Chicago (preferred)...	97½	..	93	92
Rochester	31½	12	27	25
St. Louis Transit Co. (common).....	35	16½	26½	26
South Side Elevated (Chicago).....	119	93	108	108
Syracuse (common)	b22	10½	20	22
Syracuse (preferred)	b65	25	60	62
Third Av.	135½	45¼	120	120
Twin City, Minneapolis (common).....	95¼	58½	94	94
United Railways, St. Louis (preferred).....	82	..	79	79½
United Railways, St. Louis, 4s.....	91½	..	89	89
Union Traction (Philadelphia).....	40¾	24¼	27½	26½
United Traction (Providence).....	110	107	109	109
Worcester Traction (common).....	34½	25	..	34½
Worcester Traction (preferred).....	106	89	105	105

a Asked. b Bid. * Quotation of new stock.

Iron and Steel

It appears probable that the first effect of the decision to continue the strike will be to quicken the demand in most branches of the iron and steel trade. Consumption has been restricted during the last three months by the belief that prices would fall off somewhat during the summer. But the strike, which means a reduced production and higher prices, changes the attitude of the buying interests. The Steel Corporation purchased during the past week between 60,000 and 70,000 tons of Bessemer and basic pig in the central Western market for immediate and for August delivery. This is by far the most important transaction reported in some time, and has materially strengthened the market for this class of the crude material. Activity continues in the bar iron trade, which is supplying a considerable demand from makers of agricultural implements. The structural trade is also active, and in wire and wire products the business is exceptionally heavy. No change is reported in the conditions of the rail market. Quotations are \$16 for Bessemer pig, \$24 for steel billets, and \$28 for steel rails.

Metals

Copper is weaker, at 16½ cents; tin is a shade lower, at 27¾ cents; lead is unchanged, at 4¾ cents, and spelter is unchanged, at 3.95 cents.

GADSDEN, ALA.—The Gadsden & Attalla Union Railway has been purchased by W. N. Weller, Charles D. Ward and John T. Weller, and it is reported that the new owners contemplate consolidating the road with the Gadsden Light, Ice & Coal Company. The reported name of the new company is the Alabama City, Gadsden & Attalla Railroad Company. The officers of the company are: W. H. Weller, president; Charles S. Ward, vice-president and general manager; John T. Weller, secretary and treasurer.

CHICAGO, ILL.—The Metropolitan West Side Elevated Railroad has declared a semi-annual dividend of 2 per cent on its preferred stock. The declaration in February last was 1½ per cent.

CHICAGO, ILL.—The formal sale of the Union Elevated, girding the downtown district and connecting with the four elevated roads of the Northwestern Elevated Railroad Company, was consummated Aug. 1. The purchase price is \$6,250,000, or \$125 per share.

CHICAGO, ILL.—A special report, dated Chicago, Aug. 5, says: "Otis, Wilson & Company have disposed of all but about \$175,000 of the \$1,500,000 of first mortgage 4 per cent gold bonds of the Metropolitan West Side Elevated Railway Company recently secured by them. The firm believes that within the next few days the entire issue will have been placed. The bonds are offered in amounts of \$1,000 and more at 99 and accrued interest from July 1, subject to change. The total amount of the issue was \$5,000,000, and it is said that practically all of the bonds have found ready takers. The purpose of the bond issue was to pay for the cost of extensions at present under construction, one being an extension from the Garfield Park line from West Forty-Eighth Avenue to West Fifty-Second Avenue, a distance of about ½ mile, and the other an extension of the Douglas Park line to West Fortieth Avenue, 1.8 miles west of the present terminus of that branch. The bonds are secured by a first mortgage on the branch railways, right of way and franchises, including all property now owned or hereafter to be acquired in connection therewith, together with all lands, tracks and roadways of the branch railways; also by a mortgage on all of the company's main line, subject to a mortgage of \$10,000,000 date Aug. 1, 1898."

BOSTON, MASS.—As was generally expected, the directors of the Boston Elevated Railway Company have declared a semi-annual dividend of 3½ per cent, thus placing the stock on a 7 per cent basis. The dividend is payable Aug. 16.

BOSTON, MASS.—The Railroad Commissioners have authorized the Inter-State Consolidated Street Railway Company, of Massachusetts, to purchase the Inter-State Consolidated Street Railway Company, of Rhode Island, and to issue \$275,000 capital stock in exchange, share for share, for the stock of the latter company.

WORCESTER, MASS.—The Boston News Bureau has this to say of the Worcester consolidation: "The Worcester Railways & Investment Company, recently organized by Boston and Worcester men, with \$6,000,000 capital, to acquire the street railway properties in the vicinity of Worcester, is a unique financial proposition. The company is a voluntary association, formed somewhat after the manner of the Massachusetts Electric Companies. There is only one class of stock, however, which has no par value, each share representing a fractional interest in the entire assets of the properties taken over, and consequently each share is entitled to a fractional part of the income. The shares are being privately placed at \$100 per share, and it is the intention of the management to pay dividends at the rate of 4½ per cent at first, but based on the operation of the properties heretofore, this rate should ultimately be increased. The old Worcester Consolidated road has shown a larger relative increase in gross receipts from year to year than any other street railway in the State. The Worcester Railways & Investment Company purchased \$6,400,000 of stock in the companies it controls, but issued only \$6,000,000 of trust certificates against it, and it is declared that the above \$6,000,000 represents actual property without the infusion of any water whatsoever. The companies taken over have bonds outstanding to the amount of but \$1,300,000. The Investment Company secured control of the Worcester Consolidated Road by purchase of the stock of the Worcester Traction Company, which controlled the Consolidated. It is now proposed to liquidate the Traction Company, leaving as the operating properties the Worcester Consolidated, Worcester & Suburban, Leominster & Clinton and the Worcester & Marlborough. These companies serve a population of about 250,000. Vermilye & Company have acted as the financial agents in the undertaking."

DETROIT, MICH.—The directors of the Detroit United Railway Company have declared the regular quarterly dividend of 1 per cent, payable Sept. 2. Books close Aug. 15 and reopen Sept. 3.

BINGHAMTON, N. Y.—The Binghamton Railroad Company reports earnings as follows:

	1901	1900
Year ending June 30		
Gross receipts	\$190,910	\$176,210
Operating expenses	104,075	99,059
Earnings from operation.....	\$86,835	\$77,151
Fixed charges	60,177	55,455
Net earnings	\$26,658	\$21,895

BROOKLYN, N. Y.—The Brooklyn Rapid Transit Company reports earnings as follows:

	1901	1900
June		
Gross receipts	\$1,181,023	\$1,105,006
Operating expenses	732,740	657,879
Earnings from operation	\$448,283	\$447,128
Fiscal year ending June 30		
Gross receipts	\$12,101,197	\$11,751,595
Operating expenses	7,970,634	7,993,226
Earnings from operation	\$4,130,563	\$3,758,369

The gross receipts of the company for June, 1901, show an appreciable increase—\$76,000—over those for June, 1900, but this is offset by the increased operating expenses, the earnings from operation, as a consequence, showing an increase of but \$1,155. There is a considerable increase in gross receipts for the fiscal year just ended, the increase being \$225,000. The increase in the company's gross receipts was \$349,600, but the decrease in operating expenses was not significant, being \$25,500.

NEW YORK, N. Y.—An extra dividend of 38 per cent has been declared by the Sixth Avenue Railroad Company. This dividend results from the sale of the car house property at Sixth Avenue and Forty-Third Street. The General Carriage Company purchased this property for about \$1,000,000, and the title is now held by the Central Realty Company.

NEWBURGH, N. Y.—A large majority of the bondholders of the Newburgh Electric Railway Company, Newburgh & Orange Lake Railroad Company and Walden & Orange Lake Railroad Company have consented to a plan of reorganization of the companies. Holders of the bonds of the companies are offered the opportunity of depositing with Hamilton Trust Company, of Brooklyn, their securities and securing the benefits thereof on or before Aug. 15.

NEW YORK, N. Y.—The consolidation proposition of the American Light & Traction Company, which some time since acquired several of the so-called McMillin gas and electric companies, has been accepted by a majority interest of the following companies, the terms offered being as indicated: Each share of stock of Binghamton (N. Y.) Gas Works (4000 shares of \$100) to be exchanged for \$26.38 new preferred and \$7.91 new common. Each share of stock of Southern Light & Traction Company, of San Antonio (17,625 shares of \$100) to be exchanged for \$44.28 new preferred and \$13.28 new common. Each share of St. Paul Gas Light (15,000 shares of \$100) to be exchanged for \$62.50 new preferred and \$18.75 new common.

NEW YORK, N. Y.—John B. McDonald, the contractor for the rapid transit tunnel construction, has forwarded his requisition for \$1,200,000 to President Alexander E. Orr for expenses of the tunnel during July. It exceeds the amount drawn from the city during any preceding month, and brings the total expenses of tunnel work up to date to \$7,000,000. Heretofore the requisitions drawn upon the board by Mr. McDonald have averaged \$500,000 a month. Last month the amount paid out was \$700,000. In March it reached \$970,000, which was the record until this month's bill was received from the contractor. The total expenditure of \$7,000,000 would indicate that one-fifth of the work was completed; but much more than this has been done, as allowances must be made for equipment.

CLEVELAND, OHIO.—Mr. Moore, of the Everett-Moore syndicate, was in Detroit last week and perfected the deal for the purchase of the Detroit, Rochester, Romeo & Lake Orion Railway and the Detroit, Utica & Romeo Railway, reference to which has previously been made in the STREET RAILWAY JOURNAL. This gives the syndicate all the interurban roads radiating from Detroit, with the exception of the Detroit, Ypsilanti, Ann Arbor & Jackson Railway. An option was secured on this property, but it is stated, that the figure is considered too high. The recent purchase adds about 100 miles of completed road to the syndicate properties in Michigan.

WOOSTER, OHIO.—The Cleveland & Southern Electric Railway Company has filed a mortgage with the County Recorder for \$1,000,000, given to the Cleveland Trust Company. Fifty of the bonds of \$1,000 each are to be issued at once for the purpose of providing for the outstanding indebtedness and constructing the road.

CANTON, OHIO.—It is reported here that the Everett-Moore syndicate, which owns the Northern Ohio Traction Company, and the Boston syndicate which is building the Canton-Akron Electric Railway, are both seeking to purchase the Canton-Massillon Railway, which is in operation between this city and Massillon. It would form a valuable connecting link for either of the roads. It is asserted that \$800,000 has been offered for the property.

READING, PA.—The United Traction Company, controlled by the United Power & Transportation Company, perfected a lease of the Reading & Southwestern Railway on Aug. 5, thus securing control of all the lines in the city. The lease is for 999 years, and it is said that the stockholders of the company have guaranteed 12 per cent.

PHILADELPHIA, PA.—The American Railways Company's regular dividend of 1 per cent, declared last week, is payable Sept. 16. The regular dividend meeting occurs between Aug. 10 and 15, but the dividend was declared in advance of the meeting. The annual meeting of the company will be held Sept. 19.

DALLAS, TEX.—The Dallas Consolidated Electric Street Railway Company, of Dallas, filed July 22 an amendment to its charter increasing its capital stock from \$1,000,000 to \$2,000,000. Five thousand shares of the new issue of stock will be preferred.

SEATTLE, WASH.—Federal Judge Hanford has signed a decree fixing Aug. 28 as the date of the sale of the Seattle City Railway Company. The property includes a valuable franchise, two lines running from the downtown business district to and along the lake, rolling stock, a power station and car houses. The foreclosure proceedings were brought by the Central Trust Company, of New York. The principal owner of the bonds is the Seattle Electric Company, which controls all other local street car lines but one, and expects to acquire the city line at the coming sale.

SEATTLE, WASH.—The Seattle Electric Company reports earnings as follows:

	1901	1900
Five months ending May 31		
Gross receipts	\$514,386	\$412,705
Operating expenses	321,194	315,452
Earnings from operation	\$193,192	\$97,253
Fixed charges	100,843	76,438
Net earnings	\$92,349	\$20,815

MILWAUKEE, WIS.—The Milwaukee Electric Railway & Light Company reports earnings as follows:

	1901	1900
Five months ending June 30		
Gross receipts	\$918,104	\$830,674
Operating expenses	492,033	441,341
Earnings from operation	\$426,071	\$389,333

Tables of Recent Traction Earnings

NAME	Week or Month	LATEST GROSS EARNINGS		LATEST NET EARNINGS	
		1901	1900	1901	1900
American Rys. Co.	June	\$79,736	\$73,299	\$.....	\$.....
Binghamton Ry. Co.	June	21,154	17,201	11,434	7,960
Brooklyn R. T. Co.	May	1,075,576	1,086,840	360,415	428,742
Chicago & Mil. El. Ry. Co.	June	17,253	13,849	11,057	9,385
Cincinnati, Newport & Covington Ry. Co.	June	72,201	73,965	42,452	42,700
Cleveland El. Ry. Co.	June	72,201	173,820	91,298	80,964
Cleveland, Painesville & Eastern	Apr.	10,184	8,966	4,249	3,163
Consolidated Tr. (Pittsburgh)	Apr.	238,706	234,247	111,954	119,566
Denver City Tramway	June	134,738	114,868	59,843	49,941
Detroit United Ry.	June	250,668	220,584	116,764	98,109
Duluth Superior Tr.	May	37,205	.....	.....	.....
Herkimer, Mohawk, Ilion & Frankfort Ry. Co.	May	4,508	4,146	1,935	908
International Tr.	May	283,403	203,389	120,993	87,903
London St. Ry.	May	10,003	7,345	3,185	674
Montreal Street Ry.	June	180,371	168,244	.....	.....
Northern Ohio Traction.	June	58,191	47,566	26,069	16,494
Olean St. Ry. Co.	Apr.	3,749	3,505	1,741	1,100
Pittsburgh Consol. Tr.	June	265,824	247,989	147,337	133,518
Richmond Traction Co.	June	23,277	19,016	8,234	9,877
Rochester Ry. Co.	May	80,401	75,749	32,900	26,011
Scranton Ry. Co.	June	59,928	52,873	30,265	21,823
Southern Ohio Trac. Co.	June	29,905	25,818	14,741	11,747
Syracuse R. T. Ry. Co.	June	56,952	48,211	26,010	21,305
Twin City Rapid Transit.	May	251,946	224,927	137,605	119,694
United Tr. Co. (Albany).	June	125,831	119,148	27,306	25,127
United Tr. Co. (Pittsburgh)	Mar.	157,792	148,009	70,741	65,511

NAME	Period Ending	GROSS FROM JULY 1 TO LATEST DATE		NET FROM JULY 1 TO LATEST DATE	
		1901	1900	1901	1900
American Rys. Co.	June 30	\$84,297	\$778,042	\$.....	\$.....
Binghamton St. Ry.	June 30	190,910	176,210	86,835	77,151
Brooklyn R. T. Co.	May 31	1,092,174	1,064,658	3,682,280	3,311,243
Chicago & Milwaukee El. Ry. Co.	June 30	152,959	117,966	84,632	66,558
Cincinnati, Newport & Covington Ry. Co.	June 30	384,638	369,938	223,546	220,145
Cleveland El. Ry. Co.	June 30	2,149,999	1,649,304	980,890	637,321
Cleveland, Painesville & Eastern	Apr. 30	119,666	102,359	61,454	50,781
Denver City Tramway	June 30	1,395,179	1,262,915	647,964	497,233
Detroit United Ry.	June 30	1,263,546	1,150,728	569,035	493,249
Herkimer, Mohawk, Ilion & Frankfort Ry. Co.	May 31	48,895	47,026	20,247	21,063
International Tr.	May 31	2,698,332	2,331,632	1,303,216	1,085,748
London St. Ry.	May 31	115,834	60,194	45,192	6,673
Milwaukee El. Ry. & Lt. Co.	June 30	918,104	830,674	426,071	389,333
Montreal Street Ry.	June 30	1349,214	1,256,116	.....	.....
Northern Ohio Tr.	Apr. 30	162,251	.....	58,217	.....
Olean St. Ry. Co.	Apr. 30	43,019	39,322	21,735	18,475
Pittsburgh Cons. Tr.	June 30	768,913	731,948	403,567	379,447
Richmond Trac. Co.	June 30	152,051	143,217	58,379	65,630
Rochester Ry.	May 31	808,156	835,543	337,248	328,021
Scranton Ry. Co.	May 31	554,095	548,044	233,677	249,802
Seattle Elec. Co.	May 31	514,386	412,705	193,192	97,253
Southern Ohio Tr.	June 30	142,956	126,640	55,937	56,018
Syracuse R. T. Ry. Co.	May 31	564,347	504,191	254,458	211,962
Twin City R. T. Co.	May 31	1,178,258	1,086,395	614,594	548,433
United Tr. Co. (Albany)	June 30	1,340,356	.....	186,131	.....
United Tr. Co. (Pittsburgh)	Mar. 31	1,434,145	1,321,158	634,423	604,154

* Nine months. † Caused by strike of employees. a From Jan. 1. b Three months. c Nine months. d Five months.

NEWS OF THE WEEK

CONSTRUCTION NOTES

BESSEMER, ALA.—Application has been made to the city of Bessemer for a franchise for a street railway line to enter the city via Ensley, Colomite and Brighton, and thence through to Jonesboro. The matter is before a committee of the Council.

MOBILE, ALA.—It is understood that the street railway companies of the city of Mobile will present a petition to the City Council for a twenty-five-year extension of their franchises which expire in 1914. In return for this the companies propose to give free lights to the public buildings, fire engine house, etc., which will make a saving to the city of at least \$500 a year.

VALLEJO, CAL.—Application having been made by J. W. and H. F. Hartzell for a franchise to build an electric railway from Benicia to Vallejo, and also from Vallejo to Masonic and Odd Fellows' Cemetery, the Board of Supervisors will receive bids for the franchise up to Sept 1.

HARTFORD, CONN.—The general contract for the construction of the Hartford & Springfield Street Railway Company, which is now under construction, is held by the National Railway Company, and the contract has been sublet as follows: L. E. Myers Company, track work; Pennsylvania Steel Company, track; Nason Manufacturing Company, cars; General Electric Company, motors and power station equipment. The line is to extend between Hartford, Conn., and Springfield, Mass., and 8½ miles of old track is being reconstructed and 6½ miles of new being built. The power station will be equipped with two 300-kw generators, two cross-compound conducting Wetherill-Corliss engines, and three Cahill horizontal water-tube boilers. The officers of the company are: Philip S. Saltonstall, president; Chauncey Eldridge, treasurer; George B. Larrabee, superintendent.

INDIANAPOLIS, IND.—New York capitalists have agreed to subscribe for the \$2,000,000 bonds of the Indianapolis & Logansport Interurban Railway Company, and the contract for the construction of the road is said to have been awarded. The road will be 67 miles in length, and will extend through a fine farming country.

VALPARAISO, IND.—P. W. Clifford, who was reported as interested in a plan to construct an electric railway at Valparaiso, states that the probability of a street railway being built is remote, and that probably nothing will be done before next year.

CORNISH, MAINE.—The recently incorporated Ossipee Valley Railway Company has not awarded the contract for the construction of its proposed road. The new line will be about 12 miles long, and will extend from Cornish to Baldwin, Hiram, Keyes Falls, Parsonfield, Porter and East Freedom. The company will operate four motor cars and four trail cars, and expects to begin construction work in the near future. The company will not erect a power station, but will lease power. The officers of the company are: A. S. Penneck, president; Allen Garvet, vice-president; F. A. Hobart, treasurer; J. M. Lord, clerk. Mr. Penneck, the president, can be addressed at 439 Tremont Building, Boston.

BALTIMORE, MD.—Right of way is now being secured for the extension of the lines of the United Railways & Electric Company from Dundalk to Sparrow's Point. The line will be 3 miles in length.

WORCESTER, MASS.—Work was begun July 24, at Worcester, on the Worcester, Rochdale & Charlton Depot Street Railway. The start was made at Stafford Street, and the work will be pushed toward the Auburn line, as the franchise granted the company requires the completion of track laying by Aug. 10.

BENTON HARBOR, MICH.—The West Michigan Traction Company has been incorporated with a capital stock of \$1,000,000. Eastern capitalists are understood to be behind the company. The company proposes to build an electric railway from the vicinity of Benton Harbor to Dowagiac, Cassopolis, Decatur, Pawpaw and Kalamazoo, a distance of 90 miles.

DETROIT, MICH.—The Detroit & Pontiac, Wyandotte & Detroit River and the Detroit & Northwestern Railways have moved into the new joint express depot at the corner of Congress and Fifth Streets, Detroit. The building is not yet completed, but when it is, there will be no more convenient or compact express office in the city. The cars will run up to the side of a long, roomy platform, and here unload their freight, and the articles will then be transported to the other side of the station, where they will be placed in wagons.

PETOSKY, MICH.—The Petosky & Harbor Springs Railroad Company, which has for some time been engaged in securing franchises and rights of way, has been incorporated under Michigan laws to build its road from Petosky to Harbor Springs, a distance of about 8 miles. The capital stock of the company is \$64,000, and the motive power to be used will be determined by the directors. The stockholders of the company are: Charles A. Thatcher, William P. Thatcher, John M. Ormond, George W. Blake and D. Charles Hart, of Toledo, Ohio; D. T. Elmer and Fred D. Elmer, of Monroe, Mich.

LANSING, MICH.—The differences between the Lansing, St. Johns & St. Louis Railway Company and the Council of St. Johns have been adjusted satisfactorily, and the work of building the line through that place will proceed rapidly.

LUDINGTON, MICH.—The Epworth League Railway Company, organized some time ago for the purpose of building an electric railway from Ludington to the Epworth League training grounds, on Hamlins Lake, a distance of about 4 miles, has amended its articles of association so as to change the name of the company to the Ludington & Northern Railway Company. The road is practically completed for the entire distance, and is in operation.

JACKSON, MISS.—General Manager Douglass, of the Jackson Street Railway & Electric Company, has been to Memphis to confer with the stockholders

of the road, looking to some needed improvements. It is said that a number of new cars will be bought.

KANSAS CITY, MO.—An ordinance has been introduced in Council and referred to the committee on streets, alleys and grades, granting a franchise to the Inter-State & Leavenworth Electric Railway Company to build and operate an electric railway in Kansas City. The Inter-State Company proposes to use the tracks of the Metropolitan Street Railway on certain streets, and at the same time that the franchise ordinance was put before the Council, another ordinance was introduced fixing the rate of compensation for the use of the track and overhead wires of the Metropolitan Company. This rate was fixed at 3 per cent a year upon a valuation of \$20,000 for each mile or fraction of a mile of single track used by the Inter-State Company. It provided, too, that the cost of maintaining the tracks, poles, wires and other appurtenances of the lines used by both companies be divided in proportion to the number of cars used by each company. These ordinances are still in the hands of the committee of the Council.

KANSAS CITY, MO.—A force of men, under the North American Construction Company, has begun building track on Springfield Avenue, a street a mile long. A part of this will be tie construction, but most of it will be concrete trench construction. This will be the first crosstown line in Kansas City.

KANSAS CITY, MO.—The Kansas City-Leavenworth Railway Company, which is now operating an electric railway from Kansas City, Kan., to Leavenworth, Kan., 25 miles, has secured a charter in Missouri for a company called the Interstate & Leavenworth Company, of Kansas City, the purpose of which is to build an electric railway into Kansas City, Mo. To do this the company has planned to bridge the Kaw River and build a high viaduct to take its cars uptown in Kansas City. The capital stock of the new company is placed at \$500,000. The stockholders of the company are: W. H. Gabriel, of Cleveland, Ohio; H. W. Wolcott, of Leavenworth, Kan.; H. S. Deneffe, of Wolcott, Kan.; H. E. Gabriel, J. M. Denny, James Black, Landry Harwood and F. E. Lott, of Kansas City.

UNION, N. H.—There is talk of building an electric railway from Union, through Acton and Emory Mills, to Springvale, Maine. Connection will be made at Springvale with the Sandford & Cape Porpoise Electric Railway.

BROOKLYN, N. Y.—The Brooklyn Rapid Transit is reported to have placed orders for twelve locomobiles, to be used as repair wagons, for delivery by Oct. 1, at a cost of from \$2,200 to \$2,500 each. General Manager Brackenridge, so it is reported, will probably use a locomobile for his personal inspection trips, like President Greatsinger.

NEW YORK, N. Y.—The Metropolitan Street Railway Company has begun the construction of its Kingsbridge road.

NEW YORK, N. Y.—The Treasury Department has issued a special license permitting the Rapid Transit Subway Construction Company to proceed with the work on the rapid transit subway under Mail Street, directly back of the Federal Postoffice.

PORT CHESTER, N. Y.—From the list of the directors of the newly incorporated New York & Stamford Railway Company it is evident that the New York, New Haven & Hartford Railroad is behind the company, and that the company is perfecting another barrier to the companies that would perfect a complete trolley line between New York and Boston. The New York & Stamford Railway is a consolidation of the Port Chester Street Railway Company and the Larchmont Horse Railway Company, which consolidation was perfected Aug. 3. This is the company that is constructing the new line through aristocratic Greenwich, and against which there was much opposition. The company is capitalized at \$500,000, and the directors are: W. H. Campbell, William Murray, C. O. Singer and John Neilson, of Larchmont; N. H. Heft and G. S. Heft, of Bridgeport, Conn.; R. J. Walsh, of Greenwich, Conn.; W. A. Ward, of Port Chester, and W. H. Trumbull, of Salem, Mass.

MARIETTA, OHIO.—The Parkersburg & Marietta Electric Railway Company is advertising for bids for the construction work on 12 miles of line. C. H. Shattuck is president of the company and J. M. Jackson, of Parkersburg, W. Va., chief engineer.

TOLEDO, OHIO.—The Michigan & Ohio Electric Railway Company, of which W. I. Robinson, of Detroit, is president, has placed contracts for grading, work to start within thirty days. The road will extend from Toledo to Maybee, Belleville, Romulus, Taylor and Encorse, Mich., with a branch to Detroit, and will have 61 miles of track.

CINCINNATI, OHIO.—The Cincinnati Traction Company has purchased a building site at the corner of Walnut Street and Government Square, and will erect a fine new office building.

SWANTON, OHIO.—Construction work is progressing at the rate of half a mile a day on the Toledo & Indiana Railway Company's line west of this city. Nearly all the right of way has been secured, and the graders follow the right-of-way men as close as possible. Track laying will start in the near future. East of Swanton the Toledo & Bryan Air Line Company is pushing construction work, and there are no indications of a compromise between the rival companies.

COLUMBUS, OHIO.—After waiting months for rails, the Columbus Railway Company has secured a large shipment, and is pushing construction work with a large force, on the Mt. Vernon Avenue line extension, which will connect, at the city limits, with the Columbus, New Albany & Johnstown Railway, now in process of construction.

COLUMBUS, OHIO.—The work of converting the Grove City line from broad gage to standard gage has been completed, and cars are now in operation to Grove City. Construction work is being pushed to Morgan's Station, and this line will be in operation by Aug. 15. The line is now owned by the Appleyard syndicate, and is known as the Columbus, Grove City & Southwestern Railway.