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EDITORIAL NOTICE.

The news issues of the Street Railway Journal are devoted primarily to the publication of street railway news and current happenings related to street railway interests. All information regarding changes of officers, new equipments, extensions, financial changes and new enterprises will be greatly appreciated for use in its columns.

All matter intended for publication must be received at our office not later than Wednesday morning of each week in order to secure insertion in the current issue.

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Test of the Albany & Hudson Third-Rail Lines

The first trip over the third-rail line of the Albany & Hudson Railway, of Hudson, N. Y., was made Aug. 20. Power for operating the road was received from the company's new waterpower plant at Stuyvesant Falls, and the test was satisfactory in every respect. It is said that a speed of 60 miles an hour was attained at times.

Cleveland Companies May Carry Freight

The law department of the city of Cleveland has handed down an opinion citing that the Cleveland City and Cleveland Electric Railway Companies have the right to handle cars of the suburban companies carrying freight. The law department further says that the city cannot prevent the handling of freight, nor regulate the matter, so long as the traffic is conducted within reasonable bounds. The law department looked into the question at the instigation of the Council.

Mr. Abel of Chicago Inspects the Brooklyn Rapid Transit System

Howard Abel, president of the Lake Street Elevated Railroad, of Chicago, has been in Brooklyn for a few days inspecting the Brooklyn Rapid Transit system. Mr. Abel's trip is similar to one made by President Rossiter, of the Brooklyn Rapid Transit Company, to Chicago a few months ago, and was made for the same purpose, viz.: To study the transportation difficulties of the city and the methods by which they are overcome, and possibly to add a suggestion or two.

More Religious Advertising in Street Cars

The patrons of the Westport electric line in Kansas City, Mo., were greeted on the morning of the 15th with a new advertising card, among the others displayed on the car, which read: "How many minutes a day do you give your God?" Their curiosity was at once aroused, and this card was the talk of the city for a number of days. All efforts to ascertain who had the card placed in the cars were unavailing, but it is intimated that it was placed there by a prominent merchant, who is very religious, and who insists that his name be kept unknown. Several months ago the advertisement of a Wilmington, Del., church was placed in the cars in that city, but so far as we know these are the only instances in which such cards have been displayed in street cars.

Canada's Electric Railways

Up to the close of 1899 there were 632 miles of electric railway in Canada, as compiled by the government statistician, with a total car mileage of 29,646,847. The total number of passengers carried was 104,033,659, or a ride per capita of 20 miles. The mileage and passengers carried show that for each mile run the electric carried three and one-half passengers; compared with the previous year the number of passengers carried increased nearly 9,500,000, and the number of miles run over 1,000,000. The number of transfers given in Toronto, alone, was 10,500,000. The amount of paid-up capital invested in electric railways is \$21,700,000. The steam railroads in 1899 carried 16,168,191 passengers, with a train mileage of 25,292,859, thus making an average of one and one-half passengers per mile. The electric car mileage is, therefore, 4,500,000 in excess of the passenger and mixed trains of the steam railroads. Together the Canadian steam and electric railways carried over 120,000,000 passengers, the proportion being thirteen by steam to eighty-seven by electricity.

Duluth and Superior Systems Consolidated

The consolidation of the Duluth Street Railway Company, of Duluth, Minn., and the Superior Rapid Transit Railway Company, of West Superior, Wis., has been completed. The new company will be known as the Duluth-Superior Traction Company, and is incorporated under the laws of Connecticut, with a capital stock of \$5,000,000, divided into \$1,500,000 preferred stock and \$3,500,000 common stock. The new company controls all the street railway lines in both cities with a total mileage of 73. The consolidation was effected by the transfer of the property of the Superior Rapid Transit Railway Company to the Duluth Street Railway Company, which company has authorized an issue of \$2,500,000 first mortgage and collateral trust 5 per cent thirty-year bonds, of which amount \$500,000 are to be kept in the treasury for future improvements, etc. The holders of old first mortgage bonds of both companies were offered the opportunity of even exchange for the new bonds, and the large part of them have accepted the offer. The con-

solidated bonds upon the Duluth property were all deposited with Brown Bros. & Company, under an agreement to receive in exchange therefor 110 per cent in new preferred stock and ninety per cent in new common stock. The Central Trust Company is trustee under the mortgage securing the new bonds and also registrar of the stock. The Farmers Loan & Trust Company, of New York, is transfer agent for the stock. C. G. Goodrich, vice-president of the Twin City Rapid Transit Company, of Minneapolis, is president of the new company, and L. Mendenhall, president of the Duluth Street Railway Company, is secretary and treasurer of the new company.

Convention of the Canadian Electrical Association

The tenth convention of the Canadian Electrical Association will be held in Kingston, Ont., Aug. 29, 30 and 31. Every effort has been made by those in charge for the comfort of the delegates, and the city has been thrown open to them. The city officials have been very hospitable, and have made an appropriation for entertainment purposes and granted the use of the City Council chamber for the sessions; also space in the City Hall for the exhibit of electrical appliances. The convention will be opened on the 29th at 10 a. m., with a welcome speech by the Mayor, after which the president of the association will address the delegates. The usual routine business, such as the report of secretary-treasurer, reading of minutes, presentation and discussion of papers, will follow. Aug. 30 will be devoted to the consideration of the president's address, reading and discussion of papers, etc. Aug. 31 will be devoted to selecting a place for the next meeting, determining the date of such meeting, election of officers etc. Among the papers to be presented at the meeting are: "Utilizing the Available Central Station Capacity," by Prof. R. B. Owens, McGill University, Montreal; "Rotary Converters," by A. Gordon Grier and J. C. Hyde, Montreal; "Railway Subject, Giving Several Curves, Showing Up the Average Power During a Day, and Maximum and Minimum Requirement for Power Called for on the Quebec System," by Mr. Blair, Quebec Railway & Lighting Company, Quebec. The social features of the convention include a searchlight excursion among the Thousand Islands, tendered by the Mayor and citizens of Kingston; a banquet at the Hotel Frontenac, and a grand spectacular band concert, introducing an electrical musical fantasy of the Battle of Paardeberg, with electrical effects and fireworks.

Chemical Specifications for Rails

In a paper read at the recent annual meeting of the American Society of Civil Engineers held in London, Robert W. Hunt referred to the chemical specifications for rails, and said in part:

"The writer has gone on record so often as believing that in the absence of work at low heats, incident to the present method of making heavy-sectioned rails, it is important to increase the carbon with the section to as great an extent as the phosphorus present will permit, without incurring risk from breakage, that it seems unnecessary to repeat the arguments."

At the Atlanta meeting of the American Institute of Mining Engineers, in October, 1895, the writer presented a set of specifications for "Steel Rails of Heavy Sections Manufactured West of the Alleghenies." In accordance with these specifications thousands of tons have been made and used with satisfactory results. During the last two years the Western makers have declined to limit the phosphorus to less than 0.10 per cent, but, in fact, have been making steel with a fraction less than that amount—say 0.09 to 0.096 per cent. And he regrets to say that in many cases they insist that the amount of carbon shall be less than that which he has advocated. He believes, however, that gradually, higher carbon will prevail, and certainly has not had any cause to change his mind on the subject. His experience as a steel rail maker, and as an observer of the wear of steel rails of many sections and diverse chemical composition, leads him to advocate: First, work, after careful heating of the steel, and continued until its temperature has been much reduced. Second, that the carbon percentages shall be increased in proportion to the increase of rail section, the ultimate amount being, of necessity, limited by the contained percentage of phosphorus. In all cases he advocates the use of drop tests, on samples from each heat of steel.

At present many of the American railway engineers use the drop test, but none of them demands the static or tensile tests insisted upon by so many engineers of other countries; nor does the writer

think there is any necessity for these latter. The chemical analyses and drop tests are all sufficient.

As a matter of record, the writer gives the chemical formulas contained in his specifications of 1895, in accordance with which, as stated thousands of tons of rails have been made and have given good results. And while at present the Western makers decline to limit their steel to 0.085 per cent phosphorus, the writer certainly sees no reason to decrease the carbon. In other words, so many rails have been made and proven safe with quite as much carbon as given in these specifications, and with 0.10 per cent phosphorus, that the writer does not think the former element should be made less, certainly not until the details of manufacture have been changed.

Sec. 8.—The carbon in the 70-lb. section shall not be below 0.43 per cent nor over 0.51 per cent. In the 75-lb. section, not less than 0.45 per cent nor over 0.53 per cent. In the 80-lb. section, not less than 0.48 per cent, nor over 0.56 per cent. In the 90-lb. section, not less than 0.55 per cent, nor over 0.63 per cent. In the 100-lb. section, not less than 0.62 per cent, nor over 0.70 per cent.

The phosphorus shall not exceed 0.085 per cent.

The silicon shall not be below 0.10 per cent.

The remainder of the chemical composition of the steel to be left to the maker's judgment.

Color Ordinances

Reference has been made in recent issues of this paper to the ordinances existing in certain Southern cities as to separate accommodations for colored and white passengers. Below is given the text of an ordinance recently passed in Montgomery, which is a sample of those in other cities:

An Ordinance to Regulate the Transportation of Passengers on Street Railways of the City of Montgomery and Its Police Jurisdiction.

Section 1. Be it ordained by the City Council of Montgomery as follows: That all street railways operated in the city of Montgomery and its police jurisdiction shall provide separate accommodations for the white people and negroes on said street railways by requiring the conductor or other employee in charge of said car or cars to assign passengers to seats on the cars under their charge in such manner as to separate the white people from the negroes when there are both white people and negroes on the same car, except that negro nurses having in charge white children or sick or infirm white persons may be assigned seats among the white people.

Sec. 2. Be it further ordained: That all conductors and other employees while in charge of cars are hereby invested with the police power of a police officer of said city to carry out said provision, and any passenger refusing or failing to take a seat among those assigned to the race to which he belongs—if there is any such seat vacant—at request of conductor or employee in charge of said car, shall, upon conviction, be fined not more than \$100.

Sec. 3. Be it further ordained: That all conductors and other employees superintendents of companies, and any officer, agent or employee who shall fail or refuse to provide for, and enforce such separation of the races as is herein provided upon the cars of said company operating in the city of Montgomery and its police jurisdiction, shall, upon conviction, be fined not more than \$100 for each day they so fail to provide such separate accommodations.

Sec. 4. Be it further ordained: That nothing in this ordinance shall be construed as prohibiting the street railways from separating the races by means of separate cars or trailers on such lines as they may see fit.

Sec. 5. Be it further ordained: That this ordinance shall take effect immediately after its adoption.

Adopted Aug. 6, 1900. Approved Aug. 10, 1900.

E. B. JOSEPH, Mayor.

Street Cars in Glasgow

United States Consul Taylor at Glasgow makes the following report to the State Department regarding the street railway system of Glasgow:

"The street railway system of Glasgow is owned and operated by the city under the direct supervision of a committee of the City Council. The report for the year ended May 31, 1900, shows that the total length of double track operated by the city is 41 miles, 1 furlong, 178 yds. over 42 miles, 2 furlongs, 161 yds. of streets, making a total length of single track of 83 miles, 3 furlongs, 119 yds.

"The gross capital expenditures for the system since 1894 (independent of operating expenses) have been \$5,164,975, and the present indebtedness is \$4,061,806. The capital invested is \$4,559,502. Of the 41 miles of double track, 5 miles have electric traction, the rest being operated by horses. The total receipts of the system during the year were \$2,286,850. The working expenses were \$1,676,412, leaving a balance of \$610,438, of which there was expended some \$84,000 for interest on capital, \$57,501 for sinking fund, \$156,096 for depreciation written off capital, etc. One item of \$60,000 consists of payments made to the general revenue fund

of the city, which is in lieu of the amount which the city would receive in taxes, it is presumed, were the system operated by a private company. The balance goes into the reserve fund.

"There are 3400 persons employed, including 100 clerks. The general manager receives \$6800; the chief engineer, \$2400; the electrical engineer, \$2000; and the mechanical engineer, who has charge of the power station, \$1216. Switch boys receive 28 cents per day; trace boys, from 40 to 52 cents per day; car cleaners, from 88 cents to \$1 per day; drivers, conductors and motormen, from \$1 to \$1.12 per day. These rates apply to Sundays and week days alike.

"The rolling stock consists of 384 horse cars, 132 electric cars (47 only of which are now running), 17 omnibuses, 39 lorries, and numerous carts, wagons and vans. There are 4411 horses.

"Work is now progressing, with the object of changing the entire system to electric traction, which it is hoped to have completed within the next eighteen months. No underground conduits will be used, according to the present plans. Fares range from 1 cent for first half mile to 2 cents for a mile; the longest ride is 6 miles, costing 6 cents. No transfers are issued, and tickets are not used.

"The committee of the City Council having supervision of the tramways receives no compensation. For that matter, however, no member of the city government of Glasgow, including lord provost, town councilors and bailies (police judges), receives compensation. The city of Glasgow has a population of about 850,000 and spreads over an area of nearly 12,000 acres.

"There are no electric or other tramways extending out of Glasgow to other towns or cities. Within the city is an underground cable road which makes a circuit of about 5 miles and is owned and operated by a private company. The rate of fares on this road is about the same as that prevailing on the surface roads."

Trolley, Steam and Third Rail in Connecticut

An article appearing under this caption in a recent issue of the *Railroad Gazette* enumerates the methods adopted by one steam railroad—the New York, New Haven & Hartford—to choke trolley competition. This company early realized that the introduction of the trolley meant reduced earnings, and at once set out to oppose all trolley projects. Its opposition began in the State Legislature, where every effort was made to squash the project. If, however, the road was finally built, the policy of the company was to buy it outright. We give the main part of the paper here, as it will undoubtedly interest those of our readers who have met with opposition in the projection of a system entering a steam railroad territory:

"In the sharp conflicts of the New York, New Haven & Hartford (Consolidated) Railroad Company with the promoters of parallel trolley enterprises, the efforts of the great steam corporation were largely centered against the interurban trolley projects. So successful had its resistance been that up to a few years ago, out of eighteen cities in the State only four were connected by trolley lines, and those from cities in two cases so contiguous that they formed, in effect, single municipalities. The change during the last four years, and particularly during the last two, is significant. Now, out of the eighteen cities in the State containing about 65 per cent of the whole population of Connecticut, twelve have trolley connection with other cities. Six cities—Waterbury, Meriden, Danbury, Middletown, Willimantic and Putnam—are still segregated, and one of them, Willimantic, has, as yet, no local trolley system. Of the six segregated cities, moreover, Middletown is pushing for trolley connection with Hartford; Meriden for connection with Middletown, Waterbury and New Haven, and a more important enterprise looks to the extension to Waterbury of the trolley system of the lower Naugatuck Valley. Within a year the tracks of the Bridgeport Traction Company have been extended to Shelton and, practically, to the cities of Ansonia and Derby, while the Norwich-New London trolley parallel, the cause of a long and picturesque contest reaching over several years, has just been opened for traffic. A few years more must undoubtedly find the interurban trolley system of the State complete, so far, at least, as to leave no segregated cities. It has already advanced so far and at such a pace as to create a new situation and give rise to some suggestive problems in future rivalries of steam and trolley.

"In meeting these interurban extensions the Consolidated Company has not been idle. Some of them, including one or two of the most serious, the steam company is still blocking in the State Legislature. The third rail has been used thus far only on the Highland division from Hartford to Bristol, a distance of about 17 miles. In one case, the connection between Bridgeport and New Haven, the Consolidated Company allowed the connecting trolley

line to be built, relying on the crookedness and indirection of the route between the two cities. But its immediate policy is evidently the renewal of its old plan of 'breaking' parallels by out and out purchase of trolley roads—illustrated within a few months by its reported and presumptive purchase of the Greenwich system and of the People's Tramway, of Killingly—the latter purchase not publicly announced, but well assured, and of such a nature as to deserve its paragraphic description.

"The People's Tramway Company began as a distinctively parallel enterprise looking to both passenger and freight competition with the Norwich & Worcester division of the Consolidated, essentially a freight division with low grades. The trolley charter was a liberal one, giving rights to build 31 miles of track, reaching eleven places, with 23,000 inhabitants, and to build to the northern Connecticut State line, connecting with a Massachusetts trolley system reaching south from Worcester. As a whole, it threatened a complete parallelism from Norwich to Worcester with freight carrying as an important, if not primary, object. To avert the danger the Consolidated Company has bought out the whole enterprise; it is building a dam to supply a great waterpower to furnish motive power for the trolley, and light for the communities reached by its wires; it proposes, if necessary, to build to the State line to preserve its own territory; and freight service to the steam railroad stations on lateral trolley lines forms an important part of its plan, the seemingly paradoxical feature of which is a steam company's paralleling itself by trolley for the sake of controlling territory and preserving its own traffic. The results of this novel and homeopathic device, on a pretty large scale, of meeting trolley rivalry, will be most instructive, but will not, of course, be evident for some years to come. Meanwhile the Consolidated Company, at uncertain cost, certainly 'protects' its Norwich & Worcester division.

"The consolidation of Connecticut trolley systems has gone on swiftly and surely, and at an accelerating pace. At the opening of the year 1893 there were 147 miles of street railway in the State. There are now about 490 miles. They are represented nominally on the schedules of the State Railroad Commission by thirty-one companies, but these, by consolidation, have, in fact, been reduced to sixteen companies. Of the 490 miles of trolley track in the State about 130 miles are owned or controlled by the so-called 'Young Syndicate,' commonly regarded as identical with the United Gas Improvement Company, of Philadelphia; about 90 miles by the Fair Haven & Westville Company, and about 62 miles by the Hartford Street Railway Corporation, making 282 miles, or somewhat more than 57 per cent of the Connecticut mileage controlled by three interests. The Consolidated Company owns a trolley trackage of about 42 miles, which would give about 66 per cent of the trolleys of the State now controlled by four interests, and a far larger percentage were the values of the four trolley interests to be reckoned; and consolidation still goes rapidly on, carrying with it, in not a few cases, lighting plants and functions also.

"In the long rivalries of electricity with steam in the State this merger of electric interests betokens new conflicts and new conquests. The steam corporation must hereafter meet in the Legislature not scattered and divergent trolley forces, but centralized ones, backed, in some cases, by exotic capital, and powerful whether considered individually or apart. At least one of the large trolley combinations may be set down as very aggressive, planning extensions, some of them parallels, and almost necessarily relying in part on such extensions, together with possible freight and express business for returns on the large prices paid for acquired roads. Small economies in operation, blanket mortgages and stock bonuses hardly supply an intelligent motive in the trolley mergers. Ulterior aims which menace steam-railroad interests and imply new contests may reasonably be looked for."

Taxation in Ohio

The Ohio State Board of Commerce, of which E. M. Thresher, of Dayton, is president; C. B. Murray, of Cincinnati, is general vice-president; C. D. Firestone, of Columbus, is treasurer, and Henry A. Griffin, of Cleveland, is secretary, has issued the following circular:

August 1, 1900.

To the Citizens and Business Men of Ohio:

GENTLEMEN.—A widely disseminated discussion of clearly defined propositions is an indispensable preparation for the enactment by the State Legislature of measures to promote efficient government and safeguard the interests of taxpayers.

The people should derive benefits from government of greater value than its cost. When taxation is kept within such a limit and is so laid as to produce this result, it promotes prosperity. When

it exceeds this normal limit, or is not justly laid, it is oppressive.

No State has succeeded in devising a satisfactory system of taxation. Ohio can do so and become an example for others.

Legislation affecting municipal affairs absorbs fully 75 per cent of the time of the Legislature. Municipal debts and taxation are increasing at an alarming rate. The relations between municipalities, the people and public service corporations are not satisfactory. During every session of the Legislature attempts are made to enact measures on these subjects that are not properly drawn.

As a means of continuing its work upon these subjects and to secure a popular and wisely guided discussion of them, the Ohio State Board of Commerce has arranged to use the columns of *Public Policy* for an open discussion of the propositions following:

1. The objects of taxation for State, county or local purposes should be separated so that assessments shall affect only the tax district for which they are made.

2. Taxation for unnecessary purposes, and to provide funds to cover waste and extravagance, can be prevented by a needed administrative inspection and publicity.

3. Efficiency and economy in the administration of public business can be developed and maintained only by a uniform system of accounting, prescribed and audited by the State, and the publication of annual comparative statistics.

4. Deficiencies to be paid by taxpayers, in the case of publicly owned and operated industries, should be prohibited by providing that service rendered shall not be sold to private or other users at less than its true and entire cost.

5. Public mortgages on taxpayers' property for the purpose of acquiring and operating public service industries should be prohibited. Bonds authorized for such purposes should be secured only by mortgage on the use of all public rights of way used by, the property acquired for, and the revenue derived from, the industry, without recourse upon funds raised by taxation.

6. Corporations owning and operating public service industries should be regulated by contracts between them and the local or the State government, for an exclusive supply of the service they are to render for private and public use. Such contracts should provide that the price to be charged for the service should cover only cost plus a reasonable profit on actual investment, and stipulate that all accounts of the contracting corporation necessary to the determination of cost shall be kept in form prescribed by and audited by the State.

7. Efficiency in office is the true test for public employees. Merit shown by service record should be the means for retaining employment and winning promotion, to the exclusion of all other influences.

8. Self-government for every village and city should be secured by a general law providing for their uniform organization under municipal constitutions of their own adoption.

To make certain the enactment of laws in conformity with these propositions, by the next Legislature, one hundred or more persons in each legislative district should be in touch with the discussion of these subjects, for his own information, and to enable him to influence others. This will secure a uniform presentation of these subjects throughout the State. It will educate constituents and representatives to the same views, and will render the enactment of the legislation desired certain.

No fund is necessary for this purpose. The only requirement is that the citizens and business men of each district shall provide for their own district. When this is completely done the whole State will be cared for.

Unintelligent legislation costs much more than the educational work necessary to secure correct legislation. This is a perfectly sound proposition. We therefore believe every citizen and business man can better afford to pay \$2 for a weekly, high-class journal, pledged to publish all this board may require, and one well equipped to guide the discussion intelligently, than not to have the work done.

For this purpose and upon this basis your co-operation is requested.

THE OHIO STATE BOARD OF COMMERCE,
(Signed) E. M. Thresher, President.

(Signed) Henry A. Griffin, Secretary.

Awards to American Exhibitors at Paris

On Aug. 17 the French officials announced the list of awards to American exhibitors at the Paris Exposition. Every line of industry and art received recognition, and, in all, the United States secured 1981 awards. Of these 220 were grand prizes, 486 gold medals, 583 silver medals, 422 bronze medals, 270 honorable men-

tions, and a long list of gold, silver and bronze medals for collaborators.

Below are given a list of the principal exhibitors, as given out to date, in the departments of machinery and transportation, who received grand prizes or gold medals:

DEPARTMENT OF MACHINERY—GROUP IV.

GRAND PRIZES

Worthington Pumping Engine Company.
Batcheller Pneumatic Tube Company.
Brown & Sharpe Manufacturing Company.
Pratt & Whitney Company.
E. W. Bliss Company.
Niles Tool Works Company.
J. A. Fay & Egan Company.

GOLD MEDALS

Ball Engine Company.
William Sellers Company.
George F. Blake Manufacturing Company.
Tinius, Olsen & Company.
Otis Elevator Company.
Rand Drill Company.
Charles A. Schieren & Company.
Crane Company.
Ingersoll-Sergeant Drill Company.
Shaw Electric Crane Company.
Simonds Manufacturing Company.
Chicago Pneumatic Tool Company.
Morse Twist Drill & Machine Company.
Cincinnati Milling Machine Company.
Hendy Machine Company.
Warner & Swasey.
Norton Emery Wheel Company.
Bement-Miles Company.
E. C. Atkins & Company.
Gisholt Machine Company.
Jones & Lamson Machine Company.
F. E. Reed Company.
Deering Harvester Company.
Bullard Tool Company.
Pond Machine Tool Company.

DEPARTMENT OF MACHINERY—GROUP V.

GRAND PRIZES

American Steel & Wire Company.
E. C. Acheson.
Rowland Telegraphic Company.
Western Electric Company.
John A. Roebling's Sons Company.

GOLD MEDALS

Bullock Electric Manufacturing Company.
Lorain Steel Company.
Western Electric Company.
Alvin Manufacturing Company.
National Carbon Company.
Tiffany Glass & Decorating Company.
C. J. Toerring Company.
Ward Leonard & Company.
Helios-Upton Company.
Holophane Glass Company.
Hart & Hegeman Manufacturing Company.
Edison Phonograph Company.
Western Electrical Instrument Company.
Mica Insulator Company.

DEPARTMENT OF CIVIL ENGINEERING AND TRANSPORTATION

Phoenix Bridge Company.
Boston Transit Commission.
Baldwin Locomotive Works.
Pressed Steel Car Company.
J. B. Brill Company.
Westinghouse Air Brake Company.
Standard Electric Company, of California.
American Steel & Wire Company.
The New York Air Brake Company.

Annual Report of the Brooklyn Rapid Transit

The annual report of the Brooklyn Rapid Transit Company for the year ending June 30, which has been awaited with so much expectation in financial circles, was made public Aug. 17. It was officially designated a "Preliminary comparative statement of the

Brooklyn Rapid Transit and constituent companies for years ending June 30, 1899, and June 30, 1900," and shows on a basis of the surplus of \$526,772 reported for the year's operation, about 1.17 per cent applicable to dividends on the company's \$45,000,000 of stock. The report in detail shows:

Receipts	1899	1900
Passengers	\$10,793,984	\$11,206,716
Freight, mail and express.....	36,791	61,305
Advertising	109,487	108,783
Rents	140,811	167,253
Other miscellaneous income.....	234,960	224,493
	<u>\$11,316,033</u>	<u>\$11,768,550</u>
Expenses		
Maintenance of way	\$374,947	\$415,729
Maintenance of equipment.....	983,216	882,183
Operation of power plant.....	948,749	964,665
Operation of cars	3,593,367	3,551,476
General expenses	582,175	494,530
Damages	738,837	797,790
Taxes	636,635	736,721
Net fixed charges	3,659,988	3,398,684
	<u>\$11,517,914</u>	<u>\$11,241,778</u>
Surplus or deficit	(D) \$201,881	(S) \$526,772
Surplus June 30, 1899.....		96,654

Total surplus, June 30, 1900..... \$623,426

The operations of the Kings County Elevated for June, July and August, 1900 and 1899, are not included in above, the company having been operated independently during that period.

The above figures include the full effect of the strike which occurred on July 16, 1899. The extent of injury thereby caused is partially shown by the figures for July, 1900, as compared with July, 1899, as follows:

July	1899	1900
Gross receipts	\$976,801	\$1,141,742
Expenses, including taxes	719,796	670,642
Net earnings	257,005	\$471,100
Net fixed charges	294,351	293,642
Surplus or deficit	(D) \$37,346	(S) \$177,458

CONDENSED BALANCE SHEET FOR ALL COMPANIES
June 30, 1900

Assets	
Cost of road and equipment.....	\$85,984,973.47
Additions and betterments not yet distributed....	85,773.39
Equity Brooklyn city construction.....	5,018,105.10
Equity Prospect Park & Coney Island construction.	108,426.96
Guarantee fund	4,005,755.00
Treasury bonds	5,513,000.00
Stock, B. R. T. Company.....	146,228.00
Accounts receivable	311,903.62
Prepaid insurance	34,260.51
Supplies	516,606.88
Cash on hand	1,470,287.54
	<u>\$103,195,320.47</u>
Liabilities	
Capital stock, B. R. T. Company.....	\$45,000,000.00
Capital stock constituent companies not owned by B. R. T. Company.	
Nassau pref. outstanding.....	\$448,000.00
B. U. E. pref. outstanding.....	285,646.58
B. U. E. common outstanding.....	807,027.87
	<u>1,540,674.45</u>
Funded debt—	
Sea Beach Railway Company.....	650,000.00
Brooklyn, Queens County & Suburban Railroad	6,574,000.00
Brooklyn Heights R. R. Company..	250,000.00
Brooklyn Rapid Transit Company...	7,000,000.00
Nassau Electric R. R. Company.....	15,000,040.00
Brooklyn Union Elevated R. R. Co. .	23,000,000.00
	<u>32,474,040.00</u>
Loans	1,000,000.00
Interest accrued	116,578.62
Taxes accrued	596,052.04
Rental accrued	686,140.19
Audited vouchers	641,396.85
Accounts payable	110,106.30

Real estate mortgages	226,725.00
Contingent liabilities	180,181.27
Surplus	623,425.75
	<u>\$103,195,320.47</u>

MEMORANDUM OF TREASURY ASSETS

Stock	Par Value
Brooklyn Rapid Transit Company.....	\$146,228.00
Brooklyn Heights Railroad Company.....	200,000.00
Brooklyn, Queens County & Suburban R. R. Co....	2,000,000.00
Nassau Electric Railroad Company, Common.....	8,500,000.00
Nassau Electric Railroad Company, 4 per cent. Cumulative Guaranteed Preferred.....	6,052,000.00
Brooklyn Union Elevated Railroad Company, Common	12,192,972.13
Brooklyn Union Elevated Railroad Company, Preferred	4,714,353.42
Sea Beach Railway Company.....	650,000.00
Coney Island & Gravesend Railway Company.....	35,400.00
	<u>\$34,490,953.55</u>
Bonds	Par Value
Brooklyn, Queens County & Suburban first mortgage bonds	\$2,000,000.00
Brooklyn City Railroad Company, first mortgage bonds	1,627,000.00
Brooklyn Rapid Transit Company, gold 5s.....	375,000.00
Brooklyn Union Elevated first mortgage 4-5s.....	3,111,000.00
Kings County Elevated, mortgage 4s.....	2,000,000.00
Nassau Electric, first consolidated 4s.....	27,000.00
	<u>\$43,630,953.55</u>

Grand total

Militantly British

The large orders for tramway apparatus awarded in England during the last few years to American manufacturers have had a disturbing effect upon the manufacturers of that country. Occasionally this feeling finds expression, as is shown by the following editorial appearing in one of the English engineering magazines under the title of "British Municipal Supporters of Foreign Competition":

"We are truly at a loss in what language to place before our readers an act so unpatriotic on the part of the local authorities of a British municipality, that we should refuse absolutely to believe it to have been committed had we not before us in black and white the fullest proof in the form of a document signed by the Borough Engineer of Southend-on-Sea. That the ratepayers of that town can be aware of the way in which their municipal officers are spending the rates is not creditable, and we feel convinced that the truth will be a shock to them as great as it must be to every patriotic Englishman. At this very moment, when the technical, as well as the political, press of our country unanimously endeavors to stir up our manufacturers to make a firm stand against foreign competition, and in this very hour of earnest effort to rally British producers, the Corporation of Southend-on-Sea throws into the lap of our American competitors the funds which have been entrusted to it by the community which it has the honor of representing.

"Southend-on-Sea is in want, it seems, of certain truck and car equipment for an electric trolley line, and only a few weeks ago visitors to the Agricultural Hall in London had an opportunity of seeing that such material is obtainable in our country, at reasonable prices, from industrial concerns that are exclusively British, and which spend the money they receive in our own country, employing British brain and muscle and encouraging British manufactures. What more natural, therefore, than to offer to such firms an opportunity of competing for the supply of the material required by the above-named Corporation? This is so obvious that the local authorities of Southend-on-Sea realized that, by the merest rules of decency, they were obliged to ask these firms for tenders. It is one of our best known engineering firms whom we have to thank for handing over to us the document that was sent to them. On page one of the specifications, where the Corporation describes what motors are wanted, we read as follows: "The equipment under this section *must* consist of the following apparatus and materials, inclusive of supply, delivery and fixing. Each car to be supplied with: Two Thomson-Houston G. E. 52 railway motors on ten double-deck cars; two Thomson-Houston

G. E. 58 railway motors on two bogie cars; two Thomson-Houston G. E. 800 railway motors on two single-deck cars,' etc. Why any British firm, excepting the British Thomson-Houston Company, should be invited to furnish the above-named motors is an absolute mystery, for the choice of Thomson-Houston manufactures in preference to others has obviously been made beforehand, and naturally these manufactures cannot be supplied cheaper by anybody else than the Thomson-Houston Company. Since, however, there is a British Thomson-Houston Company in existence, our readers will perhaps say that the selection, although it indicates favoritism, is at least not necessarily unpatriotic. Granted, so far; but let them read what follows on page two: 'The motors shall be of the *General Electric of America's* manufacture.' Here, then, we see that not the British Thomson-Houston Company is intended, but it is stated in so many words that no British makers need apply, not even such as are called British by courtesy, and that the goods *must* be of American manufacture. Again on page three, for instance, we find, with reference to 'Controllers,' that these also 'are to be of the series parallel type of the *General Electric of U. S. A.*' On page five, with regard to 'Trucks,' occurs the following stipulation: 'The twelve four-wheeled trucks shall be of *Brill* (21-E. type, with solid forged frame) or *Peckham extension manufacture*,' i. e., American, and 'the four bogie trucks are to be *Brill* or *Peckham maximum traction trucks*,' while 'the axles are to be of open-hearth steel of *Pennsylvania Railroad* standard, quality and test.' On the next page, finally, we read that 'four bogie *Brill* or *Peckham maximum* trucks are to be provided for,' and so on throughout the whole document. To make American manufacture, in a British municipal enterprise, a *conditio sine qua non*, and to deprive British manufacturers of even a chance of competing, is an act on the part of the local authorities of Southend-on-Sea that the patriotic ratepayers of that town—and we trust that these form a vast majority—should chastise as a gross abuse of their confidence; but to send to British firms a copy of a document of this nature, under the pretext of inviting tenders, is an action that, in the name of these firms, we feel it our duty to stigmatize as a disgrace for all those responsible for it. We most earnestly hope that never again shall we have occasion to bring to public notice a breach of loyalty to British interests so flagrant as that committed by the Corporation of Southend-on-Sea."

Experiments With Electric Traction on Trunk Railways*

BY N. H. HEFT

(Chief of electrical department, New York, New Haven and Hartford Railroad Company)

To procure such data as would enable the writer to submit a report of value to the Congress, on the above subject-matter, a list of questions was sent to all the managements of main line railways, members of the Congress. Seventeen of them replied that no experiments with electric traction had been made on their lines. The New York, New Haven & Hartford Railroad Company, Pennsylvania Railroad Company, and the Baltimore & Ohio Railroad Company replied that they had made experiments with electric traction on their main line railways, and the detailed answers of these companies may be found in the appendix.

Experiments with electric traction on main lines of steam railroads in the United States were begun in the early part of the year 1895. The managers of steam railroads were forced to take up these experiments on their systems, owing to the great inroads made in their passenger receipts, due to competition of the electric street railways, which, in some localities, amounted to 80 per cent. These street railways brought a new factor into the transportation problem, and one with which the steam railroad managers were wholly inexperienced.

With their tracks laid in the public streets of cities and extending to suburban and even interurban districts over public highways and private right of way, and, owing to their close proximity to homes and places of business, with frequent service and cheap fares, they had demonstrated that such a system of transportation was much more attractive to the traveling public than the one furnished by the steam railroads, and not only seriously affected the regular passenger business of the steam railroads, but created a pleasure traffic wholly their own. This convinced the steam railroad managers that they must turn to electric traction in order to retain their passenger traffic and compete with the light railways.

Charles P. Clark, former president of the New York, New Haven & Hartford Railroad Company, was fully convinced, as early as 1891, as shown by his report of that year to the stock-

holders, that the only effective way of checking this competition was to equip the lines affected with electric traction. He advocated equipping a branch line to demonstrate what could be done with electric traction on a standard steam railroad with a standard steam railroad equipment operated under standard steam railroad rules. This makes him the pioneer in electric traction as applied to steam railroads.

The New Haven system differs from every other important railroad property in this country, (a) in the immense volume of its passenger traffic, (b) in the large percentage of passenger revenue to total revenue, (c) in the large percentage of local revenue to total passenger revenue, (d) in the density of population in the territory served by its lines and (e) in the small area of that territory as compared with the mileage of the system. The company carried nearly 61,000,000 passengers in the year ending June 30, 1898, and the revenue amounted to over \$17,000,000 from its passenger department, equivalent to over 51 per cent of the revenue from all sources. The system provides regular transportation facilities for about 6,000,000 people, and the density of population in Massachusetts, Rhode Island and Connecticut, in which nearly all its mileage is located, is 260 inhabitants per square mile—greater than that of any other State or section in this country.

Within its territory are found the two great cities of New York and Boston, with rich suburban residential areas tributary to their business centers, five other important cities with suburbs, and no less than sixty-five independent cities and towns of greater or less importance for manufacturing or residential reasons.

Owing to the close proximity of the cities and towns in its territory, the New Haven system had been seriously affected by this competition. The gravity of the situation was such that, in November, 1894, the management of the New Haven Road authorized the introduction of electric traction on the Nantasket Beach branch, the first installation of electric traction on a standard steam railroad. This was completed May 20, 1895.

At this time the Pennsylvania Railroad Company felt the effects of similar competition, and in 1895 authorized President George B. Roberts to introduce electric traction on the Bordentown & Mount Holly branch of its Amboy division. This installation was completed in July of the same year.

In the same year the Baltimore & Ohio Railroad Company had completed its tunnel under the city of Baltimore, and, in order to avoid the objectionable smoke and gases inseparable from service with steam locomotives, they decided to introduce electric traction on their belt and tunnel lines in the city of Baltimore.

In considering the application of electric traction to main lines, railway managers are confronted with the following questions, to which the writer appends answers, based on the experience of various roads on which electric traction has been introduced:

Can electricity be substituted for steam as a motive power on main lines of steam railroads?

Yes. But the value of electric traction on main-line steam railroads is wholly dependent on the style of equipment, manner operated, location of power station, method of power distribution and train service, and distribution of population in territory covered.

Can a main line so equipped be operated under the same rules as govern on standard steam roads?

Yes. The New York, New Haven & Hartford Railroad Company is operating by electric traction 6.95 miles of double track, overhead trolley, from Nantasket Junction to Pemberton, 11.51 miles of double track third rail from Braintree to Cohasset, 3 miles of double track third rail from Berlin to New Britain, 18.6 miles of single track third rail from Hartford to Bristol, and 8 miles of single track, overhead trolley, from Stamford to New Canaan.

The Pennsylvania Railroad Company is operating 8 miles of double track, overhead trolley, from Bordentown to Mt. Holly.

The Baltimore & Ohio Railroad Company is operating 4 miles of double track, overhead trolley, in the city of Baltimore.

All the lines named above are operated under the same rules as govern the operation of steam trains on the other portions of the systems.

(a) Schedule speed has been maintained during times of heavy travel and frequent service.

(b) Train service has been reliable, and to a certain extent trains have been able to make up time.

Can same weight of train be operated?

Yes. Trains of the same weight have been operated by the three following methods:

(a) By using specially designed locomotives, as is done by the Baltimore & Ohio. This method has the disadvantages of great concentration of weight on roadway, and low efficiency when operating light trains. Where the service is infrequent or largely of freight, or where it covers a section of main trunk line through

* Abstract of paper to be presented at the International Railway Congress, Paris, Sept. 20-29.

service, such as that on the Baltimore & Ohio Railroad, then this equipment is the most desirable.

(b) By equipping standard passenger coaches with motors on one or both trucks and using these cars as locomotives to haul passenger trains. This style of equipment is used on the Highland, Hartford and Plymouth divisions, and New Canaan branch of the New York, New Haven & Hartford Railroad Company; also on the Bordentown & Mount Holly branch, Amboy Division of the Pennsylvania Railroad Company. Where the service is frequent and light, schedule speed moderate and station intervals sufficient to allow trains to reach full acceleration it has been demonstrated that this service can be operated satisfactorily. The simplicity and low first cost make this equipment desirable for this service.

(c) By equipping all or part of the coaches with motors mounted on motor trucks and operating them in trains controlled from the first, or any of the motor cars, as is done on the Alley Elevated Railway in Chicago. Where the conditions of operation require the maintenance of high schedule speed with frequent stops the problem resolves itself into one of acceleration and braking. These conditions are found mostly on the elevated railways of our large cities.

Can existing train schedules be maintained?

Yes. The service operated by electric motors on the Nantasket Beach branch of the New York, New Haven & Hartford Railroad Company during the summer of 1897 was the fastest ever operated over this branch, and one that could not have been operated with steam locomotives, as was frequently demonstrated during that year. This service is shown by the following official schedule.

Comparative speed of steam and electric trains on the Nantasket Beach branch of the New York, New Haven & Hartford Railroad Company.

	Length of Line	No. of Stations	Schedule Time	Average Speed
Steam, 1894.....	6.95 miles.	10	25 to 35 minutes	16.7 to 11.9 M. P. H
Electric, 1897....	6.95 —	16	21 —	19.8 M. P. H.

Can stations be added without loss of schedule speed?

Yes. (See Appendix.)

Can a train of a given weight be accelerated more rapidly?

Yes. Owing to the steady torque of electric motors, at least 15 per cent of the weight on drivers is available for starting effort.

The test of the Baltimore & Ohio electric locomotives, which weigh 96 tons each, have shown a draw-bar pull of 60,000 lbs. on a dry rail, corresponding to a traction coefficient of over 30 per cent. Tests on a steam freight locomotive with 146,000 lbs. on drivers show a maximum draw-bar pull of 30,000 lbs., corresponding to a traction coefficient of 20 per cent or two-thirds of that developed by the electric locomotives.

A standard combination coach on the Plymouth division of the New York, New Haven & Hartford Railroad Company, equipped with four motors of 175 hp each, aggregating 700 hp and weighing complete 50 tons, developed 12,000 lbs. with an overload on the motors of only 25 per cent. Allowing a starting effort of 300 lbs. per ton weight of train, such a car could accelerate to a speed of 30 miles per hour in ten seconds, or allowing 90 lbs. per ton weight of train, could accelerate a train 130 tons to a speed of 30 miles per hour in thirty seconds.

A train of individual coaches each completely equipped with motors on all axles, operated from one control, would give the maximum acceleration possible, *i. e.*, that of a single unit with 100 per cent of its weight on the drivers.

Can an effective system of brakes be applied?

Yes. The Pennsylvania Railroad Company uses the full Westinghouse air-brake equipment; the Baltimore & Ohio Railroad Company uses the Westinghouse; the New York, New Haven & Hartford Railroad Company uses the Westinghouse and the Christensen brake with satisfactory results.

How will the electric air compressor compare in reliability and economy with the steam air compressor?

The Westinghouse, General Electric Company and Christensen air compressors have all proved reliable and fully as economical. The compressor, when using motors under car bodies, is placed on the platform of the open, in the baggage compartment of the combination and suspended under the closed coach, thereby allowing the motor car to be operated either as a single car or as a locomotive for drawing trains.

Can trains be provided with equally satisfactory train signals?

Yes. Whistles of the same power are blown from the air-braking reservoirs, and have proved satisfactory. Locomotive bells or

heavy gongs are placed on cars and rung either by foot or hand power.

Can motor cars be equipped with pilots and headlights, complying with the statutory rules and regulations governing railroads?

Yes. The pilots can be attached to truck or coach body. Both electric and oil headlights are used, and are satisfactory. The New York, New Haven & Hartford Company uses oil in place of electric lights, owing to the loss of current when passing over grade crossings, where the third-rail conductor is cut out.

Can trains be operated over third rail during snow and ice storms?

Yes. The operation of the third-rail section of the Highland division of the New York, New Haven & Hartford Railroad Company during the last two winters has proved that passenger coaches equipped as electric locomotives, with nose plows and brushes, can handle snow as efficiently as steam locomotives with plows. The third rail is kept clear of snow by steel brushes mounted on the trucks ahead of the contact shoes. Ice, which gathers on the third rail during sleet storms, has proved more difficult to handle. Experience on this same division has shown that the use of a zero oil sprinkled on the third rail from the trains prevents the ice from freezing to the rail, so that it can be removed by the stiff steel brushes.

How will cost of operation be affected by more frequent service of lighter trains?

The service on the Highland division of the New York, New Haven & Hartford Railroad Company is frequent, with light trains, while the service on the Berlin branch is not so frequent and with heavier trains. A fair answer to this question will be a comparison of the train miles run on each branch and the cost per train mile.

- Daily train miles, Berlin branch = 66.
- Daily train miles, Highland division = 737.
- Cost per train mile, Berlin branch = 30.3 cents.
- Cost per train mile, Highland division = 12.5 cents.

How will cost of operation be affected by the form of power transmission?

- (a) By overhead or underground trolley?
- (b) By simple or sectional third rail?
- (c) By direct or alternating current?
- (d) By static or rotary transformers?
- (e) By direct or alternating current motors?

The local conditions govern the form of power transmission.

(a) The overhead trolley form has proved to cost more to install and maintain than the simple third rail, and to be less economical to operate. The first cost of the underground trolley and the difficulties encountered in draining make its use prohibitive on main railways.

(b) As the simple third rail, charged throughout its length, has been the only form in use on main lines, no data as to the economics of the sectional or safety third rail can be obtained.

(c) On main railways, where the distribution of power does not exceed a distance of 10 miles to 15 miles, the direct current has proved economical. In lines where power must be transmitted over a greater distance than 10 miles to 15 miles the alternating current should be used.

(d) When alternating-current motors can be designed to give a satisfactory starting torque, then alternating currents may be transmitted from the central stations through static transformers direct to the motors. At present transmission with alternating currents requires the use of rotary converters for conversion to direct current when delivered to the working conductors.

(e) When the development of the alternating-current motor shall enable it to compete with the direct current, then there will certainly be a large saving for transmission over long distances, and the equipping of main trunk lines will follow.

How will cost of motive power per train mile with motor cars compare with steam locomotives?

A comparison of the figures obtained from the operation of the several power stations, and from the performance sheets of steam locomotives of the New York, New Haven & Hartford Railroad Company, shows the cost of motive power per train mile to be as follows:

- Steam locomotives = \$0.19 to \$0.24.
- Highland division = \$0.0604.
- Nantasket Beach branch = \$0.1441.
- New Canaan branch = \$0.0783.
- Berlin branch = \$0.1406.

The cost of electric motive power shown above includes the operation and maintenance of power stations, the maintenance of motors and other equipment on the cars, oil, grease and waste used on the cars, and the wages of the motormen who operate the cars. The cost of steam motive power includes fuel, oil and waste,

maintenance of locomotives and the wages paid the men who operate the locomotives.

How will cost of operation per train mile with motor cars compare with steam locomotives?

The total cost of operation per train mile with electric motor cars (excluding interest and depreciation) on the New York, New Haven & Hartford Railroad is as follows:

Berlin branch = \$0.3032.

Highland division = \$0.1255.

Nantasket Beach branch = \$0.2925.

New Canaan branch = \$0.1754.

Figures for operation with steam cannot be obtained.

How will cost of train labor compare?

Cost of train labor per train mile as shown from operation with electric traction on lines of the New York, New Haven & Hartford Railroad Company is as follows:

Train labor Berlin branch = .18.

Train labor Highland division = .027.

Train labor Nantasket Beach branch = .0829.

Train labor New Canaan branch = .063.

Train labor with steam, per train mile, about .12.

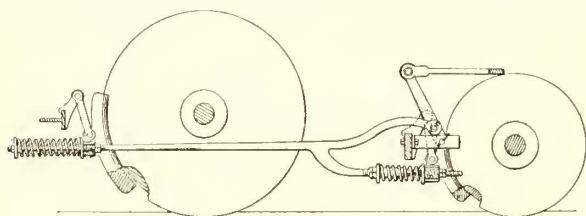
(To be Continued.)

Street Railway Patents

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

UNITED STATES PATENTS ISSUED AUG. 14, 1900

655,682. Car Seat; F. Bennett, New York, N. Y. App. filed Dec. 20, 1897. The back and seat are so connected through suitable levers that when the former is swung from one side to the other the seat will be shifted slightly in the opposite direction.

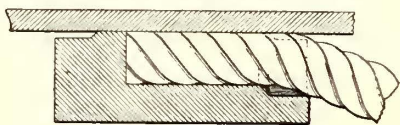


PATENT NO. 655,754

655,738. Car Spring; W. Robinson, Boston, Mass. App. filed Dec. 31, 1896. An arrangement of light and heavy springs intended to make the riding equally easy whether the load be light or heavy.

655,754. Differential Brake Mechanism; J. A. Brill and W. S. Adams, Philadelphia, Pa. App. filed March 3, 1897. This is a brake mechanism for applying different braking stresses to the large and small wheels of a truck having large driving wheels and small guiding wheels.

655,771. Car Seat; M. N. Forney, New York, N. Y. App. filed April 13, 1899. When the back is reversed, two oppositely located foot-rests are reversed at the same time.



PATENT NO. 656,125

655,839. Car Step; J. B. Thacher, Albany, N. Y. App. filed Oct. 20, 1899. Two steps are arranged so that the lower one must be entered by the passenger moving at right angles to the length of the car, while the next one is entered by moving parallel to the length of the car.

655,863. Sand-Box for Cars; A. W. Ham, Lansingberg, N. Y. App. filed Feb. 26, 1900. Two distributing spouts of different capacities, with mechanism for controlling each, are used.

656,030. Trolley for Electrically Driven Vehicles; L. Lombard-Gerin, Lyons, France. App. filed Jan. 9, 1900. An automotor-trolley, comprising an apparatus provided with a shaft having contact-rollers adapted to travel on conductors insulated one from another, the said apparatus having a motor possessing a fixed inductor and a movable armature, the periphery of which directly actuates friction-rollers on the shaft of the contact-rollers.

656,125. Bond for Track Rails; H. F. A. Kleinschmidt, Johnstown, Pa. App. filed Dec. 28, 1899. The end of the bond is placed in a groove in a metal block and then welded thereto.

656,133. Truck-Wheel and Armature Exchange for Street or Other Railway Cars; W. H. Cornner, Anderson, Ind. App. filed Nov. 23, 1899. A track passing over a pit is provided with a movable section arranged to be lowered and raised in the pit for the purpose of facilitating the mounting of parts of the car.

11,845. Reissue; Pneumatic Device for Clearing Railway Track Sanding Pipes; J. H. Hanlon, Boston, Mass. App. filed Sept. 19, 1899. Means are provided for directing a blast of air through the discharging nozzle of the sand-box, in order to clear it out.

PERSONAL MENTION

MR. E. G. LONG, of the Peckham Truck Company, has returned from a business trip to Europe.

MR. EVERARD HOLMES has been elected secretary and treasurer of the Interstate Consolidated Street Railway Company, with office at Pawtucket, R. I., to succeed Mr. E. R. Price, who resigned June 30.

MR. A. C. THOMPSON, of St. Louis, has been appointed superintendent of the St. Louis & Belleville Traction Company's lines between Belleville and East St. Louis, vice Mr. Thomas M. Sneed, who resigned several months ago.

MR. THOMAS NEELY has resigned as general superintendent and chief electrician of the Vicksburg, Miss., Railroad, Power & Manufacturing Company to accept a similar position with the Meridian Street Railway & Power Company, of Meridian, Miss.

NEWS NOTES

[News notes for this department are solicited.]

DENVER, COL.—The Denver City Tramway Company will make alterations and build an addition to the depot at Broadway and Alameda Avenue for the purpose of establishing a club room for the employees. A reading room and gymnasium has been established by the company in North Denver. The building on Broadway is 38 ft. x 50 ft. and is built of brick. The addition will cost \$1000. Magazines and papers will be kept on file, and there will also be a small library.

HARTFORD, CONN.—The conductors and motormen of the Hartford Street Railway Company have been furnished with new cap medallions. Those for the conductors have black letters on a white ground and a border of gold. The motormen's medallions have white letters on a black ground and the border is of silver. The figures and background of each are of enameled leather. They are larger than the kind formerly in use and much more attractive. The employees deposit 75 cents with the company when they receive a medallion, and when they leave the service of the company they return the article and get their 75 cents back.

WASHINGTON, D. C.—There was a rear-end collision of two cars of the Great Falls line of the Washington Traction & Electric Company a few days ago. A number of passengers were slightly injured.

WASHINGTON, D. C.—About sixty new cars have been ordered by the Washington Traction & Electric Company. They will be unlike any now in use in that system. The body will be 28 ft. long, with cross seats. The window sills will be low, so that in summer the sashes can be lowered, with the effect of an open car, and in this way the same car can be available for all-the-year-round service.

ATLANTA, GA.—The lines of the Atlanta Railway & Power Company were tied up for two and one-half hours on Aug. 12. The suspension of traffic was caused by the burning out of an armature of one of the large machines in the company's plant and by the demolition of an overloaded engine which was making an effort to supply power to handle a sudden rush.

MUSCATINE, IA.—The Muscatine Electric Railway Company has submitted a proposition to the City Council offering to expend \$100,000 in improving its property and extending the lighting and railway service provided the city will grant the company a ten years' extension of the lighting contract and a twenty-five year extension of the railway franchise. The company, if granted the desired franchises, will obligate itself to expend every dollar of the sum specified, the intention being to put in an entirely new power plant at a cost of \$75,000, a new gas plant to cost \$15,000, and two extensions of the electric railway line, and further agrees to erect a pavilion in Weed Park to cost between \$4500 and \$5000, with a seating capacity of 500, and adapted for use by dancing parties, comic operas, and summer attractions of various kinds.