



WEEKLY NEWS ISSUE

SATURDAY, OCTOBER 27, 1900.

PUBLISHED WEEKLY BY THE STREET RAILWAY PUBLISHING COMPANY

MAIN OFFICE: NEW YORK, BEARD BUILDING, 120 LIBERTY STREET.

BRANCH OFFICES:

- CHICAGO.....Monadnock Block
PHILADELPHIA .....929 Chestnut Street
LONDON.....Hastings House, Norfolk Street, Strand

Correspondents in other Principal Cities of the World.

Long Distance Telephone, "New York, 4044 Cortlandt."
Cable Address, "Stryjourn, New York."—Lieber's Code used.

TERMS OF SUBSCRIPTION.

Table with 2 columns: Location (United States/Canada vs Foreign Countries) and Price (\$4.00 vs \$6.00 with quarterly breakdown).

Subscriptions payable always in advance, by check (preferred), money order or postal note, to order of C. E. WHITTLESEY, Treasurer.

Entered as second-class matter at the New York Post Office.
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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 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.

Address all communications to THE STREET RAILWAY PUBLISHING CO., 120 Liberty Street, New York.

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The Convention Report

Following our usual custom, a complete report of the convention of the American Street Railway Association, held last week, will be published in our November issue, published the first Saturday in November.

N. Y., N. H. & H. R. R. to Extend Third-Rail System

President Hall, of the New York, New Haven & Hartford Railroad, announces the success of the third-rail system between Hartford and Bristol, Conn., and states that it will be extended to Waterbury in a few months.

New Interests in B. R. T.

The New York Times is authority for the statement that a majority of the capital stock of the Brooklyn Rapid Transit Company has been bought by Metropolitan Street Railway interests, and that new directors are to be elected.

New England Steam Roads to Build Trolley Lines

The directors of the Boston & Maine Railroad and the directors of the Concord & Montreal Railroad have voted to build a branch electric railway from Concord through Pembroke, Suncook, Allenstown, Hooksett, Manchester, Goff's Falls and Litchfield to Hudson, connecting with the Nashua Street Railway at Lowell Street in Hudson and the Concord Street Railway at Pleasant Street in Concord.

Conductors Not Required to Change Bills Larger than Five Dollars in Seattle

Judge Jacobs, of Seattle, Wash., has just handed down a decision which says that a street car conductor cannot be required to change a bill or other negotiable note of more than \$5. The decision upholds the company in a suit brought by a passenger because he was ejected from a car after tendering a \$10 bill in payment of his fare.

The Birmingham Consolidation

At a meeting of the stockholders of the Birmingham Railway & Electric Company, of Birmingham, Ala., held Oct. 17, the consolidation of the properties of the company with the recently acquired street railway lines was accomplished.

Mr. Yerkes Returns

Having successfully completed the last details in connection with the purchase of the Charing Cross, Euston & Hampstead Railroad Company, Mr. Yerkes has returned to America.

way, etc., no work having ever been done on the line. Before leaving London, Mr. Yerkes announced his plans regarding the project as follows: "We shall build the line from Charing Cross to Hampstead, with connections to Euston, Paddington, and perhaps Victoria. The construction and equipment will be of the same general design as that of the Central London Railway. There will also be a connecting station with the latter line. But in doing this we provide only what we hope will prove to be the trunk line of a system of suburban rapid transit. The chief desire is to bring a large territory north of London within easy residential distance of London workers of all classes. To accomplish this we shall seek to provide surface electric lines radiating in all directions from our northern terminus as a common center. It is this plan which has been the main feature and the most successful one of our Chicago system. We opened up the prairie for 40 miles around Chicago by this means. The same system of rapid transit would do for London or for any other congested city all that it has done for Chicago. No, I do not contemplate doing for South London or the East End what we are about to undertake toward the north. One enterprise of this magnitude is sufficient. If it succeeds, the demonstration will speedily bear fruit and similar facilities will be provided for other quarters of the metropolis."

### Light Railways and Electric Railways in Italy

A recent report of the Italian Inspector-General of Railways gives a list of tramways operated in Italy by mechanical power, the aggregate length of the lines on Jan. 1, 1900, being 1830 miles (3179 km.). By governmental regulation the term "tramway" is applied to all lines installed on streets and highways, and thus includes short lines of steam road, which ordinarily would be termed light railways. We consequently find that the greater part of the mileage quoted consists of lines operated by steam power, the aggregate length of electric roads being only 147 miles (246 km.).

The first light railway was installed in 1878, between Coni and Borgo San Dalmazzo, the length being 418 miles (8 km.). The following year a line 39 miles long (65 km.) was authorized to be laid between Bari and Barletta, but it was not until after 1880 that the development gathered strength.

Four-fifths of the mileage now operated lies in the three provinces of Lombardy, Piedmont and Emilie. A number of provinces have no railways of the class considered, and Sicily and Sardinia have each only one line.

The electric roads, with a few exceptions, are confined to urban lines in Turin, Milan, Genoa, Rome, Florence, Leghorn and Palermo. Turin comes first on the list, with 30 miles of road (50.3 km.), and Milan second, with 29 miles (48.4 km.). The maximum speed of electric traction is fixed at 7 miles to 10 miles per hour, and that of the steam tramways at from 11 miles to 12 miles, though in several instances a higher speed has been allowed, the maximum being 17 miles.

There are numerous projects for the installation of new electric lines, and for the displacement of steam by electricity on light railways. In view of the abundant water powers of the Italian peninsula, and the apparent readiness with which capital has been secured to carry out some of the plans for the operation of northern Italian railroads by electrical energy transmitted from hydraulic generating plants, it appears quite probable that Italy is on the eve of a considerable development in electric traction.

### Two Meetings of the New England Street Railway Club

At the regular meetings of the New England Street Railway Club, held at the Pathfinder Meeting Rooms, 67 Federal Street, Boston, on Sept. 19 and Oct. 17, the subject of snow plows and how to keep the tracks clear during heavy snow storms was discussed. At the opening of the discussion on Sept. 19 the secretary read a letter from Arthur W. Field, the New England representative of the Peckham Motor Truck & Wheel Company, who had been invited to be present, to explain the merits of the Ruggles rotary snow plow, which is manufactured by the Peckham Company. Mr. Field stated in his letter that the rotary snow plow was designed for heavy snows, and to be used as an auxiliary to the horse or push plows.

After the letter was read, the president asked if any superintendent was present that had any experience with the rotary plow, if so the members would like to hear from him.

Mr. Wolcott, of the South Shore & Boston Street Railway Company, gave a very interesting account of the results obtained by his

company through the use of this type of plow, his remarks being summed up as follows: He began to look up rotary snow plows about two years ago, but it being quite near spring, the subject was side-tracked. The next summer his company bought two of these rotary plows. Last winter was a very open one, there being but one severe storm, and there was but little chance to make a fair test of this new equipment. After this storm the company had from 70 miles to 75 miles of track to open, of which some 30 miles were left tied up. On the following morning were started the two rotary plows to work, and in five hours the line was open and the cars running. The company left a mile closed for experimental purposes, and the next day worked a little while on it, and so on for three days before this mile was opened. Every day the snow thawed, while the teams kept driving over it; it kept getting harder and harder, but no trouble was found in taking it out with the rotary plow.

In answer to a question, Mr. Wolcott said that by the adjustment of the wings it is possible to throw the snow on either side of the street, or anywhere they might wish to put it, from 3 ft. to 20 ft. from the rail. No trouble was experienced in heavy snow banks. One heavy drift was about 8 ft. high on the track, and 10 ft. on one side, and about 150 ft. long, and it took but ten minutes to go through it. The plows made an average of from 4 miles to 5 miles an hour through 3 ft. to 4 ft. of snow. The day after the storm the Selectmen came down to break the street through for teams, and wanted to know what the company had done with the snow. Mr. Wolcott said that one rotary snow plow to 25 miles of track in a suburban district would keep the road open. Mr. Wolcott replied to several questions relative to the subject, and his remarks were received with great satisfaction by those present who had never seen one of the plows working.

A vote of thanks was tendered the Rand Avery Supply Company for the use of its rooms for the meeting, and for other courtesies extended to the club.

The meeting was adjourned until Oct. 17, when it was announced that lunch would be served after adjournment, and the subject of other types of snow plows would be discussed.

#### MEETING ON OCT. 17

The meeting of the club on Oct. 17 was the most successful held. Forty-eight superintendents and others interested in street railways were present. The meeting was called to order by the president, who made a few remarks regarding the large attendance, after which the records of the previous meetings were read by the secretary and approved.

The president then introduced E. C. Spring, superintendent of the Newton & Boston Street Railway, who had been asked to open the discussion on plows. Mr. Spring said that he firmly believed that there was a diversity of opinion among the street railway men as to the best method of handling snow. In this matter local conditions play a most important part. It was clearly shown at the last meeting that on suburban roads the rotary snow plow works very satisfactory, while in the crowded section of a city the nose or shear plow is the best. He continued:

"I am sure that if any superintendent intends to purchase a snow plow or sweeper, it would pay him well to study carefully the articles that have appeared in the STREET RAILWAY JOURNAL and the *Street Railway Review* from time to time during the past nine years. These articles not only show how the different companies handle snow in various parts of the country, but they give the opinion of the operating managers in many cases as to the plow or sweeper best adapted to their road; many of the roads building a plow of their own. I believe that it would be an excellent idea for the club to make a digest of these articles and other information that can be obtained on the subject for the benefit of the superintendents of New England who cannot afford the time to look up themselves the valuable information that is contained in these articles. This is where our club can be of assistance to its members.

"I have made up the following schedule from letters received from the different New England street railway companies in regard to the manner in which they handle snow:

"The Southbridge & Sturbridge Street Railway Company has 8 miles of track, very heavy grades, and two single-truck plows. These plows are equipped with salt and sand boxes, as are the cars. As soon as the snow begins to fall heavily the company applies a mixture of salt and sand, then follows this up with the plows, men being stationed at heavy drifts to shovel away the banks. The company has also a car follow the plow. Practically the entire system is on the side of the street. The cars are also equipped with track cleaners, which are found of great service in snow storms.

"The Torrington & Winchester Street Railway Company, of Connecticut, has 11 miles of track of which 2-5 are located on the side of the street with a maximum grade of 8 per cent. The com-

pany has two plows, which are kept going during a storm with good results.

"The Meriden, Southington & Compounce Tramway Company, of Meriden, Conn., has 15 miles of track, which lie through an open country, where heavy drifts are frequent during a storm. This company has only one plow.

"Mr. Ogden, of the Worcester & Clinton Street Railway, has 20 miles of track under his charge. This certainly must be a hard road to keep open during the winter, as it stretches for some distance along the Wachusetts Water Basin, with no protection from the wind. He states that he has three plows and one sweeper, but he suggests that an improvement could be made on the nose of the plows, which would lift the snow and throw it away in the manner of the plows attached to steam engines.

"The Milford, Holliston & Framingham Street Railway Company operates 22 miles of track, and has three plows in service. About three-quarters of this system is on the side of the street, with very heavy grades. During a snow storm salt and sand are distributed by the plows with very satisfactory results.

"The Norwalk Tramway Company, South Norwalk, Conn.: Mr. Mansfield states that they have two heavy nose plows of their own make, and two nose plows which are attached to the front of the regular cars. They have 20 miles of track, with from 8 per cent to 10 per cent grades. In snow storms they first use horse levelers to keep the banks fully 10 ft. from the track, and then follow up with the plows. Mr. Mansfield states that they have very little snow along the Sound on account of being so near the salt water, and he has known cases where it has frequently snowed hard 5 miles inland, or north, while it has rained in Norwalk.

"The Sanford & Cape Porpoise Railway Company, Sanford, Maine, has 23 miles of track, all of which practically is located on the side of the road. This company has two plows, and a heavy freight locomotive, with ordinary locomotive steel nose. This locomotive has four 38 B Westinghouse motors, and does the most satisfactory work in snow of anything with which the company is acquainted.

"The Meriden Electric Railroad Company, of Connecticut, has 19 miles of track, with varying grades. The snow equipment consists of two nose plows, one shear plow and one sweeper; the shear plow is used for double track, and the nose plow for single track. Mr. Bristol, the superintendent, says that a plow should be designed to suit the local conditions. An independent salt and sand car is run continuously during a snow storm.

"The Lexington & Boston Street Railway Company has not yet experienced any storms, as this line was not in operation last winter, but it has already purchased four plows to take care of 25 miles of road. Mr. Greene, its superintendent, believes in starting the plows with the commencement of the storm, and to keep them, as well as the cars, running if sufficient power is available. He also believes in running an independent sand and salt car.

"The Norwich and the Montville Street Railway, of Norwich, Conn., has four nose, one shear and one rotary plow. Out of the 28 miles of track 24 miles are located on the side of the street. In some places the grades are as heavy as 12 per cent, and the average is 8 per cent. The company considers the shear plow in light snow, and the nose in heavy snow best adapted for the work. All the cars have sand boxes. The company does all its salting, except at switches, from plows.

"The South Shore & Boston Street Railway Company has 70 miles of track, of which 90 per cent is on the side of the street, with a few heavy grades. It has nine nose plows and two rotary. Mr. Wells, the general manager, states that the company spares no expense in keeping the tracks clear during a storm, if possible. In the worst places sand and salt are used.

"The Interstate Consolidated Street Railway Company operates 26 miles of track, two-thirds of which are located on the side of the street, with moderate grades. The company has five single plows, and one four-motor plow.

"The Leominster & Clinton, the Fitchburg & Suburban, the Worcester & Clinton and the Clinton & Hudson have 38 miles of mostly side construction, four plows and one sweeper. Sand and salt are used in the worst places. The manager depends on his nose plows for severe work. The average grade is 7 per cent, but there is one point on the Fitchburg Suburban, where the grade is 13 per cent for 600 ft. This is kept clear by shoveling. The company believes in starting its plows promptly and keeping up with the storm."

The following articles have appeared in the *STREET RAILWAY JOURNAL* and the *Street Railway Review* since 1892, in reference to the handling of snow, and the make and type of plows and sweepers used:

[STREET RAILWAY JOURNAL]

October, 1892, and August, 1894.—Electric sweepers built by the Brooklyn Railway Supply Company, of Stamford, Conn.

April, 1892.—A good account of a heavy snow storm at Quincy, Mass., which commenced March 1, and lasted until March 4. The article is illustrated.

March, 1892.—An article as to how the Ottawa Electric Railway Company handles snow storms.

January, 1892.—An article showing a plow that can be attached to any car, made by the Wales Manufacturing Company, of Syracuse, N.Y. There are no wheels on the plow, but the forepart rests upon the rail by means of a heavy half-round shoe or boiler plate, which slides along the rail and allows the plow to pass over frogs, switches, crossings, etc.

February, 1894.—"A Model Snow Plow."

April, 1894.—An article in reference to an electric locomotive, which is in use on the Sanford & Cape Porpoise Railway Company, Sanford, Maine.

January, 1895.—An illustrated article in reference to a plow manufactured by the White Manufacturing Company, of New York, as designed by L. J. Hirt, formerly master mechanic of the West End Street Railway Company. This plow is constructed wholly of steel, with the exception of the cab, in which the motor is hung on an independent cradle. It takes two men to operate the plow—one to operate the motor and the other the plow shears. It is provided with a complete walkabout, enabling the man to walk to any part of the car without dismounting. I believe the West End or Boston Elevated has some in use on its system.

January, 1895.—A reversible snow plow which was in use by the Pennsylvania Traction Company, of Lancaster, Pa., and designed by the master mechanic of the company. It is claimed that it was very satisfactory.

January, 1895.—An article in reference to the Taunton Nose Plow.

March, 1895.—"A Home-Built Snow Plow," by E. E. Knowles, superintendent of the Spokane (Wash.) Street Railway Company. This article is very interesting with illustrations of the plow at work during a heavy snow storm in a suburban country district.

May, 1895.—"A Home-Made Sweeper," by I. B. Walker, superintendent of the Sioux City Traction Company, which is well worth reading.

April, 1895.—An article in the *JOURNAL* shows the results of a rotary snow plow on the Rochester Street Railway during the winter of 1894. Another good account is given of the plow in the issue of October, 1896.

February, 1897.—There is a fine article in the *JOURNAL* from James H. Bates with reference to cleaning snow from the tracks.

March, 1897.—A description of a snow plow designed by the chief engineer of the Galesbury Electric & Motor Power Company, of Galesbury.

February, 1898.—A description of a plow built by J. G. Brill for the Portland Street Railway Company, Portland, Maine.

March, 1898.—A description of a Taunton Plow for the Portland & Cape Elizabeth Street Railway Company, Portland, Maine.

December, 1898.—A substitute for salt for removing snow. It is a composition called "Triple Chloride," and can be applied by an ordinary sprinkling pot. It is claimed by the manufacturers that it has less corroding effect upon the iron and copper than salt. It is manufactured by the Fitch Chemical Company, Bay City, Mich.

January, 1899.—The method of keeping the tracks clear of snow in Detroit is described. Each car can be fitted with a 2-ft. x 10-ft. board, carried on the rear end of the truck frame. With light snows every fourth or fifth car is equipped with this board. With a heavy snow all cars carry them. The cars travel in a loop so that the board always remains under the rear platform.

February, 1899.—The methods employed in Newport, R. I., are described.

May, 1899.—The practice in Montreal of using rotary plows is the subject of a communication. These plows cut their way through drifts 10 ft. high.

August, 1899.—An article on the practice in Quebec. Here the main dependence is on sweepers.

May 5, 1900.—This article gives a description and news of the latest type of snow plow used by the Boston Elevated Railway Company, and made by the Taunton Locomotive Manufacturing Company.

Sept. 1 and Oct. 13, 1900.—The new snow plow of the Taunton Locomotive Manufacturing Company is described.

Sept. 29, 1900.—This number contains a full report of the recent Buffalo convention of the New York State Street Railway Association, in which an extended discussion was held on snow plows. [Mr. Danforth's paper on this subject appeared in the *STREET RAILWAY JOURNAL* for Oct. 20.]

[Street Railway Review]

December, 1893.—An article in reference to a reversible snow plow, built by Fleming Manufacturing Company, Fort Wayne, Ind.

January, 1898.—A description of a snow plow built for the Portland Railway Company. This is referred to in the February, 1898, edition of the *STREET RAILWAY JOURNAL*.

February, 1898.—An illustrated article regarding a car that was built for salting the tracks when the rails are covered with sleet. It also has a plow attached, which can be easily removed, and the car used for construction purposes.

January, 1899.—In this issue there is quite an extensive article of the snow storms in Denver, and photographs of the different types of plows and sweepers.

January, 1899.—"Removing Snow in Various Cities." This is an article compiled after receiving letters from different parts of the country, and has illustrations of various types of snow plows.

March, 1900.—An article in regard to a snow plow built by the Orono & Old Town Railway Company, of Bangor, Maine, which they say proves very satisfactory. The article is illustrated.

March, 1899.—An account of the way the Chicago Suburban roads handle snow. These roads run through strips of prairie country, and the handling of snow is a serious question. In the same issue there is an article from the Metropolitan Railroad Company, Washington, D. C., regarding severe storms. They state that in many places along the line the slot had been closed with solid ice. In such cases gasoline was sprinkled and burned out.

THE PRESIDENT.—I understand that Mr. Bodwell, of the Sanford

& Cape Porpoise Railway Company, which operates electric locomotives on its road, is here with us, and we should certainly like to hear from him.

MR. BODWELL.—We have one heavy nose plow, with wings, and two freight locomotives with steam locomotive fronts. One is equipped with two No. 3 Westinghouse motors, and the other with four 38 B. We use the freight for keeping the road open, and the snow plow for throwing back the snow. We find the four-motor equipment, with double trucks, to be the best we have for going through snow. We do not mind having two sets of wheels insulated by either snow or ice, as the other two sets will give us both the traction and power required to go through the snow. We have gone through sleet storms with  $\frac{3}{4}$ -in. of ice on the rail with very little trouble. We also have two trolleys on the locomotive; one will break the ice on the trolley wire, and the other gives us the power. The road was not blocked at any time during the winter, and our bill for handling 24 miles of single track was \$500.

MR. HENDERSON, of the Newton Street Railway Company.—In the early days of electric railroading it was hard to tell what kinds of plows were the best to adopt, and I must admit that my first plow was entirely inadequate for the demands put upon it. It was built after the old cheese box plan, a square house containing two F 30 motors, mounted upon the deck of a small flat car, and operated by means of the sprocket chain. At this time I was an earnest advocate of a plow with inclosed deck, with motors mounted upon the axles. I had one built according to my ideas, and have used it up to the present time, and it has proved its value in all the storms. We now have two nose and two shear plows, the latter being built by the Wason Company, which has embodied many features which are, to my mind, desirable and useful. This plow, with its wings, does remarkable work in heavy storms. The secret of keeping a track clear in a snow storm is a combination of plenty of power, the preparing of the rails in advance through the work of sand cars, thus securing traction when most needed, and good working plows. We are required by the city officials to remove from the streets all surplus snow, and with great promptness. This is really the most costly part of a storm, but by working in harmony with these officials this can often be reduced, and it is often possible, except in the strictly business sections, to have the streets in a satisfactory condition through the aid of the plow and levelers.

THE PRESIDENT.—I should like to hear what Mr. Shepard, of the Lawrence & Reading Street Railway Company, has to say on the subject.

MR. SHEPARD.—I think that I am about the oldest snow fighter around this section, having been at it for the past eighteen years, and I have used about every plow there is on the market. For several years past I have used the Wason plow, and its work has been very satisfactory, needing very little repairs. I have also been using for the past two years a small plow attached to the ends of the box cars, which does excellent work in light snow. This plow is made by using two  $1\frac{1}{4}$ -in. x 6-in. x  $5\frac{1}{2}$ -ft. pieces of plank, joined together "V" shape, reinforced at the point with a  $\frac{1}{8}$ -in. band of iron the full width of the plank, and running back about 8 ins. At the rear end of this "V," iron scrapers, the same as are usually used, are attached, and the whole is hung to the car platform with the same arrangement as is used in hanging the Dorner & Dutton scraper. I have been using these plows with single truck cars, but I am going to use them on double-truck cars this winter, and if any of my brother superintendents would like to see this small plow on the cars I would be pleased to show them, if they will give me a call.

THE PRESIDENT.—Mr. Pierce, president of the Fitchburg & Suburban Street Railway Company, is here to-night, and we would like to hear how he handles snow along that piece of track, with its 13 per cent grade.

MR. PIERCE.—As president of the Laconia Street Railway Company, Laconia, N. H., I had an opportunity to learn the way that L. H. Pierce, its superintendent, handled the snow storms there. He always worked in harmony with the superintendent of streets, who leveled the snow, and then rolled it with a large roller after it had been thrown from the car tracks. In fighting snow storms on the Fitchburg & Suburban and the Leominster & Clinton we have experienced considerable difficulty in not having sufficient power, and I believe that if the suburban roads had sufficient power to operate all their cars and plows during a snow storm they could keep the line open.

Thomas F. Carey, representing the Wason Company, and Percy Hodges, the McGuire Company, were present, and were obliged to answer many questions, which were very interesting and instructive.

E. E. Potter, of the Union Street Railway Company, New Bedford, Mass., and C. F. Baker, superintendent motive power and

machinery, of the Boston Elevated Railway Company, also made a few remarks on the subject.

After the discussion a vote was passed authorizing the president to appoint a committee of three to select a subject for the next meeting.

After adjournment the members proceeded down Federal Street in a body to O'Brien's Fish Grill, where a lunch was enjoyed by all.

### Fares and their Effect on Receipts\*

BY H. GERON, MANAGER OF THE COLOGNE STREET RAILWAY COMPANY.

This paper is based upon replies to the following questions sent to the members of the association:

Have your fares been materially altered during the past five years?

Of what nature were these alterations?

What were your reasons for making them?

What effect did they have on (1) the receipts; (2) the expenses; (3) the profits?

Do you consider your present fares reasonable and satisfactory?

All replies may be grouped together under the two words, "Reduction" and "Simplification," and in most cases the fare has been made uniform and the right of transfer has been granted within city districts. In suburban districts uniform fares have not been found satisfactory.

At Aachen, on an 82-km road, the fare was reduced considerably in 1897-98, so that within city limits it was a uniform 10 pf. and in suburban districts 5 pf. per 1500 m; the minimum being 10 pf. The effect of the first change was remarkably good, but the last-named rate did not increase the traffic. Eight and a half million passengers are carried by this road every year.

At Elberfeld-Barmen the uniform 10 pf. fare was introduced in 1897, the year electricity was adopted, and the result was that the traffic increased from 5,000,000 in 1895 to 13,500,000 in 1899. The company advocates a uniform fare for lines where traffic is heavy, the headway small and where the set of passengers frequently changes. On Sundays and holidays it may be advisable to graduate the rates so as not to induce passengers to ride over the entire route for the small uniform fare.

In Brussels, where 41,000,000 passengers are transported yearly, the uniform rate has given entire satisfaction and the company reports that on several lines its receipts per car km have remained the same. It is proposed to reduce the fare at an early day to 20 centimes for the first class and 15 centimes for the second class. The 133.5-km road in Hamburg, where 61,000,000 are carried each year, has continually reduced the fares, and it was possible to reach the nearby suburban towns for 15 pf. The company reports, however, that while the traffic increased 12.3 per cent, the receipts increased only 9.9 per cent, due to this reduction, which is not a very favorable result.

The Geneva company advocates a uniform 10-centime fare, which it claims is about 5 centimes per km. In Hanover, where 27,000,000 passengers are carried yearly over a system 186 km in length, the reduction of fares was carried to such an excess that a person could ride 8 km for 10 pf. It is the intention of this company to increase its fare on lines leading into suburban districts.

In a paper read by Manager von Pirch in 1899, at the Elberfeld meeting of the Verein Deutscher Strassenbahn und Kleinbahn Verwaltungen, it was stated that out of forty-six street railways, thirty-nine of which used electricity, twenty-one, or 45.6 per cent, had a uniform fare of 10 pf.; 17.4 per cent a uniform fare in the city and sectional rate outside of city limits, and 37 per cent a sectional rate only; 78.3 per cent used the transfer system, and 47 per cent of these had a uniform fare, which shows that the transfer system is a profitable one.

In deciding upon a change of fare the company must look ahead and carefully consider the density and growth of the population, the length of its franchise, the contour of the city and its streets, the financial situation and other local conditions. We can therefore only state the following general conclusions:

(1) The rates are to be arranged for city roads as simple and cheap as local conditions will permit.

(2) For large cities a uniform rate for a large area, excluding suburban districts, seems most profitable.

(3) The transfer system is profitable, but each specific case must be decided on its merits.

\* Abstract of paper read before the International Tramway Congress, September, 1900.

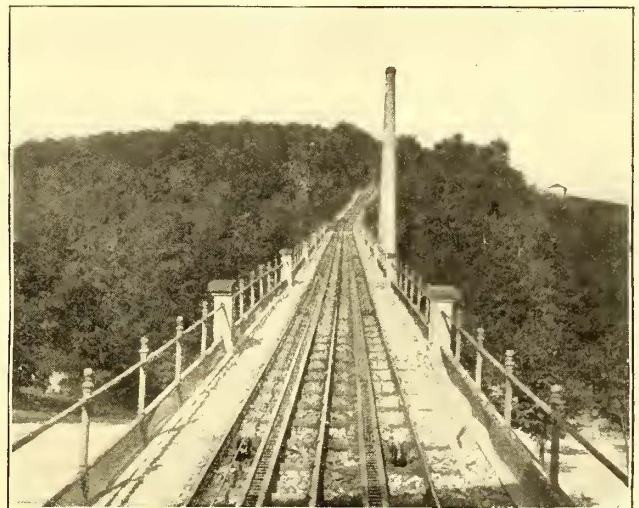
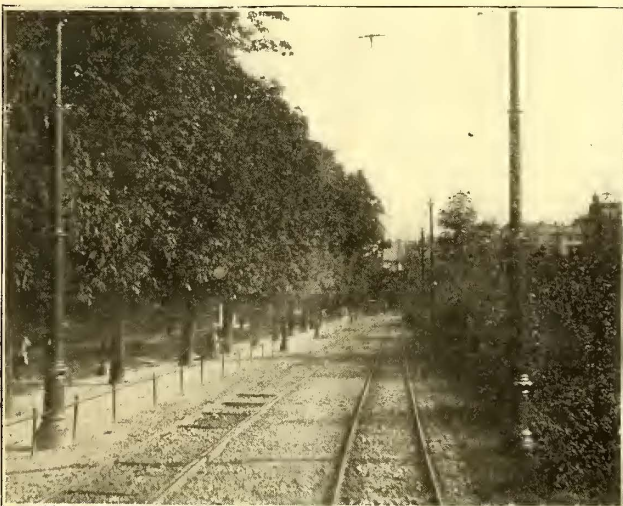
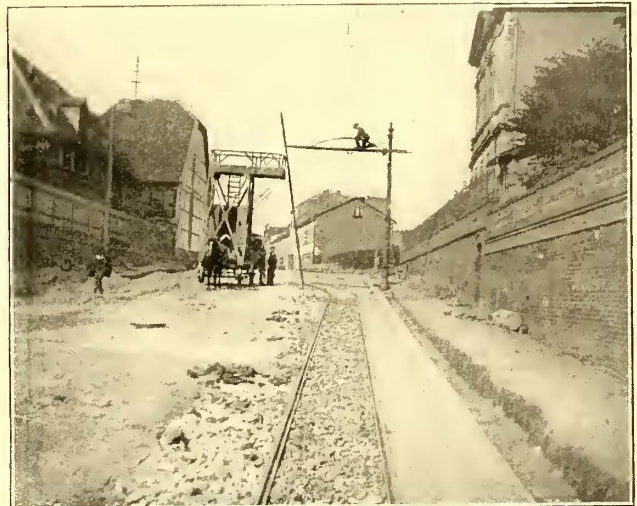
### Annual Meeting of the Verein Deutscher Strassen- und Kleinbahn Verwaltungen

The sixth annual meeting of the Verein Deutscher Strassen- und Kleinbahn Verwaltungen was held at Wiesbaden, Sept. 6-9.

The delegates were greeted by the committee on the evening of Sept. 5, the host being the Süddeutsche Eisenbahn-Gesellschaft, of Darmstadt, the company which operates the electric roads of Wiesbaden and the cable line running up to the top of the Neroberg. As the cars on this latter line are supplied with water ballast while descending, a pumping station has been installed at the foot of the incline. On the electric cars trolley

### REPORT OF EXECUTIVE COMMITTEE

It is gratifying to note that the membership of the association has increased from 93 to 100 during the past year, and that only four companies have withdrawn on account of being consolidated with other roads. The association has been very active during the year, and nearly every committee appointed at the last meeting has its report to make, and many of these reports are of great and permanent value. The paper by Mr. Oudendijk on "The Telegraph Road Law and Its Effect on Electric Street Railways," has received the attention of the postal authorities, and the latter has ordered the installation of safety fuses, as recommended at the last general meeting. It is surprising to learn, however, that the



VIEWS IN WIESBADEN, SHOWING THE STREET RAILWAY SYSTEM

wheels were formerly employed, but at present the Siemens sliding contact is employed, as the company desired to use as few wires in the overhead construction as possible. The engravings also show the latest method adopted to protect telephone wires. It consists of a grounded wire suspended above the trolley wire. The execution of this work has been so tastefully done that it does not in the least mar the appearance of the streets of Wiesbaden. The trolley poles also are hidden from view as much as possible, and the principles adopted throughout are beauty and cheapness.

The first session was opened on Sept. 6 at 9:15 a. m., by President Roehl, of Hamburg, and after the usual greetings Director Thorné, representing the engineering department of the local street railway company, greeted the representatives of these roads, and praised their careful and conscientious work, which, he said, is far superior to those exercised by the owners of State railways.

The annual report of the executive committee was then read. It is given in abstract below:

authorities expect the railway companies to stand this extra expense. Generally the person who makes an error has to pay for removing it, but in this instance the reverse seems to be the case. It is quite doubtful whether the companies are under any legal compulsion to carry out this plan, and it is to be hoped that the authorities will adopt the alternative safety device recommendations proposed by the association. Again, we regret that the authorities still insist on the maintenance of mechanical safety devices, regardless of their inefficiency, as evidenced by the burning of the large telephone exchanges at Barmen, Zurich and Dortmund. In all three cases the blame rested with the postal authorities, as shown by competent experts. All this evidence proves the uselessness of guard wires, the maintenance of which is an enormous yearly expense to the railway companies.

The proposition made by Postmaster Canter at the last general meeting to ground broken telephone wires has not been indorsed by the postal authorities. The new telegraph road law also has

not come up to expectations, and the great demands made by it in regard to the removal of existing telegraph lines has stood in the way of building, by private capital, many needed roads. Although the government has appropriated large sums for the laying of metallic returns for telephone lines, it appears from reports that the expense has still to be largely borne by the railway companies.

Referring now to the questions propounded by the Elektrotechnische Verein as to the probable damage done by electric roads to existing gas and water pipes, the association has done its utmost in assisting to collect data. It is the general opinion that the problem will soon be considered by the government itself. Further to aid in the work the association has asked for representation on the commission of the Elektrotechnische Verein, and Messrs. Gunderloch, of Elberfeld; Poetz, of Hamburg, and Oudendijk, of Cologne, have been chosen. Nothing definite has been reported by the commission at this time. In regard to the work of the committee on safety devices for mean-pressure installations, Director Gunderloch will make a report. The committee consists of Messrs. Gunderloch, of Elberfeld; Oudendijk, of Cologne; Grotewold, of Hanover; Henizerling, of Berlin, and Poetz, of Hamburg. Their report will probably serve as a guide to the government, and will be awaited with a great deal of interest.

Referring now to the extent to which companies permit smoking in their cars, sixty-five replies have been received, which show that nine companies permit smoking in closed cars, eight permit it in separate compartments, thirty-one forbid it entirely within cars, one permits smoking in trailers, one is utterly opposed to smoking, one even forbids smoking on front platforms, five have several smoking cars in operation, and eight companies, operating horse cars, have not considered the question at all. These replies show that most companies permit smoking on the platforms only, and that only very few companies have found separate smoking cars or compartments a success.

A number of companies have requested information in regard to the State requirements relative to the desire of street railway companies to connect with larger roads, and most of them report the conditions entirely too severe. The replies to inquiries received show that the conditions practically forbid any such arrangement with Prussian railways. One company even reported that it had received an official reply, which, after stating severe conditions, concluded with the remarkable statement that if the company did not feel like complying with them it could suspend operations, and the public could take their goods to the next railway station, and forward them from there. This is contrary to the government's desire to extend the street railways of the empire, and certainly against the spirit of the times. It will stop private capital from coming forward for street railway building purposes, and unless the State itself aids in supplying the necessary funds, an unwelcome cessation in street railway building may be expected.

Another question which has interested the association during the past year is that of wages and working hours of employees. The subject is not so much an economic as a political problem. It appears as if most of the recent disturbances were inspired by the Social-Democrats for political purposes. Against such tactics all companies should proceed in force, and questions relating to wages and hours of labor should be decided by the employers themselves, *i. e.*, the companies. The request of the Social-Democrats to aid them in compiling statistics relative to the wages and hours of labor of employees has been complied with, and the members have been requested to answer the questions asked on a blank sent to them for that purpose.

After the reading of the report Engineer Vellguth, of Hamburg, made some remarks on the accident returns for 1899 from fifty-eight German street railways. He said, in part:

#### ACCIDENTS ON GERMAN STREET RAILWAYS

The questions presented were replied to by fifty-eight companies, representing 156,769,813 car kilometers and transporting 530,287,191 persons annually; in addition, 1,142,954 freight car kilometers were traveled. One hundred and seventy-two accidents have been reported, making one case for every 3,083,065 passengers actually carried, and this number was 41.1 per cent of all accidents reported due to the street car traffic. Among all the passengers injured there was only one child, while most adults were injured through carelessness in entering or leaving cars: no child has been injured in this way, but eight accidents are reported which call for special mention. They happened to infants carried by adults who were careless in entering or leaving the car while it was still in motion and let the child slip from their grip. In all, 247 persons were injured who were not actually passengers, making one for every 630,323 car kilometers. Of these persons 33.2 per cent were children, which is to be ascribed to carelessness, inexperience and lack of supervision. The practice to arrest parents guilty of the

last named crime and whose child has been injured is recommended. Of the 293 dangerously injured persons, 147 were passengers and 146 pedestrians. The following decreases are noted during 1899 over 1898: Accidents due to entering or leaving cars and too great a speed around curves and accidents to children. The following increases, however, offset the above: Accidents due to collisions, which, however, did not affect the passengers as much as pedestrians and wheelmen. More persons were injured due to leaving the car before it had come to a full stop. All of this points to a more efficient and better disciplined force of employees and more effective brakes.

A total number of twenty-eight accidents are reported as being due to the trailers, or one for every 768,523 cars kilometers. The motor car is 1.4 times as dangerous as the trailer. The argument that trailers are extremely dangerous is not well founded, as the danger lies in front of a car, and the trailer having a car in front removes this danger, which would be far greater if a number of motor cars should be employed to take care of the traffic.

The above figures, which are carefully tabulated in the report, do not include the accidents reported by the Grosse Berliner Strassenbahn. On the several lines of this company 2687 persons were injured, 16 of whom fatally and 101 seriously; 1726 of the total number were males and 961 females; 2493 were adults and 194 children, and 1978 were passengers on cars; 79.5 per cent of the cases were due to the carelessness on the part of the persons injured; 41.03 per cent were due to passengers leaving the cars; 10.26 per cent to boarding the same; 15.4 per cent fell from the platforms due to some unknown cause; 1639 happened during the day and 1048 at night; 1371 were injured by motor cars and 1316 by horse cars.

It is interesting to note, in conclusion, that while vehicles transporting goods injured 16.97 persons out of every 1000, the street cars are only responsible for 4.21, or one-quarter of that number.

A paper on brakes was then read. It was, in part, as follows:  
THE VALUE OF DIFFERENT KINDS OF BRAKES USED ON  
ELECTRIC RAILWAYS

BY MESSRS. FROMM AND POETZ

Question papers containing twelve essential questions relative to brakes were sent out to one hundred companies, and sixty-three of them sent in replies. The latter show that the majority of electrically operated cars are equipped with short-circuit brakes, a small number have electromagnetic brakes, and a few use both systems. Some have air, track and other brakes in addition to their electric brakes. Ten roads use the short-circuit brake as an ordinary working brake, twenty-one as an emergency brake, one for both, and three use it as a working brake under certain conditions. It is found that the two-axle cars weigh, empty, between 6000 kg and 9500 kg, and from 8000 kg to 11,975 kg loaded; the four-axle cars weigh from 10,000 kg to 15,000 kg empty, and from 14,500 kg to 18,000 kg loaded; the two-axle trailers from 2000 kg to 4000 kg empty, and from 4500 kg to 7250 kg loaded, and the four-axle trailers from 4500 kg to 7200 kg empty, and from 12,000 kg to 16,000 kg loaded. Most companies use two-axle trailers supplied with hand brakes.

The greatest speeds permitted on the various roads vary as follows: Five roads, 12 km; ten roads, 15 km; five roads, 18 km; thirteen roads, 20 km; twenty-one roads, 25 km; two roads, 30 km, and the Düsseldorf-Krefeld road, 40 km. In regard to the distance within which a rapidly moving car must be able to be brought to a standstill, a great variety of replies has been received. The average distance for cars going at a speed of from 15 km to 20 km per hour is from 8 m to 12 m when the car is empty, and from 10 m to 15 m when the car is loaded.

Another great variety of replies has been received in answer to the question as to the current and pressure required by the brakes. They vary from 50 amperes to 70 amperes at 150 volts to 180 volts, to 30 amperes to 40 amperes at 440 volts to 450 volts, or even 130 amperes to 150 amperes at 425 volts to 450 volts, and one road employs a voltage as high as 1000 volts. In all, the current varies between 65 amperes and 200 amperes, and the voltage between 400 volts and 1000 volts.

Electromagnetic brakes in general have been found very satisfactory, as have also the air brakes, those of the Standard Air Brake Company being especially recommended. It is claimed, however, that many traffic interruptions are due to the freezing of pipes and valves, and the repair costs of air brakes are also high.

The commission made a number of experiments with the new Schieman track brake on some of the Hamburg lines. The formula employed for obtaining the braking power P was:

$$P = \frac{G v^2}{2g l}$$

Where G is the weight of the car in kg,  
 v the speed in meters per second,  
 g the acceleration of gravity,  
 l the braking distance in meters.

The braking distance for electromagnetic axle brakes was found to be for a speed of 22 km per hour:

	Track Dry	Track Wet	Track Slippery
Two-axle, one-motor car.....	10.68 m	10.97 m	21.01 m
Two-axle, two-motor car.....	8.27 m	10.99 m	24.79 m
Four-axle, two-motor car.....	9.55 m	9.91 m	14.10 m

The slippery track is overcome largely by the free use of sand in actual practice. The current for single-motor cars was 70 amperes; for two-motor, two-axle and four-axle cars up to 150 amperes per motor. As these currents are only used for short periods, the motors are not injured.

The braking distances with the Schieman brake were found to be:

	Meters
With dry track.....	8.22
With wet track.....	5.20
With slippery track.....	17.12

which is a very gratifying result.  
 The following are the conclusions drawn by the commission from the replies received:

1. In general, electrical short-circuit brakes used as emergency brakes are very successful.
2. Electromagnetic brakes are recommended for heavy cars, and where the grade is variable.
3. Air brakes have given good satisfaction, and only time will tell whether the defects pointed out at present are inherent to the system or not.
4. Other braking systems cannot be judged at the present time, as they have not been used on a large enough scale and for a long enough time to permit the passing of judgment.

The discussion on this paper was opened by Director Fromm, of Kelsterbach, who explained that it had been found necessary to make extensive experiments in order to hand in a report worthy of its title. The requirement that cars should be stopped within their own length when going at a high speed is seldom necessary. The various replies showed that the use of short-circuit brakes caused the ruination of gear wheels and the burning out of armatures, and that magnetic brakes were preferable. In most cases the electric and magnetic brakes are only to be used in emergencies, and it happens frequently that the motormen cut them in so quickly as to injure the passengers. Engineers Poetz, of Hamburg, and Fromm, of Kelsterbach, were requested to continue these interesting experiments, and to report at the next meeting.

Director Gunderloch, of Elberfeld, then read the report of the Elektrotechnische Verein on the question of safety devices for electric street railways, which has been treated extensively in these columns. Great differences of opinion were expressed in regard to the earthing of lamps and apparatus in the cars. The representatives of such firms as Siemens & Halske, A. E. G., Schuckert, etc., all recommended the earthing, while the operating companies in general opposed it. The former fear that passengers entering the car may receive a shock by taking hold of the brass hand-rail, should the car become charged through defective apparatus. Above all, the controller should be earthed, so that the motormen can not make a short-circuit between the hand-brake and controller cylinder. The railway companies, on the other hand, claimed that the earthing might cause traffic disturbances, and that no one has ever been hurt by such short-circuits.

In regard to the question of wages, a few remarks were made by Director Roehl, of Hamburg, and they may be summed up by stating that it is simply a question of might against might. The Berlin strike has shown that places on railways are eagerly sought, 22,000 persons having applied for work in two days. On the other hand, it is the desire of the companies to make the relations between themselves and their employees as cordial as possible by the establishment of pension funds, fair treatment and reasonable division of working hours. The motorman overestimates his knowledge, and forgets that it is far easier to train a green motorman than a green driver, and that the latter must be much stronger physically. It should be remarked that in Dusseldorf the motorman is only permitted to work 312 hours per month in winter, and 324 hours in summer, which, for an average of twenty-seven days is 11.6 to 12 hours per day. In Hamburg, on the other hand, no motorman is allowed to work more than ten hours per day, which the company claims is a good figure to ensure public safety. This arrangement actually calls for 9½ to 9¾ working hours per day.

The next report taken up by the association was that by Engineer Vellguth, of Hamburg, on the relative cost of operation of two and four-axle motor cars and trailers. An abstract follows:

COST OF OPERATION OF VARIOUS METHODS ADOPTED BY ELECTRIC STREET RAILWAY COMPANIES

BY H. VELLGUTH, OF HAMBURG

It cannot be denied that the railway manager would find it of great value, and, in fact, almost essential, to know the cost of operation of two-axle and four-axle motor cars, and two-axle motor cars with trailers, as well as the effect of each type on the income on his different lines. If he studies these items carefully he will find that different types are better or worse adapted for different periods of the day. There are floods and ebbs in traffic, and the factors which cause these variations should determine the most efficient method of running the road. This information is highly essential in view of the fact that the running of street railway lines is becoming more expensive every year, as the obligations to city and State and the actual cost of operation are greater.

In compiling tables on operation the expenses were divided into the following three classes:

1. Running expenses.
2. Money laid aside for future purchases.
3. Sinking fund.

If Z represents the total expenses for the year in pfennig, M<sub>2</sub> the number of two-axle car kilometers traveled, M<sub>4</sub> the number of four-axle car kilometers, A the number of trailer kilometers traveled,  $\frac{a}{b}$  the fraction for trailer, taking the two-axle car as a unit, and  $\frac{n}{m}$  the fraction for the four-axle car, and R<sub>a</sub> the cost in pfennig per trailer car kilometer, then:

$$\frac{Z}{\frac{b}{a} \left( M_2 + \frac{n}{m} M_4 \right) + A} = R_a \text{ in pf}$$

by multiplying this by  $\frac{b}{a}$  we get the cost per two-axle car kilometer, or

$$R M_2 = R_a \frac{b}{a}$$

and

$$R M_4 = \frac{n}{m} R_2$$

is the cost per four-axle car kilometer.

Then the author presented as an example the actual figures gathered from the Hamburg Street Railway Company, where the fractions  $\frac{b}{a}$  and  $\frac{n}{m}$  are figured out.

The conclusion is finally reached that only during times of great traffic does it pay to run trailers.

In the discussion the author pointed out in great detail the constant diminution of profits and increase of expenditures. He further claimed that it is an easy matter for the manager of a road, who keeps a strict account of his expenditures and accurate statistics of his traffic, to gage the profit or loss of each trip, day or week, and he can find, by experiments, what type of car or arrangement of cars would be best suited for his road. It was the object of the author to gather individual statistics, and later group them together into a general resumé. The former consist of the following: Weight and number of passengers, weight and seating capacity of cars, number of employees, space required for storage of cars in barns and shops, the first cost of the cars, current consumption per car, the cost of repairs on cars, their cleaning, etc.

President Roehl strongly recommended the paper for careful perusal, as it might convince a number of managers that it would pay them to make a change in the present methods of running their roads.

At the second session, on Sept. 7, Director Fischer, of Posen, made a report on municipal street railway requirements, and he pointed out that local police authorities frequently exercise the right which legally belongs to the higher State authorities. His remarks were of great interest, but related particularly to Prussia. The remarks were supplemented by Attorney Ullmann, also of Posen.

Doctor Rollman, of Frankfurt, then made a report on the transportation facilities at the Paris Exposition, in which he stated that in the plans the builder had exercised more influence than the railway engineer. The lines are unfavorably located for the transportation of large numbers of people. On account of the well known neglect of the street railways of Paris, neither the American Street Railway Association nor that of Germany found it expedient

to be represented officially. Only a few United States and German representatives were present for the purpose of gathering private information.

Dr. Eger, of Berlin, one of the two most prominent German legal authorities on street railways (the other being Prof. Dr. Hulse, of Berlin), then made some interesting statements in regard to the interpretation of the German street railway laws, how to check municipalities in demanding too many concessions from the street railway company, and how to compel them under certain conditions to permit street railway companies to make use of the streets.

The report of the Literary Commission was then read, and consisted of a financial statement of the society's organ, the *Mitteilungen des Vereins deutscher Strassenbahn und Kleinbahn Verwaltungen*, and the members of the commission expressed the hope that the paper would in the future publish reports equal in value to those printed in the STREET RAILWAY JOURNAL. It was further pointed out that the publisher of another German railway paper claimed to be the organ of a German street railway association which had gone out of existence.

It was further decided that the managers of German street railways make a trip through the United States about the end of May, 1901. The names of cities to be visited were decided upon, and have already been announced in these columns.

The advisability of publishing street railway statistics similar to those of large steam roads, as proposed by the Minister of Railways, was then taken up for discussion. While the difficulty of such an undertaking was recognized, it was decided to attempt to compile this great work. It was decided, however, that the Minister of Railways would have to bear the expense. It was further pointed out that the society could not force its members to submit the desired information, but that this must be procured by the Minister himself, in case there is such a requirement in their franchise. The statistics should embrace all German street railways, and should cover the following items: Expenses, income, length of road and track, number of persons and goods transported, etc.

The budget for 1901 shows a deficit of M.750, which will be covered by the surplus of former years. The capital of the society, which is incorporated, is M.12,000. It was decided to hold the next convention at Stuttgart, Wurttemberg. The banquet and excursions were well attended, and thoroughly enjoyed by all, and a vote of thanks was tendered to the operating company in Wiesbaden for its hospitality.

### Boston and the Vestibule Question

The Massachusetts Railroad Commissioners gave a hearing, Oct. 18, on the petition of the Boston Elevated Railway for exemption from the provisions of the statute which makes it compulsory for railway companies to equip their cars with vestibules. The hearing was a most important one, and much valuable testimony was introduced by the company to show that the vestibule was a hindrance to the motorman in performing his duties. The plea made by those opposing the company's petition seems to have been prompted by humanitarian impulses, and those who had had no practical experience in the operation of cars. On the other hand, the company introduced expert testimony to prove its point. The officials of the company stated their reasons for applying for exemption from the act, and then introduced a number of motormen, who testified as to the inadvisability of compelling the company to equip the cars with vestibules. Their testimony was especially valuable, as they alone had had the practical experience. It was pointed out that the vestibule obstructed sight, and interfered with the hearing of the operator of the car, and that it was particularly trying in stormy weather and at night. It was shown that on a very dark night it was impossible for the motorman to see beyond the glass front, also that the bright car lamps at the back of the motorman throw a figure of the operator upon the window, the effect being that the reflection appeared to be approaching the car while it was in motion. The hearing will be continued on Nov. 16, when some more valuable information on this subject will likely be presented.

### Street Railway Patents

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

ELECTRIC RAILWAY PATENTS ISSUED OCT. 16, 1900

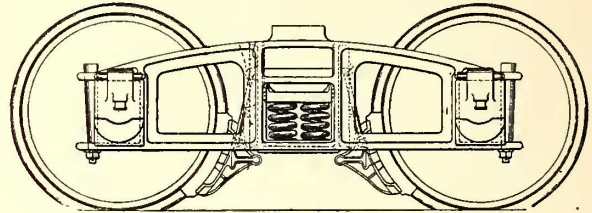
659,692. Switch Operating Device; H. B. Pierre, Torrington, Conn. App. filed March 27, 1899. A foot-operated wheel, carried by the car, is thrown down to a position where it will trip a device for shifting the switch tongue.

659,707. Railway Turn-Table; J. S. Stephens, Maywood, Ill. App. filed March 19, 1900. Consists of a tilting circular platform, supported on a head provided with a double fulcrum, the head being mounted on ball bearings on a suitable base.

659,812. Rail-Joint; J. Crites and J. Webb, East Liverpool, Ohio. App. filed Feb. 5, 1900. Consists of two plates, which lie on the under side of the rail, and extend around the flanges and embrace the sides of the rail, the plates being secured together by a locking device of specific construction.

659,848. Switch Shifting Mechanism; W. Hamilton, National Military Home, Ohio. App. filed July 12, 1900. The switch tongue carries small pivoted extension, which lies in the groove of the track ahead of the tongue. A shifting shoe carried by the car is lowered into the groove, and acts on the extension to throw the tongue from one side to the other.

659,903. Car Truck; W. E. Symons, Savannah, Ga. App. filed Aug. 19, 1899. Structural details of a "boltless" car truck.



PATENT NO. 659,903

659,982. Car Fender; J. W. McKean, Charleroi, Pa. App. filed Feb. 26, 1900. The fender is pivoted to the car, and carries a segment of gear, which stands normally out of engagement with a pinion on the car axle. When the fender strikes an object the segment engages the pinion, and the fender is thrown into position to prevent the object passing under the wheels.

### PERSONAL MENTION

MR. P. McCULLOUGH, of Sherbrooke, Que., has been appointed assistant manager of tramways at Liverpool, England.

MR. A. L. WIGHT, auditor of the Toledo Traction Company for the past eleven years, has resigned to accept a position in Chicago.

MR. WILLIAM H. WILSON, who has been in charge of the electric railway lines owned by the South Jersey Gas, Electric & Traction Company, has been appointed superintendent of the lighting interests owned by the company, to succeed Charles H. Fowler, resigned.

MR. J. W. CROSS, of the Adams & Westlake Company, of Chicago, died at his home in Philadelphia, Saturday, Oct. 6, 1900. Mr. Cross has been connected with the Adams & Westlake Company for a number of years, and his death will be keenly felt by both his employers and many business associates.

MR. BION J. ARNOLD, of Chicago, has just returned from a three months' trip to Europe, where he went as a delegate from Chicago to the International Electrical Congress. Mr. Arnold traveled through England, Italy, France, Germany and Austria, and found many things of interest in the electrical line.

### NEWS NOTES

HUNTSVILLE, ALA.—The construction of an electric railway from Huntsville to Whitesburg, on the Tennessee River, is being discussed by local capitalists, and it is stated on good authority that a company will soon be organized for the purpose of constructing the line. It will be about 10 miles long.

LITTLE ROCK, ARK.—Mrs. J. R. Miller has offered the City Council a large cash consideration for the street railway franchises in this city, which the Council claims expire in 1905.

GREENWICH, CONN.—The Selectmen have granted the application of the Greenwich Tramway Company for permission to lay tracks from Port Chester, N. Y., to the Greenwich station. This route will make a short cut from Port Chester to Greenwich, and later the line will be extended from Greenwich to Stamford, thus making through trolley connections between New Haven and New York.

WILMINGTON, DEL.—The Wilmington & West Chester Railway Company, which proposes to build a road to connect Wilmington and West Chester, has made application to the Street and Sewer Department for permission to lay tracks on various streets in this city. The Wilmington City Railway Company has also made application for permission to extend its pro-



posed Monroe Street line to Ninth Street, and then to the city line, where connections will be made with the proposed Wilmington & West Chester Railway. It is understood that the Wilmington City Railway and the proposed West Chester line have made arrangements, which include a system of transfers throughout the city. The Wilmington City Railway Company secured from the Levy Court an extension of six months on its franchise to use Washington Street Bridge, over the Brandywine Creek.

WASHINGTON, D. C.—Arrangements have been made between the Columbia Railway Company and the Chesapeake Beach Railway Company by which express matter and freight of less than car-load quantity will be handled from a station which has been established at Fifteenth and H Streets northeast to all points on the extension of the Columbia line and on the Chesapeake Beach Railroad.

WASHINGTON, D. C.—The Baltimore parties who have been contesting the charter of the Washington & Gettysburg Electric Railway in the courts of Maryland and Washington have been defeated, and the last obstacle preventing the construction of the road is removed. The officers of the company are: George H. Harries, president; S. W. Woodward, vice-president; B. H. Warner, secretary and treasurer; John B. Larnier, general counsel; S. W. Woodward, Crosby S. Noyes, E. Southard Parker, J. Enos Ray, Allan Farquhar, Albert Gleason and George H. Harries, directors.

JACKSONVILLE, FLA.—The City Council has granted the Pleasure Park Company a franchise for the construction of an electric railway here. R. S. Shook is interested in the new enterprise.

ATLANTA, GA.—The petition of the Atlanta Rapid Transit Company to extend its lines to connect with the old Lakewood line has been favorably acted upon.

WAYCROSS, GA.—The Waycross & Suburban Railway Company has been granted a franchise for the construction of an electric railway here. The franchise is granted for a period of fifty years.

EAST ST. LOUIS, ILL.—The Collinsville, Caseyville & St. Louis Electric Railway was placed in operation Oct. 20.

CHICAGO, ILL.—The old car house of the Chicago Union Traction Company at West Van Buren Street and Center Avenue was destroyed by fire last week. The house had not been used by the company for some time, and it had of late been used for storing wagons.

CHICAGO, ILL.—The Citizens' Street Railway Association, whose incorporation was noted in the STREET RAILWAY JOURNAL for Oct. 20, will ask the City Council for a blanket ordinance covering about 400 miles of streets now occupied by the several Chicago companies.

CHICAGO, ILL.—By a collision of a fire department hose cart and a trolley car at Sixteenth and Vliet Streets, Oct. 17, three members of the fire department and a motorman were seriously injured.

CHICAGO, ILL.—The Chicago City Railway Company is to abandon the operation of trail cars.

CHICAGO, ILL.—A Grand Avenue car jumped the tracks and plunged in a ditch here a few days ago, injuring five persons.

CHICAGO, ILL.—The traffic report of the Metropolitan Elevated Railroad Company for September shows that 2,460,000 passengers were transported, as against 2,285,520 for September, 1899. The daily average for September, 1900, was 82,000, as against 76,184 for September, 1899. Below is given the traffic records so far this year, in comparison with those of last year:

	1899	1900
January .....	2,242,490	2,756,135
February .....	2,109,632	2,593,304
March .....	2,456,533	2,929,748
April .....	2,323,920	2,712,900
May .....	2,352,590	2,674,928
June .....	2,172,990	2,466,180
July .....	2,093,338	2,287,490
August .....	2,110,170	2,432,167
September .....	2,285,520	2,460,000

CHICAGO, ILL.—The traffic report of the South Side Elevated Railroad Company for September shows that 1,951,860 persons were transported, as against 1,787,539 for September, 1899. The daily average for September, 1900, was 65,062, as against 59,585 for September, 1899. Below are given the traffic records so far this year, with comparison with those of last year:

	1899	1900
January .....	1,821,609	2,154,624
February .....	1,688,176	1,961,400
March .....	1,981,179	2,240,184
April .....	1,916,340	2,149,950
May .....	1,847,228	2,117,176
June .....	1,683,510	2,036,760
July .....	1,631,964	1,890,132
August .....	1,630,569	1,908,627
September .....	1,951,860	1,787,539

KOKOMO, IND.—The Central Traction Company is now receiving bids for the construction of its proposed line between Kokomo, Elwood and Indianapolis.

TERRE HAUTE, IND.—The employees of the local street railway company are on strike.

GOSHEN, IND.—The City Council has passed an ordinance granting the Goshen, Wawasee & Southern Electric Railroad Company a franchise for the construction of an electric railway through this city. J. J. Burnes is interested in the new line.

INDIANAPOLIS, IND.—A Lake Erie & Western Railroad switch engine collided with a car of the Indianapolis Street Railway at Thirteenth Street Oct. 19. There were twenty-one passengers in the car at the time, and fifteen of this number were injured, four perhaps fatally.

WABASH, IND.—The Wabash River Traction Company has accepted the franchise for the construction of a line between Wabash and Peru, and has filed a bond for \$10,000 to insure compliance with the terms of the franchise. The contract requires that the construction of the line must be commenced by April 1, 1901.

DES MOINES, IA.—The Des Moines Street Railway Company has made application to the City Council for the right to haul freight over its Highland Park line, and the line running east to the Fair Grounds. In return for the rights the company agrees to extend the Highland Park line to Saylorville, a distance of 5 miles, and to extend the Fair Grounds line to Saylorville, a distance of about 1½ miles. The company does not anticipate any difficulty in securing the grants.

ROCKLAND, MAINE.—The young society belles of this city acted as conductors on the cars of the Rockland, Thomaston & Camden Street Railway Company Oct. 13. The regular conductors assisted in the operation of the cars, but the young women collected all the fares. The fares received by the bewitching dames ranged from 5 cents to \$5, and the total receipts are said to have reached \$500, all of which was donated to the Old Ladies' Home.

BEL AIR, MD.—The Town Commissioners have granted the Bel Air & Havre de Grace Electric Railway Company a franchise to construct an electric railway on Main Street from Port Deposit Avenue to the Baltimore and Lehigh Station, provided the company secures the consent of the property owners along the route, together with certain other agreements.

BALTIMORE, MD.—The Baltimore & Havre de Grace Electric Railway & Power Company has made application to the County Commissioners for a franchise for the construction of an electric railway on the Philadelphia turnpike from the Baltimore city limits to the Hartford County line. R. P. Sword, E. S. Phillips, W. S. Sword and P. J. Phillips are interested in the company.

FREDERICK, MD.—At a recent meeting of the stockholders of the Washington, Frederick & Gettysburg Electric Railway Company the construction of the proposed line was discussed, and it was decided to place the matter in the hands of a committee of seven, who are given authority to complete plans and have the line constructed. The road is to extend from Washington to Gettysburg. The directors of the company are Col. L. Victor Baughman, John C. Motter, John Baumgardner, Wm. H. Hinks, Dr. T. E. R. Miller, C. R. Miller, C. R. Nutt, Dr. F. B. Smith, Col. L. T. Brien, Chas. Wertheimer, Isaac S. Annan, D. C. Walker, C. C. Walker, C. E. Cassell, John R. Stoner, Col. D. C. Winebrenner, E. R. Zimmerman and Alex. Ramsburg. Col. L. Victor Baughman is president of the company.

LAWRENCE, MASS.—The Lawrence & Methuen Street Railway Company has been granted an extension of time to Jan. 1, 1901, in which to complete its line here.

FITCHBURG, MASS.—At the annual meeting of the stockholders of the Fitchburg & Leominster Street Railway Company, held Oct. 16, new directors were elected, as follows: Henry A. Willis, Charles F. Baker, Herbert I. Wallace, Edgar F. Belding, George E. Clifford, Wesley W. Sargent, George N. Proctor. The following directors retired: Messrs. Haws, Lowe and Weymouth.

GREENFIELD, MASS.—At the annual meeting of the stockholders of the Greenfield & Turner's Falls Street Railway Company, held Oct. 8, the following directors were elected: F. E. Lowe, Isaac Chenery, A. T. Hall, F. E. Pierce, A. S. Paton and C. E. Dresser. The old officers were re-elected.

PITTSFIELD, MASS.—The annual meeting of the Pittsfield Electric Street Railway Company was held Oct. 17. The treasurer's report for the past year shows the gross earnings to be \$79,652, the operating expenses \$64,650, and the taxes, interest on funded and unfunded debt, \$7,397, leaving a balance of \$7,905.28. Out of this amount a 6 per cent dividend has been declared.

NEW BEDFORD, MASS.—The Selectmen of Mattapoiset have granted the New Bedford & Onset Bay Street Railway Company a location for tracks through the town. H. H. Crapo, of New Bedford, is interested in the line.

WAREHAM, MASS.—The Middleboro, Wareham & Buzzards Bay Street Railway Company has been granted a franchise here. The company has now secured all its franchises for its proposed line between Middleboro and Buzzards Bay, a distance of 23 miles. H. B. Parker, of Newtonville, is interested in the project.

SEDALIA, MO.—The Sedalia Electric Railway Company is now considering a plan for the extension of its lines to North Sedalia.

ST. LOUIS, MO.—The street railway companies have just filed their reports of the trips made and passengers carried for the three months ending Sept. 20. The report follows: St. Louis Transit Company, 579,278 trips and 18,969,047 passengers; St. Louis Railroad Company, 54,504 trips and 829,117 passengers; St. Louis Traction Company, 20,244 trips and 718,092 passengers; St. Louis & Suburban Railroad, 78,374 trips and 4,929,279 passengers. The total number of trips was 732,400, and the total number of passengers carried was 25,445,535. During the same quarter of last year the various systems made 1,195,751 trips and carried 31,745,483 passengers. The Suburban is the only system to show an increase. It made 43,950 trips during the third quarter of 1899, and collected fares from 3,243,173 passengers. The returns, however, show a material increase over those for the last quarter, when street railway traffic was so badly affected by the strike on the Transit Company's lines.

ST. LOUIS, MO.—A bill has been introduced in Council to authorize the Labor Union Street Railway Company to construct an electric railway over a specified route. The petitioners agree to begin construction within six months after the passage of the ordinance, and to complete the system within three years. Provision is also made for recompense of the city for the grant.

BUTTE, MONT.—The new power house and car house of the Butte Consolidated Street Railway on Montana Street is practically completed. The

building cost about \$65,000, and replaces the old power house and car house of the company. The latter was dismantled piecemeal, and the new building was constructed so that the operation of the plant was at no time impaired. Forty-five cars can be stored in the new car house.

**NASHUA, N. H.**—At the annual meeting of the stockholders of the Nashua Street Railway Company, held Oct. 10, the following directors were elected: John A. Fisher, Fred C. Anderson, John P. Goggin, of Nashua, N. H.; P. F. Sullivan, of Lowell, Mass.; Joseph H. Goodspeed, of Boston. The directors organized by electing the following officers: J. A. Fisher, president; F. C. Anderson, vice-president; J. H. Goodspeed, treasurer; J. P. Goggin, assistant treasurer.

**EXETER, N. H.**—At the annual meeting of the stockholders of the Exeter, Hampton & Amesbury Street Railway Company, held Oct. 9, the following directors were elected: Warren Brown, Ebner Folsom, William Burlingame, Rufus N. Elwell, Albert E. McReel, Wallace D. Lovell and Edwin L. Pride. At a subsequent meeting of the board the following officers were elected: Warren Brown, president; E. L. Pride, treasurer; Harry E. Stone, assistant treasurer; John Templeton, clerk. The company's report for the year ending July 1, 1900, showed the gross earnings to be \$75,029.75, with a surplus on hand of \$17,755. The company will ask the Legislature for the right to build a line from Exeter to Newmarket, and possibly to Nottingham, Northwood and Lee.

**NEWARK, N. J.**—The street car coupon sharps are operating here. The plan is the same as that employed in Philadelphia, Chicago, Pittsburgh and other cities, and previously described in the *STREET RAILWAY JOURNAL*.

**NEW YORK, N. Y.**—Both cables on the lower section of the Broadway line of the Metropolitan Street Railway Company broke Oct. 9, and the cars were blocked from about 3 p. m. until 9 p. m.

**ROME, N. Y.**—The Rome City Street Railway Company has been granted a franchise to extend its lines along Madison Street to Maple Street and over Maple to James and down James to Garden Street. The franchise was granted on the same lines which have governed the franchises which have heretofore been granted the road.

**BROOKLYN, N. Y.**—A trackman of the Brooklyn Rapid Transit Company was killed Oct. 9 by coming in contact with the third rail on the company's elevated system.

**GLENS FALLS, N. Y.**—The Warren County Railway Company has recently been granted franchise for the construction of its proposed road in Warrensburg and Caldwell. The company has made application to the Council of Glens Falls for a franchise, and a hearing will be given Oct. 29.

**EAST LIVERPOOL, OHIO.**—E. S. Ranney, of Cleveland, and T. R. Andrews, of East Liverpool, are projecting an electric railway to extend from East Liverpool to Lisbon, and possibly to Salem. The route is being surveyed.

**COLUMBUS, OHIO.**—The Urbana, Mechanicsburg & Columbus Electric Railway Company has changed its plans for entrance into the center of the city. The new route is on Dublin Avenue to Dennison Avenue to Spring Street to Water Street to the interurban loop. The new route is considerably shorter than the route originally planned.

**TOLEDO, OHIO.**—Judge Barber has dissolved the temporary injunction restraining the Toledo Traction Company from extending its line on Stickney Avenue to meet the interurban road to Detroit. The Mayor has refused to sign the Stickney Avenue franchise ordinance, and it will pass over his head and become a law in a few days.

**YOUNGSTOWN, OHIO.**—A very handsome parlor car has just been constructed at the local shops of the Mahoning Valley Railway Company for General Manager Anderson, of the company. It was designed and constructed under the personal supervision of Superintendent Beatty, of the company.

**TOLEDO, OHIO.**—At the annual meeting of the Toledo Traction Company, held here a few days ago, the following directors were elected. Albion E. Lang, Norman B. Ream, John B. Dennis, James A. Blair, George W. Hale, W. B. Hale, Barton Smith, Rufus B. Baker, Thomas H. McLean, W. H. McLellan, Titus B. Terry. The old officers were re-elected as follows: A. E. Lang, president; T. H. McLean, vice-president, manager and purchasing agent; B. Smith, secretary; J. B. Dennis, treasurer; J. F. Collins, superintendent.

**TOLEDO, OHIO.**—The Shore Acres Company, represented by Otto K. Schemansky, Julian T. Cockrille and Clarence D. Briggs, of this city, has just been granted a franchise for the construction of an electric railway from Casino to Point Place. By the terms of the franchise the road must be in operation in eighteen months. The grantees of the franchise now own considerable property at Point Place, and it is their intention to develop this and lay out a park. The new line will connect with the lines of the Toledo Traction Company at Casino.

**MARIETTA, OHIO.**—The Zanesville, Marietta & Parkersburg Traction Company is now being organized to construct an electric railway to connect Zanesville, Marietta and Parkersburg. The line will be built from Zanesville and follow the river to Duncan Falls. From here it will pass through the rich coal fields, a few miles back. The general course will be from Duncan's Falls to Relief, above Beverly; thence to Center Bend; from there through Watertown to Parkersburg. This will necessitate a spur from McConnellsville back a distance of 12 miles, and from Beverly a main line run to Marietta on the east side of the river. This will make a road of 95 miles, the main line being 63 miles, the McConnellsville line 12 miles, and the Marietta line 20 miles. The company proposes to construct three power stations at Beverly, McConnellsville and Duncan Falls.

**COLUMBUS, OHIO.**—The franchise of the Chillicothe, Mount Sterling & Columbus Electric Railway has been annulled by the County Commissioners and all rights heretofore given the company have been declared forfeited.

It is stated that the company will not abandon the line, but that it will continue completing its plans and make application for a new franchise in the spring. I. S. Cook, of Chillicothe, is president of the company.

**TOLEDO, OHIO.**—At the annual meeting of the stockholders of the Toledo Traction Company, held last week, the following officers and directors were elected for the ensuing year: Directors, Albion E. Lang, Norman B. Ream, John B. Dennis, James A. Blair, W. B. Hale, Barton Smith, Rufus B. Baker, Thomas H. McLean, W. H. McLellan, Titus B. Terry and George W. Hale. The officers were re-elected as follows: Albion E. Lang, president; Thomas H. McLean, vice-president and general manager; J. B. Dennis, treasurer; Barton Smith, secretary.

**AKRON, OHIO.**—The Northern Ohio Traction Company has been granted a franchise for an extension of its local West Market Street line from Kuder Avenue to the corporation line.

**BOWLING GREEN, OHIO.**—Local people have commenced the work of securing a right of way for an electric railway from Fremont to Bryan, passing through Bowling Green, Napoleon and numerous small villages. The road would be practically an air line, connecting the county seats of four prosperous counties.

**LORAIN, OHIO.**—The Cleveland, Elyria & Western Electric Railway Company and the Sandusky & Interurban Railway Company have settled differences as to the ownership of track on a street where both had a franchise. The latter company will own the track, the former paying rental. Work of connecting the lines has been started, and the Cleveland, Elyria & Western cars will be running into town in a few days.

**SPRINGFIELD, OHIO.**—The Springfield Railway Company has amicably adjusted differences existing with motormen and conductors. A nine-hour schedule has been agreed upon, but the rate of wages remains unchanged.

**CLEVELAND, OHIO.**—The Railway Construction Company has been incorporated by Frank H. Ginn, Allison J. Thompson, V. F. Buhndard, John M. Garfield and Frank M. Cobb, to construct and equip electric and steam railways. The capital stock of the company is \$10,000.

**ALLIANCE, OHIO.**—H. W. Klein, J. C. Whitla and H. M. Estep, of Pittsburgh, who are interested in the Alliance, Sebring & Salem Electric Railway, were here a few days ago in the interests of the project. While no official information was given out regarding the new line, it was learned that arrangements have been made for beginning construction work at an early date, and that the purchase of the power plant of the Alliance Gas & Electric Company is contemplated.

**TOLEDO, OHIO.**—The Toledo Interurban Railway Company was incorporated Oct. 13, with a capital stock of \$100,000, to build an electric railway from Toledo through Lucas, Fulton and Williams counties, crossing the State line into Indiana. The route in Indiana is not described in the Ohio corporation papers. The incorporators of the company are: Grant Williams, Charles L. Reynolds, S. D. Carr, George D. Palmer, Jr., and James J. Robinson, of Toledo.

**LISBON, OHIO.**—Harry E. Foltz, of Chicago, has made application to the Council for a twenty-five-year franchise for the construction of an electric railway here.

**TOLEDO, OHIO.**—The promoters of the Toledo & Western electric road, which is to extend from this place to Morenci, Mich., with a branch line to Adrian, have completed the work of securing right of way. About half of the road will be built over private right of way. Contracts have been let to the Cambria Steel Company for rails, the first to be delivered Nov. 1. Among those interested in the company are: Luther Allen, Judge Carlos M. Stone, Francis C. McMillen, Stewart W. Chisholm and H. J. Hayes, of Cleveland.

**CLEVELAND, OHIO.**—It is reported that the Cleveland Electric Railway Company and the Cleveland City Railway Company will make no further attempts to secure the passage of a new franchise ordinance by the present Council.

**FREMONT, OHIO.**—At the annual meeting of the stockholders of the Toledo, Fremont & Norwalk Electric Railway Company, held last week, officers were elected as follows: S. F. Angus, president; W. B. Comstock, vice-president; A. W. Comstock, treasurer; W. A. Comstock, secretary.

**COLUMBUS, OHIO.**—The Columbus Railway Company has made application to the County Commissioners for permission to construct an electric railway to Arlington.

**BRIGHTON, OHIO.**—C. T. McCrea, of College Hill, is interested in a plan to construct an electric railway from Brighton to Cumminsville. It is announced that the necessary right of way has been secured for the construction of the line.

**WASHINGTON, PA.**—W. I. Berryman, of Pittsburgh, Pa., has submitted a proposition to the Council for the construction of an electric railway from Washington to Charleroi. Two routes are under consideration, and the length of the line will be about 25 miles. Mr. Berryman says that he has unlimited financial backing.

**SHAMOKIN, PA.**—The Shamokin & Mt. Carmel Electric Railway Company has increased the wages of the motormen and conductors in its employ from 12 to 15 cents an hour.

**PHILADELPHIA, PA.**—Four persons were injured as a result of a collision between a Columbia Avenue and Girard Avenue car of the Union Traction Company, Oct. 9.

**MARSHALL, TEX.**—A. W. Wheeler has applied to the City Council for a franchise for the construction of an electric railway here. Mr. Wheeler desires a fifty-year grant.

**MONTPELIER, VT.**—A bill has been introduced in the Legislature for the incorporation of the Granville & Poultney Electric Railroad Company. It is said that the new company will be an auxiliary of the recently incorporated Granville & Whitehall Railway, of Granville, N. Y.