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### The Engineer in National Affairs

Mr. L. B. Stillwell, in a letter elsewhere in this issue, calls attention to the public service performed by Mr. John Hays Hammond in announcing his candidacy to the office of Vice-president of the United States. Whether Mr. Hammond is nominated at the convention in Chicago this week or not, the fact that his name has been presented is an interesting commentary upon the increasing importance of the engineering profession in the affairs of

the nation. For many years, in fact since the foundation of the Republic, there have been practically but two paths to the highest administrative offices in the country; through political preferment and through military prowess. But the government of a large nation is not dissimilar to that of a large business corporation and questions of broad administration, science and engineering are daily becoming more important. The best method of conserving the resources of the country, a topic to which the recent convention of governors gave its attention, is an example of the intimate connection of engineering with national prosperity, but there are many others in which engineering questions are paramount. We are not in politics and hold no brief for Mr. Hammond, but would welcome the time when the value of the engineer would be recognized in national affairs as thoroughly as it is in large commercial undertakings.

### Railway Power Rate in Chicago

The announcement that the Chicago City Railway and the Chicago Railways Company are arranging to purchase practically all of their power from the Commonwealth Edison Company calls attention to the attendant problem of fixing rates for such large railway power contracts. The increase of traffic and the change from cable to electric operation in Chicago have been carried on without any increase of generating equipment installed by the surface railroads. All of the additional power requirements have been met by the one generating company which supplies current for the lighting and railway services of the entire city, excepting a small amount used for street lighting. The output of about 50,000 kw generating capacity is sold to the surface and elevated railways of Chicago. The measurement is by watt-hour meters at the generating station busbars. In fixing the rate and the method of measurement the generating company has recognized that the cost to the railways must be below that for which they could operate independent generating stations. This rate consists of a kind of a readiness-to-serve charge based on the maximum demand made by a railway company during any one hour during the year, plus ½ cent per kw-hour. This ½ cent charge is to cover the operating cost only. The fixed and investment charges are taken care of by the readiness-to-serve charge of \$15 per year per kilowatt of maximum demand for any one hour. This arrangement of the railways for purchasing current should greatly simplify the work of rehabilitation since otherwise it would be necessary for the street railway companies to provide current generating machinery for immediate use which could not be given a high load factor (even from a railway standpoint) until the complete rehabilitation of the track and of the rolling stock equipment.

### The Chicago City Railway Car House

Car-house design is receiving a great deal of attention at present and perhaps in no department of electric railway work have greater improvements been made than in this direction. The car house of 10 years ago, unless designed with especial forethought, is almost obsolete. The greatest factor in the change has been the requirements for fire protection, but with these have come many other modifications. The arrangement of tracks has been changed with the disappearance of large areas. Construction of pits has been modified to secure better lighting and greater conveniences during inspection. General lighting has been improved and better facilities are provided for the transfer of apparatus from one part of the building to another. Finally, better provisions are made for the comfort of the employees. Of all the features in the new car house of the Chicago City Railway described this week, this latter point will perhaps attract the most attention, although it is in line with that which other well managed companies are doing. In fact the tendency in this direction is so widespread, though emphasized more strongly perhaps than usual in the case of the Chicago road, as to warrant a consideration of the advantages of the policy.

Railway companies are not charity organizations and stockholders in most instances prefer to take care of their own benevolences. We cannot, therefore, presume that the railway company expects no return from the money invested in employees' rooms and the money required each year to maintain them. It can be assumed then that if the establishment and maintenance of such quarters is a part of good management, the company expects and will receive indirect benefits for its investment.

The Chicago City Railway Company probably has definite ideas of how these returns will be made. To the observer, however, there are countless ways in which they will be manifest. One depends on that trait of character which makes one reciprocate good treatment. Where a man has no other interest in his employment than to get the dollar, he is likely to feel that the employer is entitled only to his time. This is especially true in a large corporation which is popularly considered as having no soul. Whether the public believes this or not, the employee is quick to appreciate liberal treatment and if he feels that his employer is really concerned in his welfare, he is usually ready to show his appreciation of it by loyalty and with a service which money cannot buy.

Another and equally as important an advantage is that accommodations of this kind appeal to the better class of men. With a library at hand for those with literary inclinations, billiard and pool tables in pleasant surroundings for those who desire games, opportunities for gymnasium work for the athletic and bathing facilities for all, the standard of the men who seek employment with the company and of those who desire to remain in its service should be raised in a marked degree. The man in whom the presentation of such facilities and privileges as those afforded in Chicago and elsewhere does not arouse a cordial feeling toward the company is the exception. The majority will make every endeavor to show their appreciation, and in doing so will render more efficient service to the company with which they are connected.

### Express Service at Freight Rates

The advertisement of "express service at freight rates" has undoubtedly been helpful to electric railways in attracting business from the established express companies and the steam roads. That the service offered was more liberal in many cases than the companies were justified in giving for the rates received is one of the unfortunate facts which time has demonstrated. The problem raised by the existence and recognition of this situation is, however, one that must be solved, and in the interest of all, and the public should realize that it cannot expect express service at rates no greater than those which would be charged by steam lines for the transportation of freight.

The inadequacy of the freight or express rates charged by the Schenectady Railway has been advanced as an argument by that company in an answer filed with the New York Public Service Commission, Second District, concerning a complaint made by merchants on its lines. In discussing the complaint, the railway argues that it really gives express service and that its rates are much lower than those quoted by the express companies, although the service is equal in value to that furnished by companies established for the purpose of conducting an express business. The minimum charge for the transportation of a package is 25 cents, while any package that weighs over 100 lb. is transported at a rate of 15 cents per 100 lb. These rates, quoted alone, convey no indication of the actual expense involved in the transaction. For these rates the company gives wagon service at the points of shipment and destination, assuring the prompt delivery and convenience afforded by express companies at express rates, but not by steam railways at freight rates. Certain classes of perishable goods are always shipped by express instead of by freight on steam lines, because the essential consideration is the element of time involved in the trip to destination. If the time required to make the trip assures preservation of the goods until the markets are reached, the shipper is willing to pay any reasonable rate. While prohibitive rates on perishable goods would destroy the traffic, which would be preserved and developed by reasonable rates, total destruction would be the end of the business of shippers of this class of goods if the express service should be withdrawn permanently. The facilities afforded by steam and electric carriers differ in many opposing points. Those offered by electric lines partake more of the special nature of express service than freight service, and it is only fair that where the element of time is important in the transportation of goods, the remuneration should correspond to that received by the express companies for similar service. It is important that the cost of furnishing wagon service be reckoned carefully in order that a proper proportion of the expense may be included when rates are computed.

The Schenectady Railway states that its express or freight department is conducted, with present rates, for the accommodation of the public and not for the profit of the company. We believe that the same condition of affairs is true with respect to other companies. Where mistakes have been made in the establishment of inadequate rates, advances should follow without delay. Freight or express traffic should yield a fair return on the capital investment, above expenses and taxes.

### Appraisal of the New York Surface Systems

Appraisal of the surface railway systems in New York City by the Public Service Commission is probably an inevitable result of the strained state of the relations which have gradually developed between the receivers of the New York City Railway and the members of the commission. An appraisal is a necessary and wise step when purchase of property is involved, but of uncertain value in a case of this character, where the real questions concerned are those of adequate service and the right of the receivers to bring about profitable conditions of operation by segregating lines and reducing over-liberal transfer privileges.

The resolution passed by the Public Service Commission assumes that the reason why the receivers cannot provide adequate service and meet rentals on leased lines is that the properties are overcapitalized and that if the rentals were based on a fair value of the property the company could run more cars and retain a satisfactory transfer system. The action of the receivers, who welcome the decision of the commission to make a valuation, throws the burden of responsibility upon the latter body.

The resolution provides for a valuation of property, tangible and intangible. How comprehensive the interpretation of this description will be depends upon the commission and those whom it employs to conduct the long, laborious task that is necessary if the appraisal is to be thorough. It may be held that three bases exist on which the appraisal might be founded: Cost value, replacement value, and what might be termed liquidation value. Although the resolution of the commission gives no indication of the course which will be followed, it may be assumed that the endeavor will be to ascertain the replacement value of the system as a whole or of those constituent parts which are now, or soon will be, operated as separate properties. While the simplest part of the work will be the appraisal of the actual tangible property, problems will arise when the allowances for contractors' profits, engineering expenses, contingencies and other heavy expenditures of that nature are taken into consideration. During the valuation of the property of the Cleveland Electric Railway eminent engineers and financiers estimated the cost of constructing a street railway in Cleveland as if no street railway system existed there. William Barclay Parsons said that a possible 30 per cent should be allowed above cost value to meet the expenses of engineering, contractors' profits, ordinary contingencies and other exigencies which could not be foreseen. Horace E. Andrews urged that one-third above the estimated cost should be allowed. The estimates of engineering expense alone extended from 5 to 12.5 per cent on the cost of materials and labor. G. T. Bishop, president of the Washington, Baltimore & Annapolis Electric Railway, said that 20 per cent was an underestimate of the allowance that should be added to the cost of the physical property in place.

While expenses of the character just outlined belong properly to the value of the physical property, replaced, other amounts really intangible and yet definite and necessary, should be included. In New York City a complete surface system of railways exists—tracks, equipment, power transmission facilities, power houses, car-houses and organization. In valuing the property of the street railway companies it might be assumed that New York City had

reached its present density of population without any surface street railways.

Suppose that the inhabitants found, some morning, that during the night the surface system had been obliterated, with no evidence left behind to show that it had ever existed. The serious civic problem demanding immediate solution would have to be considered from two aspects: (1) The expense of originating and completing a comprehensive surface system, designed to serve the public not less efficiently than the present arrangement. (2) The time that would be spent in constructing a system of this character. It will be admitted that bankers, engineers and contractors would be glad to have an opportunity to co-operate in the construction of a new system. But it would be just to assume that they would have to undertake the enterprise without previous knowledge of the avenues of traffic or economical arrangements for power or operation possessed as assets by the present system. The new investors would make their own mistakes, learn lessons and profit therefrom. What would it cost to create the system and perfect the working organization? That the cost would be enormous and an intangible asset in a fair valuation of a large property cannot be justly denied. There should also be added to the cost of creating the system an estimate of franchise value. The fact that the system exists is an asset of determinable value. If it would require, as Mr. Parsons estimated, three years to construct an entirely new system in Cleveland, with the streets clear, much more time would be needed in New York to complete a similar enterprise. It is worth many millions of dollars to the public and the companies to have the system on the streets.

It is right that certain essential points of similarity and difference between the railway and the manufacturer should be borne in mind. The railway has passed through the use of the horse and the cable to electricity for motive power. In following the advance in the art it has lost money expended on the development of the earlier systems as well as in other improvements in tracks, cars and methods of conducting its business.

A company is certainly entitled to recognition for expenditures of this kind which are necessary to maintain service abreast of the times. When machinery is sold by a manufacturer, the price received covers all the expenses which were incurred in experiments and mistakes before the invention reached perfection. The manufacturer can make provision in his price for such expenses; but the railway has been limited to 5 cents per passenger, with constantly increasing demands for transfers.

The grave nature of the problems before the commission is indicated in the foregoing. All the factors suggested should be included in the total valuation if the commission intends to maintain a position of fairness toward the security-holders, who will be the real, and, in fact, the only, sufferers if values are lowered unnecessarily. The surface system has been too liberal in the extension of transfer privileges; the inevitable deduction that the average revenue per passenger has been too small to justify the service furnished explains in part the present financial situation of the companies. A clear understanding of the situation implies consideration of the rights of owners of stocks and bonds in the valuation of these properties.

## COTTAGE GROVE AVENUE CAR HOUSE OF THE CHICAGO CITY RAILWAY COMPANY

Late in 1907 the Chicago City Railway Company completed a new fireproof car house at Cottage Grove Avenue and Thirty-ninth Street and it is now storing there all of the cars used on the Cottage Grove and Indiana Avenue lines. The building occupies an irregularly shaped area about 400 ft. wide and 600 ft. long running through from Cottage Grove Avenue to Langley Avenue between Thirty-eighth and Thirty-ninth Streets and is divided into six storage bays, one repair bay and one car house utility bay. The five storage bays on the north side have entrances from the street at both ends, but the sixth storage bay and the repair bay are stub ended with track connections only from Langley Avenue.

The building is constructed of brick walls 13 in. thick, on concrete foundations with reinforced concrete floors and roofs. The five storage bays are 47 ft. wide and 18 ft. high from top of rail to trolley trough. The reinforced

apart center to center, which allows an aisle 26 in. wide between cars 9 ft. wide over sheathing. For 256 ft. of their length they are built with open pits 4 ft. 6 in. deep which extend entirely across the bay. The 5½-in. 100-lb. rails are carried on 6-in. cast iron columns spaced 6 ft. apart. The aisles between pits are floored with 4-in. reinforced concrete slabs, but the space below is entirely open. The pit floor is 4-in. concrete sloped to carry water to two rows of open drains. The pits are reached by cast iron steps at each end between each pair of track rails.

The building is heated by low pressure steam on the Van Auken vacuum return system. A coil of six pipes is mounted on both walls of each bay about 3 ft. above the floor, and four radiating pipes are run under the floor of the middle aisle throughout the length of the pits. In addition two banks of six pipes each are mounted under the roof. The heating plant adjoins the repair shop bay and contains two low pressure boilers, hand fired. A concrete stack 125 ft. high supplies draft.

The interior of the storage bays is painted white above a



Chicago City Railway Car House—Cottage Grove Avenue Entrance

concrete slab roof is supported by steel cross girders made up of angles and fireproofed with 1 in. of adamant plaster on No. 27 herringbone metal lath. These girders are 4 ft. 3 in. deep and rest on pilasters 28 in. wide built in the walls 16 ft. apart. The roof slabs are 4½ in. thick, reinforced with ½-in. corrugated bars. The roof slopes each way from the skylight over each bay and the water is collected in gutters and led off through cast iron down spouts built in the walls. These connect under the pit floors with cross drains which are also connected with the pit drains and lead to the street sewers. A skylight opening 7 ft. 3 in. wide extends the entire length of each bay with a side-light monitor of the same width and 16 ft. long at the center of the length of the bay for ventilation. The skylight over the repair bay is 12 ft. wide and has side lights the entire length. All skylights are supported on both sides throughout their length by 8-in. 18-lb. I-beams built in a concrete curb and supported directly by the top chords of the roof trusses. It is glazed with ¼-in. wire glass.

There are four tracks in each bay, spaced 11 ft. 2 in.

black wainscot 6 ft. high. They are lighted at night by enclosed arc lamps suspended from the roof. The repair bay is triangular in shape and has four tracks holding 14 cars. These tracks connect with a single ladder track running along the south wall which extends into the receiving storage and utility room. The repair bay is 50 ft. wide and is divided in the center by a row of columns supporting runways for two 7½-ton traveling cranes. Two of the tracks have pits 190 ft. long, while the other two have pits 150 ft. and 95 ft. long, respectively. The construction of these pits is similar to those in the storage bays. A 13-in. brick fire wall separates the repair bay from the storage room adjoining it. Arranged around the store room are an office for the car house foreman 7 ft. x 16 ft., a stock room 28 ft. x 16 ft., blacksmith shop 15 ft. 6 in. x 25 ft., shopmen's locker and lunchroom 15 ft. 6 in. x 48 ft., toilet room 15 ft. 6 in. x 29 ft. 6 in., oil and paint store room, entirely fireproof, 10 ft. x 27 ft. and a boiler pump room 14 ft. x 27 ft.

In a triangular addition at the northwest corner of the

car house are provided quarters for the wreck wagon and storage bins for sand, barn feed and advertising cards. Additional sand and salt bins are provided at the outer end of No. 1 bay and No. 6 bay. The wreck wagon quarters contain four ordinary and two box stalls and floor space for an overhead repair wagon, breakdown wagon and hose bridge wagon. One driver is on duty here at all times and he has within call as many barnmen as are needed in answering any emergency alarm. Paved alleys 16 ft. wide lead from the wreck wagon house out to Langley Avenue and north to Thirty-eighth Street.

The end of the house facing Langley Avenue is set back 70 ft. from the sidewalk and the open space is paved with granite. Twenty-two cars may be stored outside of the building at this end. On the Cottage Grove Avenue side the house is set back 52 ft. from the sidewalk and this area is paved with granite. This end of the house is two stories high over four of the five bays, the second story being 64 ft. deep and 194 ft. long. It is faced with pressed brick

counter 20 in. wide on which the men can make out their trip reports. Schedules and assignments of runs are mounted in frames on the walls. At the south end of the room are four tables with chairs where the men can sit down and prepare carefully and comfortably reports of accidents and other events. Several double benches are provided in the center of the room for men waiting to report. The room is lighted, in addition to the windows back of the receivers' cages, by a skylight in the roof 70 ft. long and 8 ft. wide. At night illumination is supplied by incandescent lamp clusters in ground glass bowls mounted in the ceiling.

Opening off of this room through two sets of swinging doors is the toilet room, 14 ft. 6 in. x 66 ft. 6 in. This contains 14 closets, 12 urinals, 16 wash basins and a drinking fountain. It is finished in the same style as the outer room with tile floor and painted walls. At one end is a barber shop large enough for two chairs and a bootblack's stand. The barber who has this concession pays nothing to the



Chicago City Railway Car House—Club Room, Showing Stage

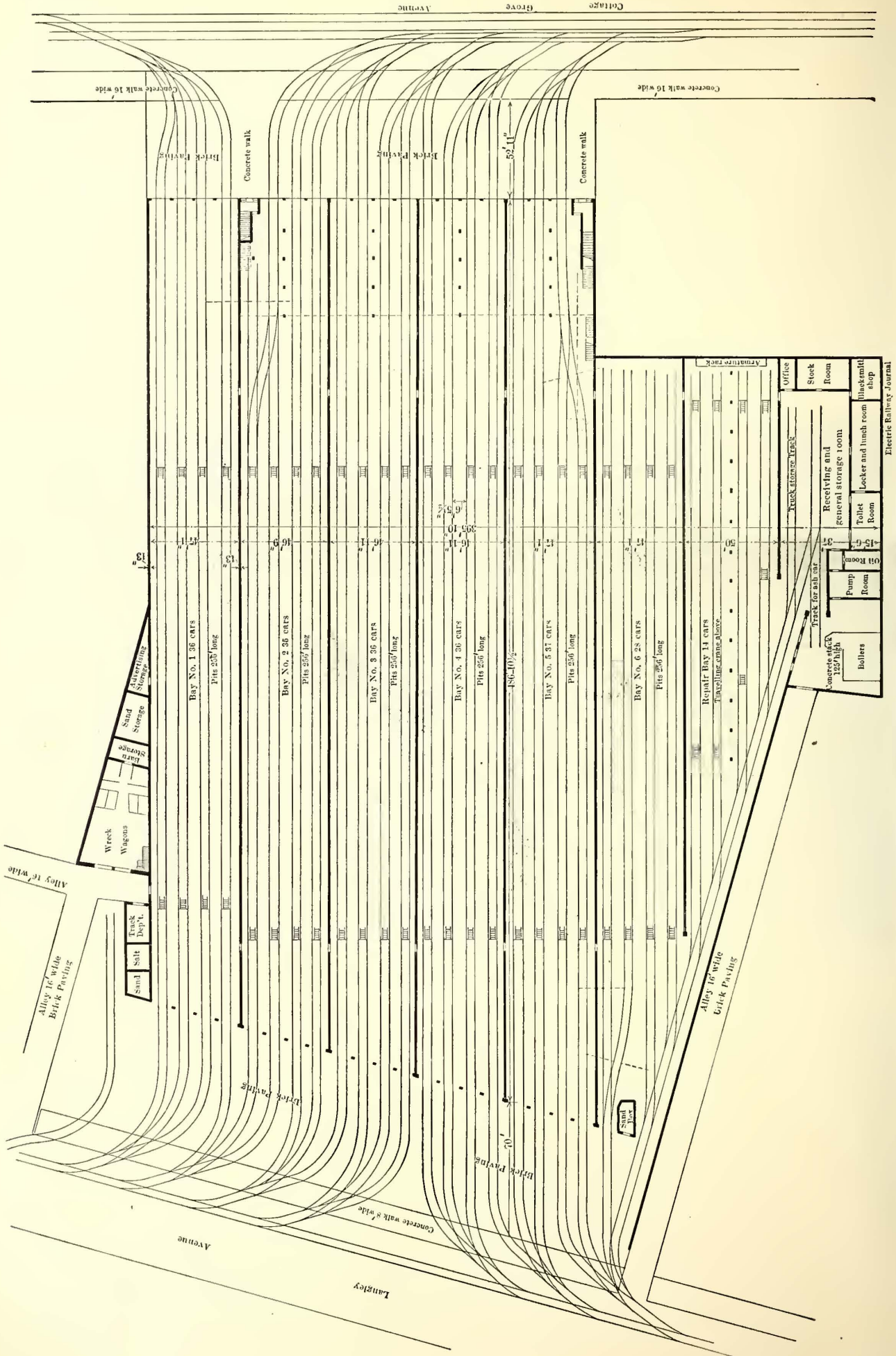
and finished with stone trimmings. On the second floor are the trainmen's room, toilets, dispatcher's room, division superintendent's office and employees' club room.

These rooms are finished in fumed oak and are probably as fine trainmen's quarters as can be found in any street railway car house in the country.

A broad flight of stairs leads up from the plaza in front of the building along the north wall, opening through swinging doors at the top into the trainmen's room, 87 ft. 6 in. x 45 ft. This room is finished in dark quarter-sawed oak with rough plaster walls and ceiling painted a light buff color. The floor is laid with octagonal red tile. Along the east side are the receivers' cages, lost article case, division superintendent's office and dispatcher's room. The receiver's cages and lost article case are behind a wood and glass partition with counters and windows. They are lighted by four large double windows in the outside wall. Around the other three walls of the trainmen's room runs a continuous

company for it and the only restriction placed on him is that not more than 10 cents shall be charged for shaving. The bootblack in attendance receives compensation from the company for taking care of the toilet room and is allowed all he can pick up in odd moments shining shoes.

Adjoining the trainmen's room on the south is the employees' clubroom 81 ft. x 46 ft. This is also finished in quarter sawed oak with painted walls and ceiling, but it has a smooth maple floor, so that it can be used for dancing at entertainments. The room is lighted by seven large double windows on the east side, and at night by 24 five-light clusters in the ceiling and 10 double bracket lights around the walls. At the south end of the room is a stage 22 ft. wide and 12 ft. 6 in. deep, with footlights and small dressing rooms off the stage, for theatrical and other entertainments. Adjoining the clubroom on the west side, but separated from it by a 6-in. tile fire wall, is a storeroom 14 ft. 6 in. wide and 85 ft. long, which is used for storing



Electric Railway Journal

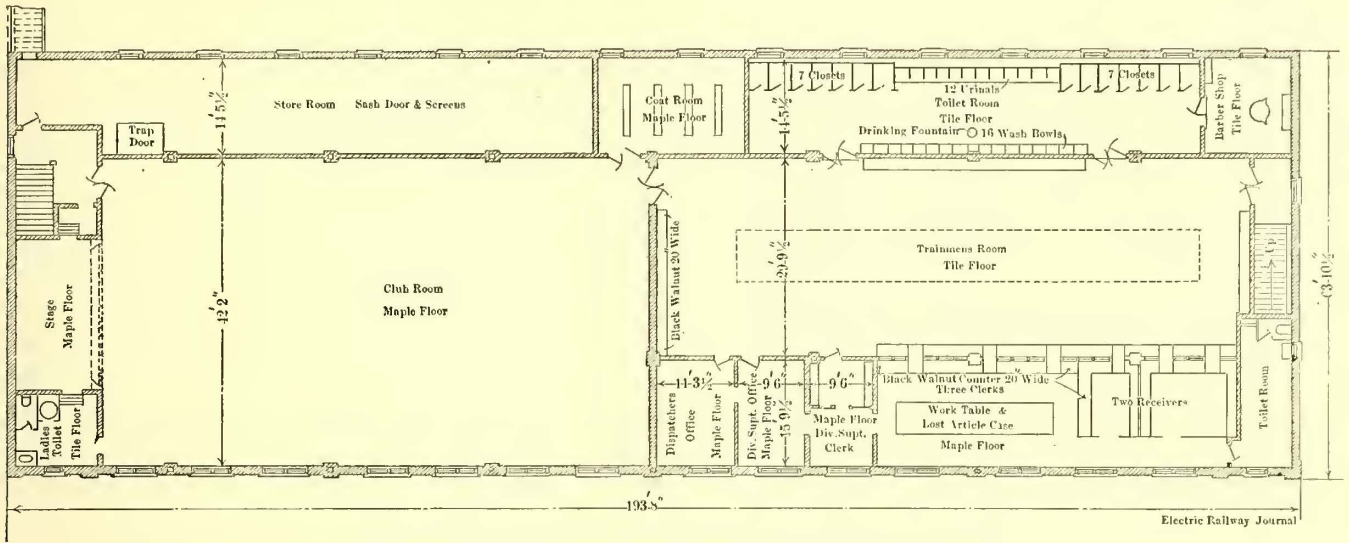
Chicago City Railway Car House—General Plan

window sash and window screens. A trap-door in the floor of this room permits the materials stored there to be raised or lowered from the carhouse floor below.

Opening off from the northwest corner of the clubroom is a coatroom and reading room, 14 ft. 6 in. x 22 ft., which is

to all employees in every department. The railway company furnishes free of charge the building, heat, light and janitor service. The rooms are open from 5 a. m. until 1 a. m., including Sundays.

While the clubrooms are open to all employees, the fur-

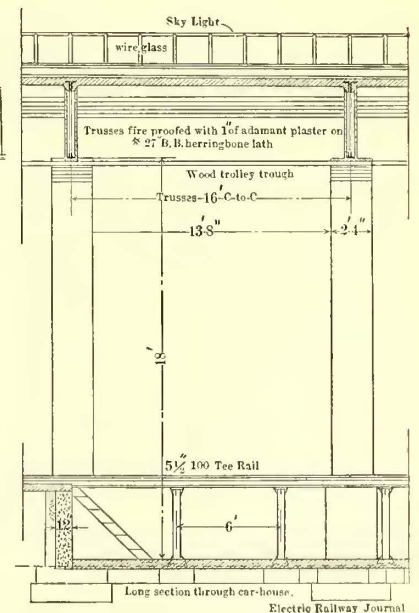
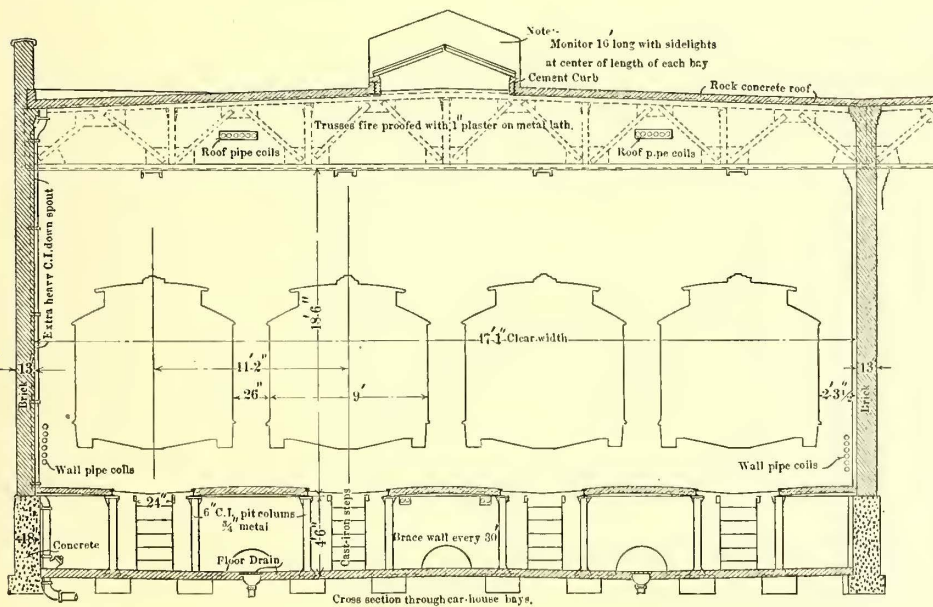


Chicago City Railway Car House—Second Floor Plan

furnished with a long table and a number of comfortable chairs. A library of about 200 volumes is kept in sectional bookcases arranged around the walls of this room, and on the table are kept current issues of daily papers and of most of the technical journals.

The clubroom is furnished with one pool table and one billiard table with cue racks, two chess tables and five card tables, and in addition a number of comfortable straight

nishings are the sole property of an employees' social club which is run solely by and for the men. The membership dues of this club are 25 cents a month, and out of the funds thus obtained all expenses for special entertainments and the purchase of furnishings for the clubroom are made. There are at present between 750 and 800 trainmen making this carhouse their headquarters, and of this number something over 500 are members of the club. The membership



Chicago City Railway Car House—Cross-section Through Car House Bays and Longitudinal Section

chairs and rocking chairs. A small amount of gymnasium apparatus has already been bought and more is to be purchased in the future.

The clubroom and reading room are open without charge

is growing all the time and will probably soon include nearly every employee reporting at this depot. A similar club was in existence when the trainmen on the Cottage Grove Avenue line reported at the old barns now aban-

done. When the new carhouse was opened trainmen from the Indiana Avenue line were brought over in addition to those already running on the Cottage Grove Avenue line, and most of the non-members are men from the Indiana Avenue line who have not yet joined. Non-members have no rights or privileges in the clubroom to the exclusion of

## PLANT FOR PRINTING TRANSFER TICKETS IN BROOKLYN

The Brooklyn Rapid Transit Company prints all transfers and identification slips at a small plant devoted entirely to this work. The office and the storeroom of the printing department are located in the Montague Street cable power house

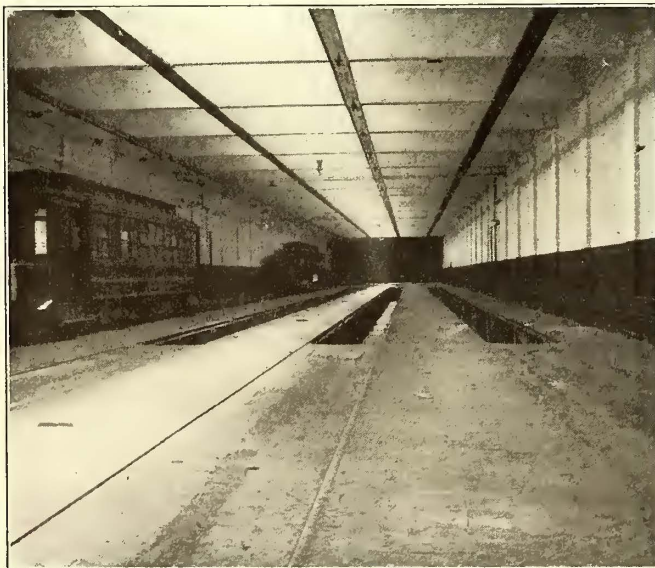


Chicago Car House—Interior of Trainmen's Room

members of the club, and they are not admitted free to the entertainments which the club gives periodically. Members may bring in outside guests as often as they please, provided they do not prevent other club members from enjoying the privileges of the club. The management of the association is in charge of the president, vice-president and secretary and treasurer, who are elected by the men. The division superintendent, whose offices are in the building, of course maintains a supervision over the conduct of the men in the clubrooms. An entertainment committee arranges dances, theatrical and musical performances at more or less regular intervals during the year. Any expense attached to these entertainments is met from the club dues, but no extra assessments are made or admission fees charged to members.

on State Street, Brooklyn. Part of the plant which is not now needed for the cable railway is arranged to accommodate the presses and other machinery, and part is set aside as a storeroom for the paper stock. The plant was established in 1903 and additions have been made to the equipment from time to time until it now includes three Meisel B. B. presses, two Kidder perfecter presses, three Latham stitching machines and a Seybold cutter. One of the Meisel machines, which has just been erected, was installed in order to facilitate the work of this department, as the plant had recently been run overtime.

Each of the presses is belted by a separate motor hung from a bracket in an out-of-the-way place on the wall. One motor driving a shaft, however, is used to operate the stitchers and the cutters. This arrangement reduces greatly the liability that the entire plant might have to shut down on account of motor troubles. Another feature of the printing equipment is a lathe. The foreman of the plant is a pressman and machinist and makes all repairs himself. Each press is in charge of a pressman. No feeders are needed, as the presses combine the advantages of the flat-bed press and the rotary, the paper all being fed from rolls. The capacity of each Kidder press is about 2300 sheets an hour, while that of each Meisel press is about 3000 an hour. Separate forms are used for the different lines to avoid the



Chicago Car House—Car Storage Bay



Chicago Car House—Reading Room

Clubrooms and employees' clubs similar to those at the Cottage Grove Avenue carhouse are provided and maintained at each of the other carhouses belonging to the Chicago City Railway Company, although the quarters in some of the older houses are not so large or so well furnished. It is proposed, however, in all new carhouses to be built, to provide equally large and comfortable clubrooms and to encourage the formation of employees' clubs.

necessity for making changes on the press. When the required issue has been printed for one line a new form for another line is inserted.

Twenty-two transfers are printed at a time in rows of 11 each. As the sheets are delivered from the press they are cut in half, 11 to a row, and are then passed to the cutter. The stitchers pad and bind the transfers in lots of 100 and the identification slips in lots of 50. Each pad is single



stitched. Six girls do all the padding and stitching. After being padded the transfers are removed to two clearing tables, where they are bundled for delivery. The forewoman checks all the work before giving it to the stock clerk. The waste is placed in tin cans and is destroyed daily at the incinerator at Third Street. Paper enough to

**ASH HANDLING IN PHILADELPHIA**

The Philadelphia Rapid Transit Company has recently made an agreement with the individual now holding the contract for the collection of Philadelphia's refuse to transport material gathered by his wagons in the district be-



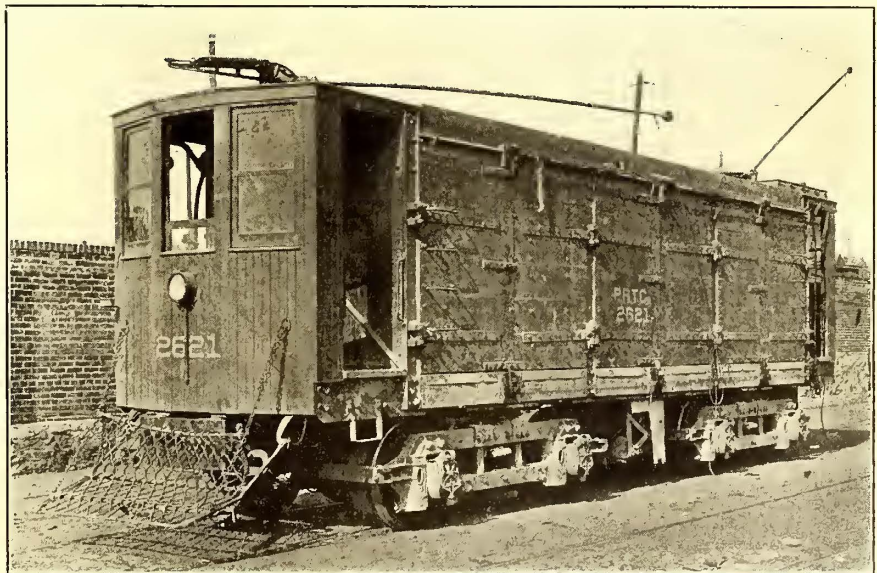
**Philadelphia Ash Service—Wagons in Receiving Station Dumping Rubbish Into Cars Below**

last one month is carried in stock by the printing department.

Sixteen people are employed in the printing department and about 35,000,000 transfers a month are issued. The record for May, 1908, shows a total of 37,722,530. The figures of stock used by the printing department during that month show that the consumption of paper was 23,964 lb. of yellow, 7437 lb. of green, 4730 lb. of salmon, 2779 lb. of white, 2665 lb. of white manila for identification slips and 4235 lb. of magenta for identification checks. Other stock used was 5484 lb. of straw board for backing the pads and 160 lb. of wire for stitching. Of ink 287 lb. of black were used and 84 lb. of green.

The Boston Elevated Railway has petitioned the Massachusetts Board of Railroad Commissioners for approval of a temporary double track in Newbury and Hereford Streets, Back Bay, to enable the company to provide service around the Boylston Street and Massachusetts Avenue bridges while they are undergoing repairs. This is the second request of the company. The first request contained no statement that provision would be made for the subsequent removal of the tracks. The law then did not expressly allow a grant for any other than a permanent location, but has since been revised to include provision for temporary locations. The second petition of the company was framed with the altered conditions in mind.

tween the Delaware and Schuylkill rivers bounded by Poplar Street on the north and South Street on the south. This territory covers an approximate area of four square



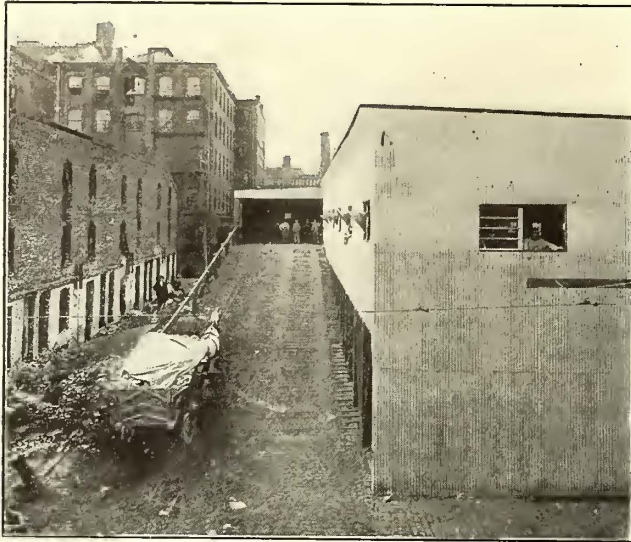
**Philadelphia Ash Service—Side-door Car for Transporting Ashes and Miscellaneous Rubbish**

miles, but other sections will be added if the initial contract proves mutually satisfactory.

All rubbish from the contract district is brought in carts to a corrugated iron receiving station covering a plot of about 150 ft. square on Wood Street between Broad and Fifteenth streets. Here the wagons with the aid of a motor-driven winch ascend a wooden ramp to the dumping floor where the material is dumped directly on a sheet-steel

incline into the cars on the track below. The amount of matter thus brought into the receiving station every night varies from 700 cu. yd. to 1000 cu. yd. and is carried away

by the eight cars built for this work. The capacity of each car varies from 32 cu. yd. to 35 cu. yd. The cars usually travel in pairs at 30-minute intervals, the first leaving the station about 7:30 p. m., and each car averaging four to five trips. They are kept in service from 8 to 12 hours daily. The material is carried about 5 miles to be used as filling in the construction of the Torresdale Boulevard and adjoining depressions. The dumping grounds are provided with a temporary track and bracket trolley which are extended with the progress of the filling operations.



Philadelphia Ash Service Company—Wagon Ascending Ramp Into the Receiving Station

Instead of following the practice of the Brooklyn Rapid Transit Company, which transports ashes in bins carried on flat cars, the Philadelphia company designed a vestibuled multi-side door car with an inverted V-floor. The cars are therefore unloaded by gravity and thus a hoisting outfit for lifting and dumping bins is avoided. The doors on the first cars were hinged at the top and were swung upward by chains. In the later design, the doors are arranged to swing sidewise by operating the through levers controlling the catches at the top and bottom. This type is shown in one of the accompanying half tones; the general dimensions and arrangement of equipment will be noted from the drawing below.

All of the cars have a steel underframe with a superstruc-

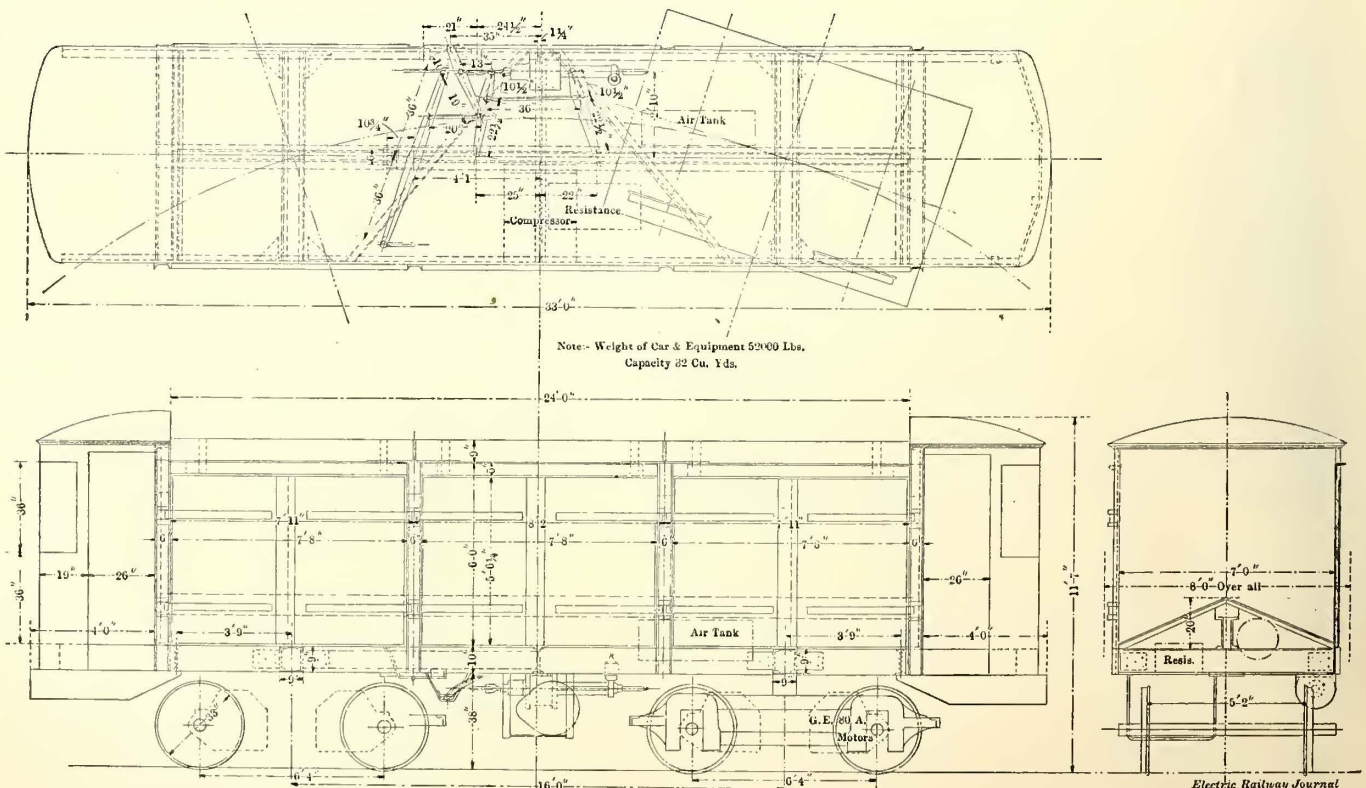
PHILADELPHIA RAPID TRANSIT COMPANY,

Daily Ash Handling Report for the \_\_\_\_\_ day of \_\_\_\_\_ 19 \_\_\_\_\_ Station \_\_\_\_\_

Table with 9 columns: Car No., Motorman, Conductor, Time Leaving Station, Time Arriving at Station, Mileage of Trip, Yards, Location of Dump, ROUTE. Includes a 'Total' row at the bottom.

Total Platform Wages, \$ \_\_\_\_\_ Foreman \_\_\_\_\_

Philadelphia Ash Service—Portion of Blank Used to Keep Account of the Ash-handling Business



Philadelphia Ash Service—Plan, Side and End Elevations of Car

ture of wood, and the parts which come into contact with ashes are protected by a metal lining. The bodies are mounted on Curtis trucks made by the J. G. Brill Company. These trucks have 33-in. diameter Schoen solid steel wheels and 5-in. hammered steel axles, together with Symington journal boxes and center bearings. The operating equipment consists of four GE-80-A inside-hung motors, K-28-B controllers and Westinghouse automatic air brakes with automatic slack adjusters. The cars are furnished with couplers and have extra heavy buffers. They also carry incandescent headlights and fenders like the regular passenger cars.

The accompanying form is used to keep a record of the trips made by these dumping cars so that allocation can be made of the platform wages, approximate power costs and other expenses due to this service. The same blank also shows the amount of rubbish transported on each trip.

**EMERGENCY TOWER WAGON AT ST. LOUIS**

The United Railways Company of St. Louis recently completed in its shops an emergency tower wagon propelled by a four-cylinder, 40-hp gasoline engine. The tower wagon will be kept at one of the trouble stations of the company for responding to emergency calls, both for overhead construction and trouble with rolling stock. If it proves satisfactory the company will build a number of these motor wagons of the same kind.

The wagon measures 13 ft. 9 in. over all and has a width at wheel centers of 4 ft. 10 in. The tower frame is made

selves are 34 in. in diameter and are equipped with 4-in. solid rubber tires. The weight of the wagon complete is 6000-lb. so divided that half of it is carried on the front



Motor Wagon with Tower Lowered

wheels and half on the rear wheels. The car is geared to run at a speed of 20 m.p.h.



St. Louis Motor Tower Wagon with Tower Raised



up from 5-in. channels. The platform of the tower when raised is 18 ft. 6½ in. above the street, and when lowered 11 ft. 8½ in. The wheel base is 9 ft. The wheels them-

With the exception of the engine and the sliding gear transmission, the wagon was built entirely in the shops of the United Railways Company.

**EARNINGS AND OPERATING COSTS OF THE BROOKLYN RAPID TRANSIT COMPANY**

A segregated statement of earnings during the calendar year 1907 for each company in the Brooklyn Rapid Transit system has been submitted to the New York Public Service Commission, First District, in connection with the investigation of the 10-cent fare charge to Coney Island. These earnings are shown in Table I, published herewith. The company presented analyses of earnings and disbursements to show that not only would the 5-cent fare which the commission has been asked to prescribe be unprofitable, but that the lines are not remunerative with the present 10-cent fare.

There were also submitted statistical tables indicating that the loss resulting from operation of the Coney Island lines in 1907 was \$463,444. The companies involved in this

transportation. The amount expended for maintenance per car-mile in the last five years is as follows: 1903, 2.49 cents; 1904, 3.33 cents; 1905, 4.32 cents; 1906, 3.90 cents; 1907, 3.93 cents. In addition to the maintenance expenditures charged in operating expenses there was expended for additions and betterments and charged against earnings \$208,482 in 1903; during 1907 there was similarly expended and charged \$442,063. The capital expenditures of the companies during this period exceeded \$35,000,000 and were financed by the Brooklyn Rapid Transit Company through the sale of its first refunding 4 per cent bonds. Testimony was given by Howard Abel, comptroller of the Brooklyn Rapid Transit system, to show that these 4 per cent bonds had been issued only to the extent of actual cost of the property and that the \$3,843,072 discount resulting from the sale of the bonds had been charged against surplus

TABLE I.—BROOKLYN RAPID TRANSIT COMPANY—EARNINGS BY COMPANIES IN 1907.

Year Ended Dec. 31, 1907.	Brooklyn Heights Railroad.	Brooklyn Union Elevated Railroad.	Nassau Electric Railroad.	Brooklyn Queens Co. Suburban Railroad.	South Brooklyn Ry.	Sea Beach Ry.	Coney Island & Gravesend Ry.	American Ry. Traffic Co.	Transit Development Co.	Canarsie Railroad.	Brooklyn Rapid Transit Co.
<b>GROSS EARNINGS:</b>											
Passenger earnings.....	\$7,839,127	\$5,762,769	\$3,167,570	\$1,630,965	\$300,213	\$261,417	\$47,923	.....	.....	.....	.....
Freight, mail and express.....	222,964	23,057	72,775	24,179	7,654	3,522	1,684	.....	.....	.....	.....
Advertising.....	47,014	81,352	16,071	6,502	676	350	206	.....	\$18	.....	.....
<b>Total earnings from operation.....</b>	<b>\$8,109,105</b>	<b>\$5,867,178</b>	<b>\$3,256,416</b>	<b>\$1,661,646</b>	<b>\$308,543</b>	<b>\$265,289</b>	<b>\$49,813</b>	<b>\$390,307</b>	<b>\$18</b>	<b>.....</b>	<b>.....</b>
Operating expenses.....	5,206,977	3,103,183	2,283,674	1,041,397	304,062	201,049	41,657	360,593	†712,337	‡25	§63,255
	*5,058,609	*3,090,311	*2,234,164	*1,025,678	*299,735	*199,083	*40,717	.....	.....	.....	.....
<b>Net earnings from operation.....</b>	<b>\$2,902,128</b>	<b>\$2,763,995</b>	<b>\$972,742</b>	<b>\$620,249</b>	<b>\$4,481</b>	<b>\$64,240</b>	<b>\$8,156</b>	<b>\$29,804</b>	<b>\$712,355</b>	<b>†\$25</b>	<b>‡\$63,255</b>
Income from other sources:											
Rent of land and buildings.....	16,717	15,475	6,050	2,488	18,326	505	.....	164	5,301	.....	.....
Rent of tracks and structure.....	11,523	41,895	61,355	1,200	208	208	.....	.....	.....	.....	.....
Miscellaneous.....	75,729	70,513	62,409	23,203	3,425	301	6,763	60,382	62,757	\$9,730	201,595
<b>Total income.....</b>	<b>\$3,006,097</b>	<b>\$2,891,878</b>	<b>\$1,102,616</b>	<b>\$647,140</b>	<b>\$26,440</b>	<b>\$65,254</b>	<b>\$14,919</b>	<b>\$90,350</b>	<b>\$780,413</b>	<b>\$9,705</b>	<b>\$138,340</b>
<b>Deductions:</b>											
Taxes.....	\$437,231	\$183,306	\$177,630	\$64,219	\$5,755	\$3,747	\$660	\$1,200	\$4,700	...	\$33,750
Rentals:											
Brooklyn Union Elevated R. R.....	221,667	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Brooklyn City Railroad Co.....	1,554,303	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
South Brooklyn Railway Co.....	980	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Prospect Park & Coney Island Ry. Co.....	6,667	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Sea Beach Railway Co.....	4,333	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
So. Brook. Ry. Co., account P. P. & C. I.....	.....	.....	.....	.....	33,333	.....	.....	.....	.....	.....	.....
Interest on real estate mortgages.....	†5	.....	.....	.....	4,944	.....	.....	.....	1,588	.....	.....
Interest on loans.....	15,449	27,600	.....	.....	17,232	.....	.....	11,781	86,904	.....	251,001
Interest on bonds.....	12,500	900,000	638,573	331,200	.....	21,667	.....	.....	.....	.....	1,497,524
Interest on certificates of indebtedness.....	312,664	363,682	134,200	49,092	58,454	6,715	526	24,726	621,174	.....	.....
Interest on Brooklyn City Con. Adv.....	161,414	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dividend preferred stock.....	.....	208,333	260,000	.....	.....	.....	.....	.....	.....	.....	1,782,275
Total.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Less Brooklyn Rapid Transit Co.'s proportion of interest on securities.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	2,439,716
<b>Total deductions.....</b>	<b>\$2,727,212</b>	<b>\$1,682,921</b>	<b>\$1,210,403</b>	<b>\$444,511</b>	<b>\$119,718</b>	<b>\$32,129</b>	<b>\$1,192</b>	<b>\$37,707</b>	<b>\$714,366</b>	<b>.....</b>	<b>†657,441</b>
<b>Net income.....</b>	<b>\$278,885</b>	<b>\$1,208,957</b>	<b>†107,787</b>	<b>\$202,629</b>	<b>†93,278</b>	<b>\$33,125</b>	<b>\$13,727</b>	<b>\$52,643</b>	<b>\$66,047</b>	<b>9,705</b>	<b>\$795,781</b>
Special appropriations.....	128,694	69,314	87,888	10,340	4,758	.....	1,126	82	38,787	.....	.....
<b>Surplus.....</b>	<b>\$150,191</b>	<b>\$1,139,643</b>	<b>†195,675</b>	<b>\$192,289</b>	<b>\$98,036</b>	<b>\$33,125</b>	<b>\$12,601</b>	<b>\$52,561</b>	<b>\$27,260</b>	<b>\$9,705</b>	<b>\$795,781</b>
Car mileage.....	27,686,627	21,812,207	12,930,318	6,004,275	1,527,108	979,044	194,691	.....	.....	.....	.....

\*Excluding freight, mail and express expenses as follows: Brooklyn Heights Railroad, \$148,368; Brooklyn Union Elevated Railroad, \$12,872; Nassau Electric Railroad, \$49,511; Brooklyn, Queens County & Suburban Railroad, \$15,719; South Brooklyn Railway, \$4,327; Sea Beach Railway, \$1,967; Coney Island & Gravesend Railway, \$940.  
 † Credit.  
 ‡ Deficit.

traffic and their respective car-mile cost of operation are shown in Table II.

In computing the cost of operating the Coney Island lines the car-mile unit was employed; fixed charges and taxes were treated similarly. This method of determining the net earnings was considered fair to the complainant in the proceeding, and it was stated that the lines and their equipment could not be duplicated on the basis of average cost on account of the length of road, greater power plant capacity, expensive terminal facilities, private rights of way and heavy investment in equipment, the full capacity of which are required on days of maximum traffic only, say three or four days during the entire season.

It was also shown that the desire of the Brooklyn Rapid Transit interests has been to build up the property, notwithstanding that this has resulted in giving the public an erroneous conception of the true cost of city passenger

earnings, so that the inclination had been to relieve rather than burden the property with fixed charges.

There were also placed in evidence statements showing the relative capitalization of the properties in the Brooklyn Rapid Transit System prior to their reorganization and acquisition by the parent company. The important feature of these statements was the reduction in obligatory interest charges of about \$700,000 per annum. This exhibit was presumably introduced to refute the allegation that had it not been for an inflation in capital obligations the business to Coney Island could be conducted at a profit even with a reduction in fare from 10 cents to 5 cents per passenger. Supplementing these figures a statement was filed showing that on the basis of the operating cost of last year and the present rate of fare, 10 cents, eliminating all fiscal charges other than taxes and in lieu thereof assessing the traffic with an interest charge of 6 per cent on the cost to reproduce the

actual rolling stock in service on the Coney Island lines during 1907, 6 per cent on the cost of the power plant necessary to operate the number of cars used, the resultant loss would exceed \$100,000, and that if to this sum there should be added 6 per cent on the assessed valuation of the private rights of way, over which the traffic is carried, the actual loss would exceed \$300,000.

The testimony showed the extent of the burden which the

TABLE II.—BROOKLYN RAPID TRANSIT COMPANY—CAR-MILE OPERATING EXPENSES IN 1907 OF CONEY ISLAND LINES.

	Brooklyn Heights R. R., cts.	Brooklyn Union Elev. R., cts.	Nassau Electric R. R., cts.	Brooklyn, Queens Co. & Suburban R. R., cts.	South Brooklyn Ry., cts.	Sea Beach cts.	Coney Island & Gravesend Ry., cts.
Car-mile expenses, calendar yr. 1907.							
Maintenance of way and structure...	.0142	.0124	.0138	.0144	.0121	.0118	.0153
Maintenance of way and equipment...	.0302	.0184	.0271	.0285	.0161	.0172	.0404
Operating power plant .....	.0249	.0462	.0241	.0258	.0379	.0449	.0289
Operat. cars, train- men's wages.....	.0556	.0304	.0543	.0544	.0373	.0335	.0627
Operat. cars, other expenses .....	.0251	.0250	.0214	.0168	.0782	.0772	.0330
Damage and legal expenses .....	.0229	.0028	.0243	.0225	.0099	.0089	.0164
General expenses...	.0098	.0064	.0077	.0084	.0047	.0098	.0124
Totals.....	.1827	.1416	.1727	.1708	.1962	.2033	.2091
Special appropria- tions.....	.0046	.0031	.0067	.0017	.0031	....	.0057

Brooklyn Rapid Transit Company is carrying by furnishing funds to meet losses from traffic on the Coney Island and other outlying lines and providing for enlargement of facilities in the hope that at some future date the present unprofitable territory will become settled and remunerative. As an illustration of the manner in which the company has

TABLE III.—BROOKLYN RAPID TRANSIT COMPANY—CAR-MILE REPAIR AND RENEWAL EXPENSES.

	1903.	1904.	1905.	1906.	1907.
Rep. and ren. track and roadway...	.00504	.00572	.00747	.00703	.00688
Rep. and ren. electric line.....	.00271	.00203	.00325	.00300	.00317
Rep. and ren. bldgs. and fix.....	.00164	.00259	.00352	.00290	.00278
Rep. and ren. steam plant.....	.00092	.00211	.00334	.00196	.00233
Rep. and ren. electric plant.....	.00043	.00099	.00087	.00049	.00064
Rep. and ren. cable plant.....	.00024	.00022	.00011	.00017	.00019
Rep. and ren. passenger cars.....	.00527	.00731	.01005	.01020	.01009
Rep. and ren. elec. equip. of cars...	.00470	.00711	.01028	.00903	.00798
Rep. and ren. of locomotives.....	.00127	.00087	.00017	.00005	.00005
Rep. and ren. miscel. equip.....	.00049	.00063	.00068	.00080	.00091
Miscellaneous shop expenses.....	.00226	.00285	.00353	.00340	.00436
Amt. expended for rep. and main...	.02497	.03333	.04327	.03903	.03938
Exp. for additions and betterments	.00396	.00696	.00773	.00894	.00636
Special reserve.....	.....	.....	.....	.00770	.....
Total.....	.02893	.04029	.05100	.05567	.04574
Per ct. increase of mainten'ce expense over previous year	....	45.80	34.59	4.20	2.16
Per ct. increase of mainten'ce expense over previous year, including spe- cial reserve..	....	....	....	20.93	11.97
Gross earn. from operation ...	\$13,280,321	\$14,755,158	\$16,333,445	\$18,473,328	\$19,381,587
Per ct. increase over previous year .....	....	11.11	10.69	13.10	4.92
Car mileage...	52,668,709	55,136,966	58,625,835	64,954,731	69,593,725
Per ct. increase over previous year .....	....	4.69	6.33	10.80	7.14

been carrying unprofitable lines since its advent into Brooklyn in 1896, the earnings of the Brooklyn, Queens County & Suburban Railroad were exhibited. They showed that while the investment return on the entire lines of the latter company in the years 1906 and 1907 was reasonable, the returns of previous years had been insignificant; the first seven years of operation of that property were so lean as to result in losses aggregating \$357,854. The Brook-

lyn Rapid Transit Company, in order to save the Brooklyn, Queens County & Suburban Company from bankruptcy, made good these losses.

Table III shows the increase in expenditures for repairs and maintenance by the Brooklyn Rapid Transit system per car-mile during the years 1903 to 1907, inclusive.

### FRATERNAL LEAGUE OF THE PHILADELPHIA RAPID TRANSIT COMPANY

On April 30 officials and other employees of the Philadelphia Rapid Transit Company organized the Fraternal League of the Philadelphia Rapid Transit Company, to promote a closer feeling among the members and establish a death benefit fund. Membership in this association is limited to male employees of the official and clerical forces who are between the ages of 18 and 40 years at the time of entering the service. The maximum age limit is 50 years if the employee entered the service from the age of 40 years. Membership ceases with the termination of employment by the railway company.

The association is governed by a board of eight trustees, elected as follows: One from the executive department, one from the engineering department, one from the accounting department, two from the claim department and three from the transportation department. From the date of the first election one trustee each from the executive, engineering, claim and transportation departments holds office for two years, and one each from the accounting and claim departments with two from the transportation department for one year; thereafter the term of all trustees is to be two years each. The trustees elect from their number a president and vice-president for one year. The secretary-treasurer, who is elected at the annual meeting, is required to give a bond and receives an annual minimum compensation of \$100, and \$12.50 per annum for each additional 50 members in excess of 300.

The dues are 50 cents a month, and any member in arrears for three months forfeits all rights to the benefit until one month has elapsed after all arrearage has been paid. Members in arrears for six months are considered suspended and cannot be reinstated except by the action of the trustees and the payment of all arrearages. Such delinquents cannot become beneficiaries until three months after they have been reinstated.

The death benefits are as follows: To charter members, \$100 for less than three months' membership; \$200 for three to six months; \$300 for six months or over. The heirs of non-charter members receive \$100 for less than six months, \$200 for 6 to 12 months and \$300 for 12 months or over. Should there be no legal heirs, the trustees take charge of the remains of the deceased and provide for burial out of the money that would otherwise be paid to the heirs.

The Bavarian Government has decided to introduce electricity on three railway lines near the Austrian frontier. In an official report which has just been issued on this project the cost of equipping the principal line is estimated at \$442,500 and the amount of power required as 1,700,000 kw-hours annually. The cost of the entire project is estimated at \$5,500,000 and will involve an extensive development of water power. In view of the importance of the undertaking, an international competition for designs will be held. The careful investigation of the possibilities of electric traction being made by the Prussian railway authorities adds interest to this proposal.

## COMMISSIONS OF CENTRAL STATES DISCUSS ELECTRIC AND STEAM RAILWAYS

In response to a call from the Michigan Railroad Commission 15 members of the railroad commissions of Ohio, Illinois, Indiana, Wisconsin and Michigan met in Chicago on June 12 and 13 to discuss subjects of common interest. C. L. Glasgow, chairman of the Michigan commission, presided. He explained that the commissioners had been called together to discuss problems of common interest to the railroads and the people of the North Central States. The decisions of any State commission would bear more weight and thus be accepted with less opposition if it were known that the cases on which they were based had been jointly discussed by the commissioners of several adjoining States; thus, the meeting was called so that there might be uniform construction of laws and regulations enforced in the various States.

Some of the subjects discussed which are of particular interest to electric railways were: Rules for the operation of interurban roads, interchange of traffic between steam and electric roads, prevention of accidents and inspection and repair of equipment.

W. J. Wood, of the Indiana commission, first addressed the meeting on the subject of accidents. He outlined the plans which had been followed by the commission of Indiana to carry on a complete inspection of the railways in that State. The Indiana commission publishes an accident bulletin every three months, and takes active measures to inquire into the causes of all railway accidents. Whenever necessary the commissioners examine the railroad employees under oath and are said to get more dependable information regarding the causes of accidents than could be obtained from any other source. Mr. Wood stated that the railroads have heartily approved the efforts of the commission to prevent unnecessary loss of life. The commission draws a sharp line between those accidents for which the railroad is responsible and those which are occasioned by trespass or similar contributory negligence. A strong plea by Mr. Wood was made for the protection of railroads from trespassers. The Indiana commission proposes to do all that is within its power to bring about legislation which will protect the railroads from trespassing of any sort.

Commissioner Wood called particular attention to the fact that there are 10,000 or more unprotected highway crossings in Indiana, and that a large number of these comprise the crossing of both a steam and an electric line by a highway. There are more than 1500 miles of interurban track road in the State, and a considerable portion of the trackage is parallel to steam railroad lines. On account of the increased danger at double crossings between public roads and parallel steam and electric tracks the commission has requested that at such points the railways change the crossing signs so that in addition to the usual words "Railroad Crossing" there will be a horizontal board below bearing the words "Two Crossings." A detailed drawing with dimensions of such a sign, as installed by the Indiana Union Traction Company, was illustrated in the *ELECTRIC RAILWAY REVIEW* for March 21, 1908, page 359.

Commissioner Wood was most enthusiastic in his demands for the separation of railroad grades. He said that there is no law in Indiana compelling the separation of grades, but thought that the safety of life demanded special efforts to increase the safety factor at railroad crossings. This subject he thought more important by far than the problems of rates, regulation, interchange, etc.

To provide for continued action and study with regard to the future separation of grades, Commissioner Wood presented the following resolution, which after being considered by a committee comprising one representative from each of the five State commissions represented, was passed unanimously:

*Resolved*, That a committee consisting of one member from each commission represented in this convention shall be appointed to take up and consider the subject of the separation of highway and railroad grade crossings, and that the members shall correspond with each other on this subject, and shall report to the commissions of which they are members, what can best be done and provided in this matter.

The chairman appointed the following members of this committee: J. C. Morris, Ohio; B. A. Eckhart, Illinois; W. J. Wood, Indiana; G. W. Dickinson, Michigan; J. M. Winterbotham, Wisconsin.

In accordance with another resolution a committee was appointed to consider the preparation of a statute to prevent trespassing on railroads. This committee also has as part of its assigned work the promotion of publicity through the medium of the press with a view to warning the public against reckless trespassing on railroad property.

A third committee was appointed to draw up a constitution and by-laws to be submitted at a meeting to be held on Dec. 4, when the commissions represented at the Chicago meeting will complete a permanent organization so that the unified work may be continued and mutual assistance be given.

Members of the Indiana commission described the work which has resulted in the adoption of uniform rules in that State for operating interurban railways. It is believed that operation in accordance with these rules will greatly reduce the possibilities of accidents. One important factor with regard to the enforcement of these rules is that to disobey the rules is a misdemeanor in Indiana, punishable by imprisonment.

The Michigan commissioners told of their co-operation with electric railway managers regarding methods of operation and inspection. This commission is studying proper rules for operation, but criticises the methods of breaking in train crews on the ground that the length of time of probation and breaking in men before service is too short.

In the discussion of interurban operation the Ohio commissioners complimented the standard rules of the Central Electric Railway Association, and outlined the steps taken preliminary to their adoption. Some criticism, however, was expressed on account of recent laxity on the part of the managements of a few of the Ohio interurban railways.

The Indiana commissioners have in mind a more thorough study of brake rigging on interurban cars. It was suggested that a large factor of safety would be added if the hand-brakes were provided with a rigging separate from that operated by the air cylinders.

Some of the subjects discussed were: Statutes on crossings between steam and electric roads, protection of crossings, stopping of cars and trains at unprotected crossings, handling of train orders, efficiency of various de-rails and the interchange of freight and passenger traffic between steam and electric roads. The advisability of requiring the installation of trolley troughs over the conductor wires for a specified distance on either side of the steam railway track at a combination steam and electric railway crossing was considered, and the members of all the commissions represented were highly in favor of such a requirement.

**UNIFORM RULES FOR OPERATION OF INTERURBAN ROADS ADOPTED IN INDIANA**

The report of the committee of managers of Indiana electric railways recommending uniform rules to govern the operation of interurban roads has been approved by the Indiana Railroad Commission. The committee was appointed by the Indiana commission at a conference at the State House, Indianapolis, on February 18, 1908, with the understanding that it would formulate rules which would be satisfactory to representatives of Indiana interurban roads and to the commission.

The committee reports that it "had various meetings from time to time, at all of which the State Railroad Commission was very efficiently represented by its chief inspector, A. Shane, and Inspector D. E. Matthews, whose aid and counsel have been of great value to the committee," and that it had finally formulated a set of rules which appear to be satisfactory to the committee and to the representatives of the commission, and on May 2, 1908, forwarded to each interurban road of Indiana a proof copy of the rules as formulated. The committee adds:

The answers received from the various roads, with very few exceptions, were that they were unconditionally satisfied with the rules as presented. By correspondence and a personal meeting with representatives of the roads that had criticisms to any extent, such slight changes have been made in the rules as originally submitted by your committee as we believe make them satisfactory to these roads, and we feel confident will make them none the less satisfactory to the commission and representatives of the other roads.

Of the total number of 23 different interurban railroads of the State, with a total mileage of 1468, we have received answers from 16, with a total mileage of 1279, or about 88 per cent, all of which we believe, as stated above, with the slight changes which have been made, are satisfied with the rules in their present shape.

In the book as presented is included also a set of rules for track and roadway department and for maintenance of overhead line, as prepared by a committee with A. A. Anderson as chairman.

It is also deemed advisable to include in the book copies of some of the principal sections of the criminal code of the State of Indiana which apply particularly to the operation of electric interurban railroads.

We feel that the representatives of interurban railroads of Indiana have had ample opportunity to look over these rules to ascertain whether or not they are satisfactory and that the formal vote taken thereon should be such as to insure their use almost without exception on the interurban roads of Indiana.

The task which was set for the committee was found to be no easy one and in making the report the committee added: "We feel that we are presenting rules which are perfectly satisfactory for the operation of electric interurban railroads, yet we appreciate the fact almost any rules are easily subject to criticism from a standpoint of arrangement, wording, rules which might be added, or rules which might be eliminated."

The names of the companies which have accepted the rules and the mileage operated in each instance follow:

Name of Line.	Miles in Operation.
Ft. Wayne & Springfield Railway.....	22
Indianapolis & Cincinnati Traction Company.....	108
Indianapolis, Crawfordsville & Eastern Traction Co..	45
Marion, Bluffton & Eastern Traction Company.....	32
Terre Haute, Indianapolis & Eastern Traction Co..	351
Ft. Wayne & Wabash Valley Traction Company.....	148
Chicago, South Bend & Northern Indiana Railway....	47
Evansville & Southern Indiana Traction Company....	28
Indiana Union Traction Company.....	313
Evansville & Eastern Electric Railway and Evansville & Mt. Vernon Electric Railway.....	38

Name of Line.	Miles in Operation.
Toledo & Chicago Interurban Railway.....	37
Angola Railway & Power Company.....	4
Indianapolis, Columbus & Southern Traction Company.	62
Lebanon-Thorntown Traction Company.....	10
Louisville & Southern Indiana Traction Company.....	6
Kokomo, Marion & Western Traction Company.....	28

The following signed the report: C. D. Emmons, general manager Ft. Wayne & Wabash Valley Traction Company; C. C. Reynolds, general manager Terre Haute, Indianapolis & Eastern Traction Company; H. A. Nicholl, general manager Indiana Union Traction Company; Fletcher M. Durbin, general manager Evansville & Southern Indiana Traction Company; A. A. Anderson, general manager Indianapolis & Louisville Traction Company. At a meeting on June 5 the rules were approved by the representatives of interurban lines and by the Indiana Railroad Commission.

**INDICATING DIRECTION AND TIME BY TRAIN NUMBERS**

Within the last month the Sheboygan (Wis.) Light, Power & Railway Company has issued a new form of timetable for governing the trains on the Plymouth Division. One page from this time table is reproduced herewith. The original page, 4¼ in. wide by 8½ in. high, and other pages

TIME TABLE NO. 11

STATIONS	EAST BOUND										READ DOWN										EAST BOUND										
	40	41	42	43	44	45	46	47	48	49	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
Plymouth... Lv	00																														
Fri. Rose... Siding	01	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	4:00	4:30	5:00	5:30	6:00	6:30	7:00	7:30	8:00	8:30	9:00
Green Pk... Switch	02	5:10	5:40	6:10	6:40	7:10	7:40	8:10	8:40	9:10	10:40	11:10	11:40	12:10	12:40	1:10	1:40	2:10	2:40	3:10	4:10	4:40	5:10	5:40	6:10	6:40	7:10	7:40	8:10	8:40	9:10
Pine Grove... Siding	03	5:15	5:45	6:15	6:45	7:15	7:45	8:15	8:45	9:15	10:45	11:15	11:45	12:15	12:45	1:15	1:45	2:15	2:45	3:15	4:15	4:45	5:15	5:45	6:15	6:45	7:15	7:45	8:15	8:45	9:15
Sheb. Falls Jct. Ar	04	5:20	5:50	6:20	6:50	7:20	7:50	8:20	8:50	9:20	10:50	11:20	11:50	12:20	12:50	1:20	1:50	2:20	2:50	3:20	4:20	4:50	5:20	5:50	6:20	6:50	7:20	7:50	8:20	8:50	9:20
Sheboygan Falls Ar	05	5:25	5:55	6:25	6:55	7:25	7:55	8:25	8:55	9:25	11:05																				
Sheb. Falls Jct. Lv	06	5:44	6:20	7:04	7:40	8:04	8:40	9:04	9:40	10:04	11:09	11:04	12:04	12:04	1:04	2:04	3:14	4:04	5:04	6:04	7:04	8:04	9:04	10:04	11:04	12:04	1:04	2:04	3:04	4:04	5:04
Riverdale... Wye	07	10:9	6:06	6:51	7:26	8:10	9:10	10:10	11:16	12:10	1:10	2:10	3:10	4:10	5:10	6:10	7:10	8:10	9:10	10:10	11:10	12:10	1:10	2:10	3:10	4:10	5:10	6:10	7:10	8:10	9:10
Goswitz... Switch	08	11:6	6:06	6:56	7:26	8:12	9:12	10:12	11:17	12:12	1:12	2:12	3:12	4:12	5:12	6:12	7:12	8:12	9:12	10:12	11:12	12:12	1:12	2:12	3:12	4:12	5:12	6:12	7:12	8:12	9:12
18 Erie... Switch	09	13:7	6:10	6:56	7:35	8:18	9:18	10:18	11:23	12:18	1:18	2:18	3:18	4:18	5:18	6:18	7:18	8:18	9:18	10:18	11:18	12:18	1:18	2:18	3:18	4:18	5:18	6:18	7:18	8:18	9:18
Sheboygan... Ar	10	13:2	6:20	7:06	7:45	8:27	9:27	10:27	11:32	12:27	1:27	2:27	3:27	4:27	5:27	6:27	7:27	8:27	9:27	10:27	11:27	12:27	1:27	2:27	3:27	4:27	5:27	6:27	7:27	8:27	9:27

1 Daily Except Sunday      2 Sundays Only

**Train Numbers to Indicate Time and Direction**

referring to rates, rules, fares, accidents, signals and special instructions are bound in a book in board covers, convenient for carrying in the pocket.

The system of train numbers is novel and is explained in the book as follows:

**KEY TO TRAIN NUMBERS**

The first digit or figure indicates the hour previous to leaving time at terminal. In train numbers having three numerals (as 101) the first two digits indicate the hour.

- The final digits indicate as follows:
- 1 First Class Train a. m. going West
  - 3 " " " p. m. " "
  - 2 " " " a. m. " East
  - 4 " " " p. m. " "
  - 5 Second " " a. m. " West
  - 7 " " " p. m. " "
  - 6 " " " a. m. " East
  - 8 " " " p. m. " "

Example—Train 101 indicates a first class train going west during hour following 10 a. m. No. 44 indicates a first class train going east during hour following 4 p. m. No. 58 indicates second class train going east during hour following 5 p. m., etc.

All employees are required to refer to trains by numbers. All verbal or written reports, orders, etc., must designate trains by number.

The Amsterdam & North Holland Electric Railway Company has been granted a concession by Holland to build and operate an electric railway system in Holland. The road will be about 30 miles long and will extend from Amsterdam north through Zaandam to Krommenie from Zaandyk to Wyk-aan-Zee, and Wormerveer to Purmerend.

## COMMUNICATIONS

### INTERSTATE COMMERCE CLASSIFICATION

MINNESOTA RAILROAD & WAREHOUSE COMMISSION  
St. PAUL, Minn., June 9, 1908.

To the Editors:

The amended tentative classification of operating expenses recently promulgated by Prof. H. C. Adams, of the Interstate Commerce Commission, divides electric railways into three classes, viz.:

Class A. Annual gross revenue, \$1,000,000 and over, 88 accounts.

Class B. Annual gross revenue, \$250,000 to \$1,000,000, 58 accounts.

Class C. Annual gross revenue under \$250,000, 36 accounts.

The classification has been considered carefully by this commission with the result that its adoption for State use was recommended to Professor Adams. Prior to this action, however, the classification was submitted to the controller of one of our largest systems of electric railways in this State, who expressed himself as greatly pleased with the result; and as the text for these accounts has been prepared there seems now to be no reason why the classification in question should not be adopted by the interstate and the State commissions, and this commission has suggested that it become effective on Oct. 1, 1908, so as to give the carriers ample time to conform to the changes found necessary.

This commission is of the opinion that the division of the electric lines into three classes is much more equitable than that formerly submitted; but if it is found to be unsatisfactory after being placed in effect it can be modified as experience demands.

On the question of the depreciation accounts this commission is of the opinion that the operating expenses should stand for the actual expenditures only and should not include the depreciation, which in most cases would be merely an estimate, but that the depreciation should be deducted from the income account annually in accordance with the facts to be determined by each company.

THOMAS YAPP,  
Assistant Secretary.

### THE CANDIDACY OF JOHN HAYS HAMMOND

NEW YORK, June 13, 1908.

To the Editors:

John Hays Hammond, president of the Institute of Mining Engineers, has performed a public service of great value in offering himself as a candidate for the Republican nomination to the office of Vice-president of the United States. The professional politicians and certain unseeing writers for the daily press apparently are astonished that a man who has been so busy developing the resources of our country and adding prestige to the name "American" in foreign countries that until now he has never taken an active part in American politics should announce that he is prepared to stand for the vice-presidential nomination. That he has done so is a fact of peculiar interest to the 20,000 enrolled members of our great engineering societies, and it is to be hoped that every one of these members will use his influence to support Mr. Hammond, not because he is an engineer, but because he is one of the best possible representatives of a type of man that is greatly needed in high executive and legislative office.

The recent conference of governors at the White House emphasizes the fact that in the material field the great work of the near future in America is the conservation—perhaps it would be better to say efficient utilization—of our natural resources. The broad expert knowledge, demonstrated executive ability, the tact and energy of Mr. Hammond in high executive office would constitute assets of the greatest value to the immediate and future interests of the United States.

Certain politicians have suggested that Mr. Hammond lacks political experience. On the contrary, as an American resident in South Africa standing for American ideas he had an experience which not one in one hundred could have faced with equal credit to himself and prestige for his country. Throughout those trying days his character and ability were tested in a manner rarely paralleled and he won the admiration and regard of both Boer and Briton. He is not expert in the school of petty politics, but it is safe to say that few of his competitors at Chicago have had equal experience in the school of constructive statesmanship.

The prejudice which conceives that no citizen of this republic should put himself forward as a candidate for high office unless he has served a long political apprenticeship in minor offices and in campaign work for his party is essentially ignorant and should be dispelled. It is to be hoped that every citizen who believes this will energetically support Mr. Hammond's candidacy.

L. B. STILLWELL.

### TOPIC TALK AT FORT WAYNE

As described in the STREET RAILWAY JOURNAL for May 2, it is the practice of the Maintenance of Way Department of the Fort Wayne & Wabash Valley Traction Company to hold weekly meetings at the office of the chief engineer, H. L. Weber, to discuss different topics connected with electric railway operation. At the meeting May 12 Larry Gill presented a paper on system in carrying on track work. Among other things, he said:

Each set of men on the road should have a place for the tools, and no one should interfere with them; by this method much confusion, time and expense may be saved. One set of hands may have a hammer, an adz or any other tool where they can be readily found in case of extreme need and some one from another set of hands will take it away from where it had been placed, just when it is most needed. Hence the necessity of our general rule that no set of men should interfere with the tools belonging to another set without permission.

We have to a great extent cleaned up and arranged our tool house and yard so things can be found. Consider the case of an engineer who allows his tape lines to lie around broken and rusty and not one fit to use, who has several broken flagstaves, leveling rods, etc., not one of them in good working order. Wouldn't you put him in the same class with the section foreman who, when he has a drill-jack, clawbar, levelboard or any other tool broken always stores the tools away in a heap along the right of way, or any old place?

Rainy days are good times to see if the ax, scythe or adz needs to be ground, the saw filed, the wrenches looked over, the jacks inspected and oiled, and the bolts and spikes gone over. It is also a good time to tighten up a few loose bolts on the car or truck, to look up the clusters to see if they will burn and are in good working order, to see if the hatchet and hand axes are ground, the brick hammer and rammers are in good condition; also if you have a few chimneys, wicks or an extra burner on hand for your switch lamps, or if the red lamps will burn if needed. We all can do much toward keeping things in order and everything in its place; if each would do his part, none of us would be overworked.



**INTERLOCKING SIGNAL PLANTS OF THE PACIFIC ELECTRIC RAILWAY**

The Pacific Electric Railway, which serves Los Angeles and the surrounding country, operates nearly 600 miles of track. The many radiating lines of this road and those of the Los Angeles Interurban Railway which are jointly operated with it center at a large terminal station in the business district of Los Angeles. Leading from the south to within a few blocks of this terminal is a four-tracked private right of way over which the cars of four double-track routes enter the city. This four-tracked right of way, shown in the engravings, is 14 miles long. Interlocking signal installations are provided at several crossings and branch-off points on this 14-mile four-track division. Through the courtesy of J. A. Bell, engineer maintenance of way Pacific Electric Railway, it is possible to present the following description of these installations and one on another division of this extensive electric railway system:

In June, 1907, the first crossing signal work was started on the Pacific Electric Railway at Oneonta Park, where a double-track electric line from Los Angeles to Monrovia and Glendora crosses the single-track Southern Pacific branch to Pasadena. The work was completed and the plant put in service on July 3, 1907. On the electric line there is a daily schedule of 190 cars over the crossing with numerous other work and freight train movements, while the steam line schedules 12 trains per day.

The location of the crossing is almost directly at the center of a street intersection, the electric railway having

fastened to concrete foundation blocks. The large pipe, which is 2 in. in diameter, is fitted with stuffing boxes and filled with black oil to reduce friction and prevent rust.

The plant installed is a 16-lever Saxby & Farmer mechanical interlocking machine of the latest type, as manufactured by the Union Switch & Signal Company. The complete equipment consists of six levers for operating six derails, two on the steam line and four on the electric line.



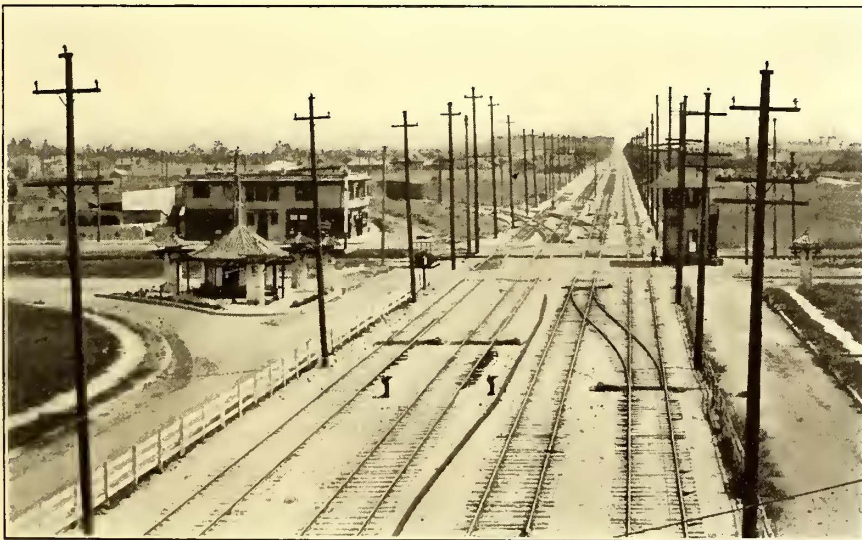
**Pacific Electric Railway—Amoco Crossing with Southern Pacific Railway**

Two of the latter protect back-up movements; four levers operate four standard iron-pipe semaphore signals, two on the steam road and two on the electric lines; three levers operate electric distant signals of the well known Type "B," extensively used for automatic block signal work on steam roads. These signals are controlled through three No. 12 hard drawn copper wires, weather proofed; those on the Pacific Electric line are strung on the telephone cross-arms of the center trolley poles, while on the Southern Pacific right of way the wire is carried on the telegraph pole line.

Circuits are so arranged that while the signals are out of the towerman's sight, due to curves, he is always advised of their movement. Of the remaining three levers, two operate wire-connected dwarf signals for signaling back-up movements on the electric lines. The sixteenth lever was not made use of, a space being left in the machine for its future installation.

Everything about the plant is built along the lines of the most up-to-date and accepted practice among steam roads. All parts are designed to withstand hard usage with low maintenance cost. Concrete is made use of wherever possible, the only wood in contact with the earth being the heavy redwood ties at derail movements upon which the mechanism to operate the point rests.

The tower, 12 ft. x 12 ft., is two stories high and rests on a concrete foundation. It is provided with a wide spreading roof shading the interior of the operating room at all hours during the day, so that window shades to obstruct the operator's view are unnecessary. The supports for the interlocking machine are carried to concrete pedestals and securely anchored. The windows in the operating



**Pacific Electric Railway—Slauson Junction 4-Track Crossing and Branch Off**

its private right of way flanked on either side by Huntington drive, the Southern Pacific track crossing on an angle of 57 deg. This necessitated setting the tower on one of the street corners and 80 ft. from the electric line. The pipe to operate the derails and signals was carried below the surface of the street in a larger pipe to the private right of way where it is carried, exposed, in pipe carriers

room are designed with a short upper sash and a long lower sash, thus putting the cross-bar entirely above the operator's line of vision. The ground around the tower has been improved by towermen filling the space available with various flowers, thus making the tower as a whole an addition to, rather than a detraction from, the beauty of Huntington drive.

The second plant constructed was at Dominguez, the crossing of the Southern Pacific line to San Pedro and the Pacific Electric line to Long Beach. At this point a branch of the electric road to San Pedro also leaves the main line. For this place the same type of mechanical plant was installed as that at Onconta Park. The second installation is twice as large as the first, the machine containing 28 working levers with four spare spaces. The signals of this plant pass daily 175 electric cars and 10 steam trains which numbers during the summer months are almost doubled, due to traffic to the beaches.

The view along the Pacific Electric line north and south from this plant is more or less obscured—south by a long line of center poles; north by a high-tension transmission pole line along the track. To make up for the shortness



Pacific Electric Railway—Home Signal Bridge over Express Tracks at Slauson Junction

of view annunciators have been installed in the tower advising the operator when cars are approaching within 4000 ft. of the crossing. This gives sufficient time for the necessary derails and signals to be set without delaying cars or causing them to reduce speed.

As this is a junction point and in order that the towerman may not change the derails with a car in the block, an electric lock is provided on the signal which admits a car into the interlocking. The lever is not released until the passage of the car out of the block automatically unlocks it. This plant was put in operation on Oct. 11, 1907.

#### ALL-ELECTRIC INTERLOCKER

The next work undertaken was at Slauson Junction, where the Pacific Electric four-track line is crossed by the Santa Fé Railway's Redondo branch, a single track line. Directly south of the Santa Fé crossing a double-track electric line turns off to the Whittier division. The whole

layout at this point is shown in the accompanying engraving reproduced from a photograph taken from the bridge carrying the home signals for the south-bound track.

This installation is of the all-electric type manufactured by the General Railway Signal Company. It is a most up-to-date apparatus. The operation requires 43 levers. Nine spare spaces have been provided in the machine, making a total of 52 levers available. It may be of interest to note in this connection that this is the largest interlocking plant in the State of California.

The levers are used as follows: 9 levers operating switches, 13 operating derails, 14 operating 19 high signals and 7 operating 8 dwarf signals.

The tower for this plant is designed along the same lines as those for mechanical work. A battery room is provided in the lower story to receive the storage cells. These consist of 55 jars of 80 amp.-hour, Type E-5, Chloride Accumulators, furnishing sufficient power on one charging to operate the plant and light all signal lamps for a period of 96 hours. Charging is accomplished by taking the 550-volt trolley current through the resistance necessary to obtain a current of 10 amp. In actual practice the battery is kept under a continuous charge at the rate of 2 amp and an overcharge of a few hours given once in two weeks.

In the upper story of the tower is located the interlocking machine together with the switchboard, which is a combination of the ordinary operating and power boards generally in use at electric interlockings. This board is 2 ft. x 5 ft. in size, mounted on an angle iron frame supporting it 15 in. above the floor. At one side of the board is a panel box containing the 550-volt charging switches and a regulating rheostat, the charging resistance being mounted in the lower part of the tower.

The signals on the electric line are supported by steel bridges directly over the center of the track which they govern. This arrangement was made necessary by track centers being such that semaphore poles could not be set between tracks, and to set them to the extreme outside would place the signals in the line of span poles, obscuring the view. By the bridge arrangement signals are directly over the track they govern and practically all chance of error on the part of motormen in confusing signals is eliminated. The wires necessary to operate the switches, signals and derails are carried in redwood boxing supported on stakes set between the center tracks, the top of the trunking being level with the top of the rail. After all wires were placed and tested out the boxing was filled with asphaltum pitch, sealing the wires from moisture.

This plant was placed in service on March 7 of this year. Ordinarily there are about 500 movements through this system each day with a large increase during the summer months.

The latest plant completed is at Amoco, on the four-track lines where they are crossed by the Southern Pacific's Santa Monica branch. This is also an electric plant of 40 levers and the details of installation are the same as employed at the Slauson Junction crossing. The traffic at this point is identical with that at Slauson, as all cars pass this place first. This interlocking was put into commission on April 25, 1908.

The track layout for all these installations, the towers and the steel bridges were designed by the maintenance of way department of the Pacific Electric Railway Company. The work of installation was done by the regular forces of that department.

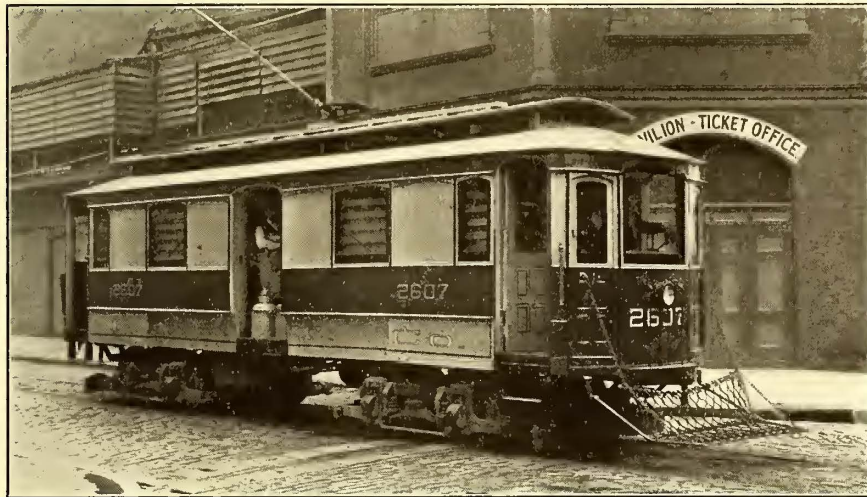
## NOTES ON MAINTENANCE OF PHILADELPHIA'S ELEVATED-SUBWAY LINE

The Philadelphia Rapid Transit Company has maintained a careful record of the amount of oil used for lubricating its elevated-subway rolling stock. The road has not been in operation for a sufficient length of time to make detailed statistics available, but as an example, the record of Car No. 1 might be quoted.

This car has been in service since Oct. 1, 1907, and had run 24,499 miles by May 11. It had not been oiled up to that time nor do the journals yet show any signs of needing oil. The journals are supplied with Galena oil and Perfection packing, which is an elastic non-glazing combination of wool, Irish moss and goat-hair.

### GEAR AND PINION WEAR

The cast-steel gears and steel pinions used on the elevated are inspected every 20,000 miles. They have stood up very well in service and micrometer measurements made after 70,000 miles' running show a gear wear of only 0.002 in. to 0.004 in. and a pinion wear of from 0.006 in. to 0.008 in. When the gears were placed in service the initial lubrication was 13 lb. of Whitmore's gear protective com-



Philadelphia Rapid Transit Company—Milk Car in Operation between Doylestown and Philadelphia.

pound, but since the initial lubrication only 1 lb. of new lubricant has been required each month, as the droppings from the gears into the gear case are reapplied to the surface of the gear.

### THIRD-RAIL SHOE WEAR

The original third-rail shoes of the Potter under-running type are averaging 33,000 to 35,000 miles each. The old shoes are not scrapped, but are trued up in a shaper and a new bearing plate is secured to the holder by set screws. This plate casting weighs about 5 lb. and costs 15 cents; the machining and screws average about 25 cents.

### CAR CHANGES

The elevated cars as originally installed had two sets of transverse seats opposite the locked center door. In practice they were found obstructive to passenger movement and have been converted to longitudinal seating, thereby increasing the total passenger capacity about 40 per cent. The seating in the middle of the cars will be removed eventually, as Burdette-Rowntree door-openers are being installed for the center doors in anticipation of the heavier traffic which will come with the opening of the Delaware River 7-mile extension in September. The total length of the elevated-subway line will then be 18 miles.

### COASTING SIGNS

As about half of the present elevated route is on grades, special attention has been given to instructing the motormen to save power by coasting. To assist in securing this object "on" and "off" sign posts bearing a black circle on a white field are placed at appropriate places along the line. The motormen are secretly checked by inspectors who enter the train and watch the switches on the panel board as the power is cut in and out.

### WHEEL PRACTICE

The first 40 cars were equipped with steel-tired wheels on both motor and trailer trucks. The rolling stock installed since then has been furnished with Schoen solid steel wheels for the trailer wheels, but steel-tired wheels have been retained for the motor trucks on account of the extended hub. The 34-in. diameter steel-tired wheels are turned for 55 cents a pair on a Pond lathe having a capacity of 10 pairs of wheels a day.

## TRANSPORTING MILK TO PHILADELPHIA BY TROLLEY

The Philadelphia Rapid Transit Company recently made a canvass among the dairymen in Doylestown and vicinity to determine what business there would be for milk transportation to Philadelphia, 25 miles distant. On May 4, after a conference between the interested parties, a milk car was placed in service to operate between Doylestown and Fifteenth and Huntingdon Streets, Philadelphia. This car leaves Doylestown at 6:24 a. m., picks up milk at any intermediate points and reaches the city depot about 9:15 a. m. For the information of dairymen who had made no arrangements for selling milk from this receiving station, the company sent out a circular with the names and addresses of several wholesalers who were ready to buy milk delivered at that place. The milk is transported on tag tickets attached to the cans. These tickets are sold in packages of 20, \$2.40 being charged for the 7½-gal. cans and \$1.60 for the 5-gal cans. The milk carrier is a converted center-door cable car mounted on Brill 27-G trucks and equipped with four No. 12-A motors. The car has a capacity of 200 40-qt. cans and makes one trip a day.

It is reported that the Hocking Valley Railway Company will put on an extra train each way a day between Fostoria and Toledo, in order to meet the competition of the Toledo, Fostoria & Findlay Railway which was recently placed in operation. The Toledo, Fostoria & Findlay Railway parallels the Hocking Valley from Fostoria to Toledo. The latter company, several months ago, put twin tickets on sale at a lower rate than the electric railway expected to charge. The Hocking Valley Railway has systematically fought the development of electric railways in its territory, but notwithstanding this it probably has more competition from electric railways than any other steam railroad in the State. It now has competition from Toledo south to Fostoria by the Toledo, Fostoria & Findlay Railway; from Marion south to Columbus by the Columbus, Delaware & Marion Railway, and from Columbus south to Lancaster by the Scioto Valley Traction Company, besides a number of small lines in the southern part of the State.

## ROCHESTER PARK NOTES

### GLEN HAVEN

Glen Haven is an amusement park owned and operated by the Rochester Railway Company. It is of the Coney Island type and is located at the end of Irondequoit Bay, Lake Ontario, about  $5\frac{1}{2}$  miles from Rochester. The round trip fare is 20 cents from any part of the city, but passengers starting from the East Main street station, which is 3.26 miles from the park, can make the trip for 5 cents each way.

The grounds are operated with a free gate, the principal inducement for visitors being vaudeville. The company's policy is to make a contract with some theatrical agent who has booked dates with most of the nearby parks, so that advantage may be taken of the lower prices possible when long trips for the performers are eliminated. Last year the contract was held by Frank Melville, of New York, who furnished shows for 13 weeks at \$400 a week. The company consisted usually of 11 people, who gave five diverse acts. This number included a pianist, who arranged the acts, cared for baggage, paid the performers, and handled the other details. Monday afternoons were devoted to rehearsals, but two daily performances of one hour each were given the rest of the week.

This arrangement proved very satisfactory and the vaudeville succeeded in drawing big crowds both afternoon and evening. In fact, the introduction of vaudeville three years ago increased the park traffic 89 per cent, and it has been rising ever since. Last season the total attendance was about half a million.

The acts are presented on an open-air stage termed the Circus Maximus, which is 60 ft. wide by 30 ft. deep, with dressing rooms in the back and two doors on each side. There is no covering on the stage and the performance is visible from three directions. At night the whole is attractively illuminated with 3000 incandescent lamps. Music is furnished by an orchestra of seven, which receives \$185 a week, but the actual expense is less, as the orchestra is used at other times by the local hotel proprietors.

This theater provides free seats for about 3000 people. An important feature in conducting this entertainment is the provision that all the concessions must be closed while the vaudeville is in progress. This was done to enable the patrons to enjoy the acts without disturbance from the annoying shouts of the different bally-hoo men. The concessionaires objected to this rule at first, but were soon mollified when they found that its effect was to put the people in better humor to visit their attractions after the vaudeville was over.

Although beer and other spirituous liquors are sold in the three hotels at Glen Haven, there is little trouble from disorderly elements because of the excellent policing and summary punishment of offenders. The park and its environs cover about eight acres, which are policed by three regular

uniformed deputies and four assistants. A small jail in the park serves to house arrested individuals until justice is meted out to them by local Dogberrys, who are not too lenient.

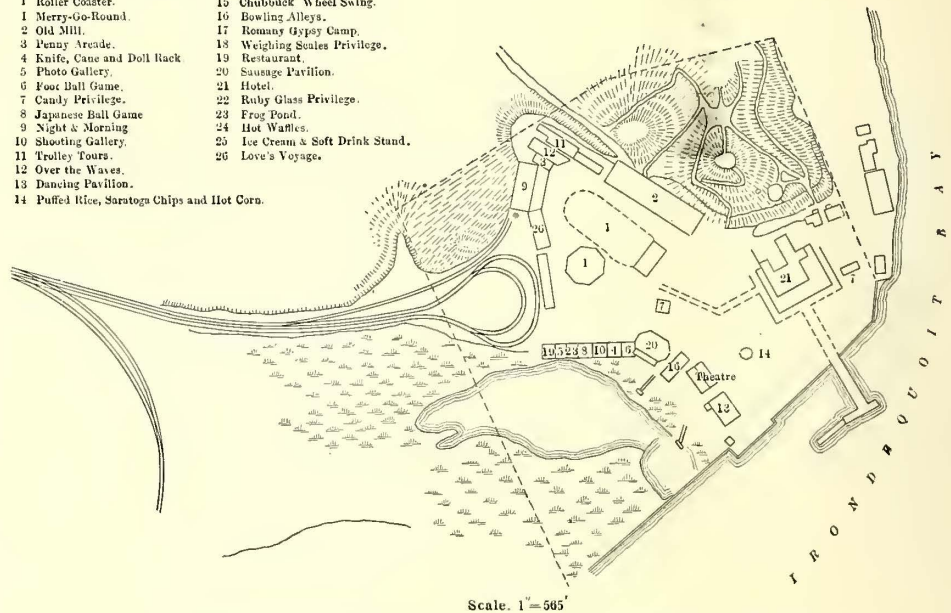
It is a cardinal principle of the park management to provide an abundance of benches, as the more opportunities the visitors have to rest the more likely they will be to visit other shows rather than going home early with a tired feeling. For the same reason there are no cement sidewalks to make the pedestrian foot-weary, and every effort is made to enhance the natural beauty of the grounds so far as is consistent in a park of this character.

The lighting of the park is on a very liberal scale but is applied to make every part of the grounds look cheerful rather than confining it to a central tower.

The park contains a generous number of standard pay attractions, most of them installed by the T. M. Harton Company, of Pittsburg. Among these are a roller-coaster, old mill, mystic chutes and merry-go-round. The riding de-

#### Concessions at Glen Haven.

Contract	Contract
1 Roller Coaster.	15 Chubbuck Wheel Swing.
1 Merry-Go-Round.	16 Bowling Alleys.
2 Old Mill.	17 Romany Gypsy Camp.
3 Penny Arcade.	18 Weighing Scales Privilege.
4 Knife, Cane and Doll Rack.	19 Restaurant.
5 Photo Gallery.	20 Sausage Pavilion.
6 Foot Ball Game.	21 Hotel.
7 Candy Privilege.	22 Ruby Glass Privilege.
8 Japanese Ball Game.	23 Frog Pond.
9 Night & Morning.	24 Hot Waffles.
10 Shooting Gallery.	25 Ice Cream & Soft Drink Stand.
11 Trolley Tours.	26 Love's Voyage.
12 Over the Waves.	
13 Dancing Pavilion.	
14 Puffed Rice, Saratoga Chips and Hot Corn.	



Rochester Railway Company—Plan of Glen Haven Park

vices and dance hall are the most popular offerings aside from vaudeville. Break-neck amusements and other thrillers are not encouraged because of their danger and tendency to draw undesirable elements to the park. In general, the management does not believe in shows which are good only for one season and require specially designed structures useless for other purposes. The park also contains moving pictures, Japanese games, souvenir stands, etc. The hotels and stands are rented at fixed amounts per season, but the other features are on a percentage basis.

No special effort is made to secure organizations to make trips to Glen Haven, but the company has a most successful drawing card in the military carnival held at the park every other year in the fall after the regular season is pretty well over, when the grounds are turned over to the local militia for sham battles, the regular park attractions being continued as usual. The railway company gets all the fares and the militia organizations are given the percentage profits from the park entertainments which at other times go to the railway company.

### SEA BREEZE PARK

Sea Breeze Park is a place which the Rochester Railway Company has built up chiefly as a picnic party resort, secur-

ing its business because of the natural beauty of the grounds and the conveniences afforded to lunch parties. The park is at the foot of Irondequoit Bay, Lake Ontario, 16 miles from Rochester. The round trip fare for adults is 25 cents and 15 cents for children. There is a large pavilion, an ample number of tables and benches and a fully equipped kitchen, including hot and cold water, dishes and utensils. All of these conveniences may be freely used by visitors on application to the matron in charge, who also dispenses hot coffee for the asking.

In addition to the main pavilion there is a smaller one and three large tents, so that every day five distinct organizations may have their outings under separate covers. There are also three baseball diamonds, a Figure 8 roller coaster, a merry-go-round and a photograph gallery. Visitors who wish to purchase refreshments, either solid or liquid, can do so at any of the three hotels. As at Glen Haven, there is a small lockup on the grounds and usually a local justice is on hand in less than an hour to dispose of cases.

The success of this park is shown by the fact that it had over 380,000 visitors last year, and 75 church organizations have already been booked for this season. Society business is secured through personal solicitation, correspondence and advertising matter, such as blotter sets which are mailed to the proper parties. These blotters have a celluloid cover which shows an attractive scene at the park, bears the pertinent query "Have you secured a date?" and tells the reader how he can make arrangements.

A large number of excursions are made in chartered cars at the rate of \$15 per car holding 60 passengers. The company, however, prefers to sell tickets at the usual rates so that the people can go to and from the park any time on a regular car, and at the same time it is unnecessary to keep the chartered car idle all day or bring it from some distant point.

#### TENT CITY AT SUMMERVILLE

Another traffic-building enterprise of the Rochester Railway Company is a tent city at Summerville, a shore resort 8 miles from Rochester at the mouth of the Genesee River, Lake Ontario, opposite Ontario Beach Park. The round trip fare to this place is 20 cents. The company owns a considerable shore front at this location ideally suited for tenting life. The property is divided into lots of 40 ft. to 50 ft. front and 100 ft. depth and the rental for the season varies from \$36 to \$65 a lot, according to the nearness to the lake. There is little profit in these rentals, as the company looks after the water supply, lighting and sanitation, but by giving the people what they want at reasonable rates the railway is building up a profitable traffic on its Summerville division. Last year the tent city consisted of 114 families and there is every reason to believe that this number will be greatly increased the coming season.

The third annual convention of the Grand Lodge of the Brotherhood of Interurban Trainmen of Ohio, Indiana and Illinois was held recently at Wapakoneta, Ohio. Twelve lodges in Ohio, three in Indiana and two in Illinois comprise the lodge. The officers who served last year were re-elected as follows: W. R. Rutledge, of Lorain, Ohio, grand master; H. W. Merritt, of Cuyahoga Falls, Ohio, grand secretary and treasurer; N. J. Hadley, of Lorain, Ohio, grand chaplain. This organization is maintained for the purpose of securing recognition for the interurban trainmen as a craft. In Ohio the lodge now uses 2100 of the 2290 miles of interurban track under a standard code adopted by its organization. The next meeting will be held at Muncie, Ind., May 13, 1909.

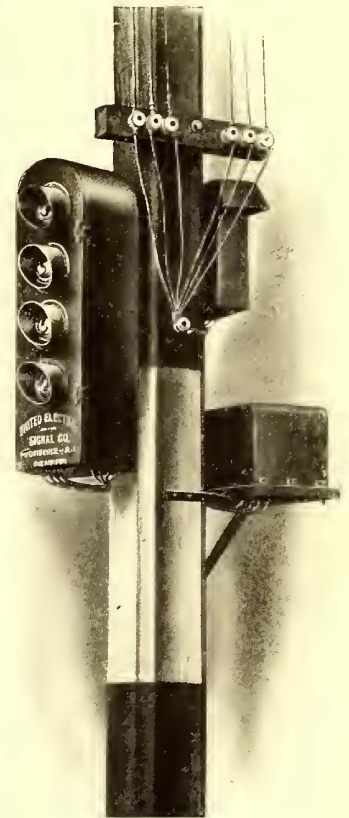
## A NEW SIGNAL SYSTEM INSTALLED BY THE RHODE ISLAND COMPANY AT PROVIDENCE

The Rhode Island Company, of Providence, has recently installed a two-wire automatic interlocking signal system, manufactured by the United Electric Signal Company, of Providence, which has attracted considerable attention. The system is operated by an overhead brush contact, using power from the main feed for both lamps and operating mechanism. Mounted upon a pole directly ahead of the turn-out is an oblong-shaped iron box containing four standard railway lenses, each illuminated by one of two incandescent lamps, the one not in service being in reserve to cut-in should the first lamp burn out.

The absence of a car between turn-outs is indicated by a white light at both ends, and the presence of a car within the block is indicated at the entering point by a green light in addition to the white light, and at the distant point by a red light only. The red and green lights are in series. The lighting circuit consists of a single wire, the other wire being used for the purpose of operating the mechanism through the overhead contact device. The lights are readily discernible at night, on a dull day or with the sun shining directly upon the lenses. When the lenses are not illuminated by the lamps the direct rays of the sun have no effect upon them.

With this system a number of cars may enter a block going in the same direction and the red light at the distant end will stay at danger until all cars have passed out. The first car to enter receives a green light either above or below the white light, as the case may be, and each following car changes the location of the green light, alternately, to a position either above or below the white light. The signal is self-adjusting. Should two cars attempt to enter a block from opposite ends, only one car will have the right to proceed. Cars may also back out on either side of the turn-out and restore signals to their previous condition. A car may also leave the block as the following car enters and not disarrange the system. When the signal is set at danger the overhead contact directly in front of the danger signal is cut out of service.

The most important feature of the system is that it is impossible for a car to get an entering or a go-ahead signal without setting and locking the danger signal at the opposite end. The signal box contains little besides the lamps, the counting mechanism being mounted separately on the back of the pole. The system is constructed on the unit principle so that individual parts may quickly be replaced or an entirely new mechanism inserted without disturbing the wiring.



Signal on Post

## EXHIBITS AT THE ATLANTIC CITY CONVENTION OF THE MASTER CAR BUILDERS' ASSOCIATION

The exhibits of railway equipment and supplies at the annual convention of the Master Car Builders' and American Railway Master Mechanics' Associations, held this week at Atlantic City, N. J., are more numerous and varied than ever before. They are grouped on the new Million Dollar Pier and are entirely under cover. About 210 companies are represented. The decorative scheme is the same as last year, white and green. A feature of the display is the grouping of all of the heavy machine tools, trucks and other exhibits in one large room south of the ball room, called for this occasion Machinery Hall. The makers of machine tools are especially well represented. Below is given a partial list of the exhibits of particular interest to electric railway mechanical officers:

ADAMS & WESTLAKE COMPANY, Chicago, Ill., has an attractive booth in which are shown the Newbold axle light system, Adlake acetylene generator for car lighting, lighting fixtures, samples of car hardware and switch and signal lamps and lanterns. It is represented by Messrs. Langworthy, Newbold, Anderson, Walters, Baldwin, Stearns, Griggs, Carse and Sidel.

THE AMERICAN BLOWER COMPANY, Detroit, Mich., shows a full line of specialties, including a No. 6, steel plate, dynamic fan; a No. 3 "V" blower with direct-connected motor, as used for forge work; a heater of sectional base coils complete, together with one of the new "Vento" cast-iron heaters in comparison; one No. 3 type "E" exhaust fan for handling material under high pressure; a twelve-blade, disk-ventilating fan; and a complete model showing the design and operation of the "ABC" moist air dry kiln. There is also exhibited a type "A" engine, with direct-connected generator, showing the special gravity lubrication and self-locking devices. The various special features of the engine, pump, self-locking devices, etc., are separately shown. Two rather spectacular features complete the exhibit, one being the new Detroit trap in operation, showing the latest method in automatic handling of condensed water—the other the now famous suspended ball exhibit. The company is represented by Clayton W. Old, general Eastern representative; R. B. Bedford and H. F. Old.

AMERICAN BRAKE SHOE & FOUNDRY COMPANY, Mahwah, N. J., has quarters in sections Nos. 583 and 585, where it is showing samples of locomotive, coach and car brake shoes illustrating the latest method of reinforcing the shoe to insure efficiency, durability and safety. The company is also exhibiting a few samples of steel back brake shoes for heavy electric railway service. The representatives on hand are W. S. McGowan, Eastern salesman; Frank L. Gordon, Western sales manager; Charles Herron, Southern sales manager; F. W. Sargent, chief engineer; and representatives H. S. Bradfield, E. L. Janes, E. J. Searles, E. B. Smith, J. S. Thompson, L. R. Dewey. In all probability Otis H. Cutler, president; J. D. Gallagher, first vice-president, and J. B. Terbell, second vice-president, will be in attendance part of the time.

AMERICAN LA FRANCE FIRE ENGINE COMPANY, Elmira, N. Y., exhibits a No. 11 and No. 8 chemical fire engine and a full line of fire extinguishers, including the No. 1 Babcock, No. 2 Babcock, No. 5 Babcock, Patrol, Salvage, Alert, 20th Century and Arctic non-freezing extinguishers.

AMERICAN LOCOMOTIVE COMPANY, New York, has a reception booth in which framed pictures of recent locomotives and trucks are hung. The company is represented by H. F. Ball, David Van Alstyne, Leigh Best, G. M. Basford, J. D. Sawyer, A. Haller.

AMERICAN MASON SAFETY TREAD COMPANY, Boston, shows samples of Mason and Empire safety step treads; Karbolith car flooring.

AMERICAN MULTIGRAPH SALES COMPANY, Cleveland, Ohio, exhibits new model No. 4 Gammeter multigraph for rapid duplication of letters and forms. Also numerous samples of work done by these machines. It is represented by F. G. Harris and H. M. Horr.

AMERICAN STEAM GAUGE & VALVE MANUFACTURING COMPANY, Boston, Mass., is exhibiting a full line of pop safety valves, steam and air gages, dead weight testers, whistles, indicators. It is represented by R. B. Phillips, Charles A. Allen and E. D. Smith.

AMERICAN STEEL FOUNDRIES, New York, has the largest single exhibit on the pier. Among the specialties shown are the Davis cast-steel wheel, coil and elliptic springs and cast-steel truck and body bolsters. It is represented by G. E. Scott, R. H. Ripley, W. W. Butler, D. W. Call, Theo. Cook, George Murray, Fritz Ernst, D. T. Harris, T. D. Kelly, J. V. Bell, G. E. Slaughter, Jas. T. Maher, H. P. Shaw, J. Soule Smith, W. A. Blanchard, Fred Shults and A. S. Crozier.

ARMSTRONG BROTHERS TOOL COMPANY, Chicago, Ill., exhibits a line of patent lathe and planer tools, ratchet drills and other machine shop specialties. It is represented by John McBride.

ASBESTOS PROTECTED METAL COMPANY, Chicago, Ill., exhibits samples of asbestos protected metal for siding and roofing of buildings. It is represented by R. J. Mollan, H. H. Robertson, E. V. Donelson and J. T. Crawford.

BALDWIN LOCOMOTIVE WORKS, Philadelphia, Pa., has no exhibit, but headquarters for its representatives are in space No. 523.

BARDONS & OLIVER, Cleveland, Ohio, exhibits a motor-driven, 4½-in. x 30-in. automatic chuck turret lathe in operation with a full line of turret lathe tools; also a No. 4 friction-gear head, extra capacity, drawback attachment, turret lathe with cut-off attachment and vertical forming attachment. The company is represented by S. E. Horton, J. G. Oliver and G. C. Bardons.

BEAUDRY & COMPANY, INC., Boston, Mass., exhibit a Beaudry power hammer for smith shops.

CHAS. H. BESLY & COMPANY, Chicago, Ill., exhibits the Besly spiral disk grinder, Helmet spiral circles, Helmet tempered taps, Helmet babbitt metal and Helmet oils and greases. The representatives are E. P. Welles and C. A. Knill.

BICKFORD DRILL & TOOL COMPANY, Cincinnati, Ohio, exhibits a motor-driven 5-ft. full universal radial drill. It is represented by H. L. Beeler and H. M. Norris.

BOWSER, S. F., & COMPANY, Fort Wayne, Ind., exhibits a full line of oil storage systems and self-measuring pumps. The representatives are C. A. Dunkelberg and W. T. Simpson.

BRILL COMPANY, J. G., Philadelphia, Pa., has a 27E-3 truck for passenger service on exhibition in Machinery Hall.

BROWN & SHARPE MANUFACTURING COMPANY, Providence, R. I., exhibits a No. 5B heavy plain milling machine, No. 3 vertical spindle milling machine of the constant-drive type with power-driven circular milling attachment, No. 3A heavy universal milling machine with a complete line of attachments. All of these machines are motor-driven and in actual operation. A representative line of small tools and cutters is also shown. It is represented by R. T. Eaton, C. A. Ballou, H. MacGregor and John Parker.

BURROUGHS ADDING MACHINE COMPANY, Detroit, Mich., is showing a number of models of Burroughs adding and listing machines. It is represented by F. A. Willard, Thomas M. Jones, Ira Berk, Frank Spikerman and Fred Woodward.

CALCULAGRAPH COMPANY, New York, exhibits the Calculagraph time recording and computing machine. It is represented by Philip R. Simmons.

CARBORUNDUM COMPANY, Niagara Falls, N. Y., exhibits samples of carborundum wheels, sharpening stones and crystals. It is represented by G. R. Rayner, Chas. Nicholson, W. W. Sanderson, Robert Fuller and Mr. Shoemaker.

CAREY, PHILIP, MANUFACTURING COMPANY, Cincinnati, Ohio, shows a full line of asbestos lagging and insulating material, roofing and paints.

CELFOR TOOL COMPANY, Chicago, Ill., exhibits Celfor high-speed twist drills, demonstrating their capacity for heavy work in a large motor-driven drill press. It is represented by Russell Dale, William Brewster, W. F. Heacock and W. E. McCabe.

CHASE, L. C., & COMPANY, Boston, Mass., exhibit their "Goat Brand" pushers used for car seats in steam and electric work with a full line of plain colors and frieze designs. The samples show the process of manufacture. The representative is R. R. Bishop, Jr.

CHICAGO PNEUMATIC TOOL COMPANY, of Chicago, Ill., has a complete line of electrical drills, tool post girders, portable girders, magnetic old man, vacuum house and car

cleaners for residential and railway purposes driven electrically and by gasoline engines, as well as a complete line of air tools and appliances.

CINCINNATI MACHINE TOOL COMPANY, Cincinnati, Ohio, is exhibiting its latest type of drilling machine with variable speed motor-drive and friction-clutch back gears.

CINCINNATI MILLING MACHINE COMPANY, Cincinnati, Ohio, exhibits a No. 4 horizontal plain milling machine and a No. 4 vertical plain milling machine, both motor-driven. It is represented by J. L. Bishop and Chas. Gingrich.

CINCINNATI PLANNER COMPANY, Cincinnati, Ohio, exhibits a 37-in. x 37-in. x 8-ft. forge planer with variable speed motor drive. It is represented by George Langen and B. B. Quillen.

COE BRASS MANUFACTURING COMPANY, Torrington, Conn., exhibits samples of extruded brass moldings used in car and locomotive construction and for other purposes. It is represented by E. J. Steele, W. H. Rippere and William W. Cotter.

CONSOLIDATED CAR HEATING COMPANY, Albany, N. Y., shows models of steam heating apparatus for trains.

CROSBY STEAM GAGE & VALVE COMPANY, Boston, Mass., exhibits a full line of steam and air pressure gages, safety valves, recording gages, globe, angle and check valves, indicator sets with reducing motion and continuous diagram drum, gage testing instruments. The representatives are E. C. Kenyon, J. J. McCormick, H. B. Forbes and C. W. Carlson.

CURTAIN SUPPLY COMPANY, Chicago, Ill., is showing improved ring fixture No. 88 for steam and electric closed cars; No. 89 ring fixture for closed grooves adaptable especially to open and convertible cars; Forsyth No. 86, Burroughs, Acme and Climax cable fixtures; Keeler eccentric Curtain Supply Company's friction roller fixture. It is represented by W. H. Forsyth, general manager; Ross F. Hayes, Eastern manager; S. W. Midgley, Western representative.

DEARBORN DRUG & CHEMICAL COMPANY, Chicago, Ill., shows samples of boiler compounds, oils and greases. It is represented by George Carr, J. D. Pursell, Grant Spear, D. E. Cain and H. G. McConaughy.

DETROIT HOIST & MACHINE COMPANY, Detroit, Mich., exhibits electric and pneumatic locomotive turntable tractors and pneumatic geared hoists. It is represented by J. C. Fleming and F. B. Fleming.

DIAMOND MACHINE COMPANY, of Providence, R. I., is presenting its electrically driven guide bar grinder.

DILL T. C. MACHINE COMPANY, Philadelphia, Pa., exhibits a motor-driven 15-in. slotter and Dill drive counter shaft. It is represented by T. C. Dill and Robert Russell.

DIXON CRUCIBLE COMPANY, Jersey City, N. J., exhibits samples of Dixon graphite crucibles, silica graphite paint and graphite lubricants in an attractive booth built of steel and painted with various shades of Dixon's graphite paint. It is represented by W. A. Houston, H. A. Neally, Leo Snyder, J. J. Tucker and De Witt C. Smith.

DRESSSEL RAILWAY LAMP WORKS, New York, are showing locomotive headlights both oil and electric; full line of classification lamps for locomotives, including latest design automatic color change device; locomotive gage lamps, switch lamps and semaphore signal lamps. The works are represented by F. W. Dressel, Robert Black, H. S. Hoskinson, F. W. Edmunds and W. E. Chester.

DROUVE, G., COMPANY, Bridgeport, Conn., presents the anti-Pluvius skylight, Lovell window operator and the Cibulas car ventilating operator. Wm. V. Dee, sales manager of the company, is in charge.

DUFF MANUFACTURING COMPANY, Allegheny, Pa., in addition to showing a fine line of its jacks, uses a "Readograph" perpetual advertising machine to explain the merits of its products. Geo. A. Edgin represents the company.

EDWARDS, O. M., COMPANY, Syracuse, N. Y., has an unusually extensive exhibit including a complete dummy of the side of a car equipped with Edwards window fixtures. The company is represented by O. M. Edwards, G. G. Norris, E. F. Chaffee, C. H. Rockwell and F. M. Nicholl.

ELECTRIC STORAGE BATTERY COMPANY, Philadelphia, Pa., exhibits a complete line of "Chloride" accumulators and "Exide" batteries for car and train lighting.

EVANS-ALMIRALL & COMPANY, New York, are showing model apparatus of hot water heating system for shops and

buildings and photographs of shops where the system has been installed together with drawings and plans showing application of apparatus to the buildings. The company is represented by C. D. Allan, Benjamin Kauffman and Douglas Sprague.

FOSTER, W. H., COMPANY, New York, is presenting its staybolt machine, bolt-turner, die grinder, staybolt drill, nut tapper and a bolt altering machine. This company also is giving out advertising literature and showed photographs of products of the Ingersoll Milling Machine Company, Rockford, Ill. The company is represented by B. D. Jackson.

FRANCE PACKING COMPANY, Philadelphia, Pa., is showing a line of metallic and fibrous packings for locomotives, power house machinery, marine engines, etc., as well as lubricators and grease cups. The company is represented by A. W. France and G. E. Vansantz.

GALENA-SIGNAL OIL COMPANY, of Franklin, Pa., has arranged for a reception booth but will make no exhibit of its wares. Among the representatives on hand are the following: J. S. Coffin, vice-president; E. V. Sedgwick, E. Hillyer, Alex. Turner, E. W. Grieves and F. W. Dyer.

GARLOCK PACKING COMPANY, Palmyra, N. Y., shows a line of locomotive and shop packings. The company is represented by John N. Todd, Wm. Smith, F. A. Ebert, H. N. Winner and H. Peterson.

GENERAL ELECTRIC COMPANY, Schenectady, N. Y., has a large exhibit in spaces 350-361. It includes one G. E. 209 commutating pole railway motor as furnished to the Detroit River Tunnel Company, one G. E. 308 railway motor, one G. E. 69 motor, one G. E. 205 motor, 400-watt Curtis turbine headlight set, 20-kw Curtis turbine generating set for train lighting, portable air compressor set, speed lathe made by the American Woodworking Machinery Company and direct driven by a 1/2-hp C. R. motor which has the armature shaft extended and the face plate attached directly to it without the interposition of gears, designed to run at variable speed between 600 and 2400 r.p.m.; a number of motor-driven wood-working and machine tools, display of tungsten lamps, tantalum lamps for car lighting and various types of arc lamps, Sprague 1-ton electric shop hoist, Invincible motor-driven vacuum carpet cleaner, motor-driven rail drilling and grinding machine made by the Coates Clipper Company, panels of rail bonds and overhead line material. It is represented by J. G. Barry, F. H. Gale, W. J. Clark, C. C. Peirce and R. E. Moore.

GENERAL COMPRESSED AIR & VACUUM MACHINERY COMPANY, St. Louis, Mo., is in space No. 322 in the pneumatic section. Its representatives are Reuben C. Hallet, an old railroad man, who has recently joined this company, and Frederic A. Coolidge, advertising manager.

GENERAL RAILWAY SUPPLY COMPANY, Chicago, Ill., shows all of its devices in position on the end of a passenger coach which it built for that purpose. It has several articles which are particularly well adapted for electric railway service, namely: Schroyer friction curtain rollers and fixtures, National standard roofing, Ideal roller center bearings and flexolith composition flooring. The first two have been specified and are to be applied to all of the street cars to be built for the Chicago Railways Company, and the ideal roller center plates also will be used under 300 of these cars.

GISHOLT MACHINE COMPANY, Madison, Wis., is showing a 24-in. motor-driven turret lathe with 6 3/4-in. hole through spindle and a set of bar tools with same; a motor-driven Gisholt universal tool grinder, and a motor-driven 52-in. vertical boring and turning mill. The company is represented by Ellis F. Muther, J. E. Brandt, C. B. Carr, G. E. Gernon, S. C. Hanks and Chas. Spaulding.

GOLD CAR HEATING & LIGHTING COMPANY, New York, has an extensive exhibit of its steam heating apparatus, hose couplings, etc. The company is represented by E. B. Wilson, E. E. Gold, J. O. Brumbaugh, R. Voges, G. Fred Collins, Geo. F. Ivers, W. H. Stocks, John Stayman, H. L. Leach, F. A. Purdy and F. T. Kitchen.

GOLDSCHMIDT TIHERMIT COMPANY, New York, show appliances for welding trolley rails in paved streets and welding broken electric motor cases. The former appliances consist of patterns for the mold, mold boxes, mold clamps, an automatic crucible and the welding portion of the permit. For repairing motor cases, a larger crucible is shown and

the process explained in detail. The company also has a working exhibit where steel sections are welded in the presence of the delegates.

GREENE, TWEED & COMPANY, New York, exhibit a wide line of "Palmetto" air pump and throttle packing and the "Favorite" reversible ratchet wrench. The company is represented by F. E. Ransley, railroad representative.

HALE & KILBURN MANUFACTURING COMPANY, Philadelphia, Pa., has an interesting exhibit of different styles of car seating, steel doors and sash fixtures. John Little is in charge of the exhibit.

HANLON & WILSON, Wilkesburg, Pa., had an exhibit comprising several specimens of the "Vak Klean" vacuum cleaning machine.

HARRINGTON, EDWIN, SON & COMPANY, Philadelphia, Pa., have on hand several styles of their "Peerless" geared hand chain hoists.

HEYWOOD BROS. & WAKEFIELD COMPANY, Wakefield, Mass., are exhibiting parlor car chairs and several types of car seats. Visitors are cared for by Bertram Berry.

HOWE RUBBER COMPANY, Trenton, N. J., offer a full line of N-B-O steam packings, automobile tires and a wide variety of mechanical rubber goods. The company is represented by A. R. Foley, H. M. Royal and C. E. Stokes.

ILLINOIS MALLEABLE IRON COMPANY, Chicago, Ill., showed various styles of insert and reinforced rod and steel back brake shoes. The company was represented by Charles L. Sullivan, sales manager of the brake shoe department, and E. M. Marshall.

INDEPENDENT PNEUMATIC TOOL COMPANY, Chicago, Ill., is showing a complete exhibit of its piston air drills and reamers, pneumatic flue rolling, tapping and wood boring machines, portable pneumatic grinding machines, pneumatic chipping, calking, beading and riveting hammers, pneumatic wood saws, hose, couplings and other air appliances. The representatives are James B. Brady, W. O. Jacquette, J. D. Hurley and R. S. Cooper.

JENKINS BROTHERS, New York, are showing a line of valves and packings. The representatives are A. C. Langston, Mr. and Mrs. Williams, Frank Martin and Charles Wick.

JOHNS-MANVILLE, H. W., COMPANY, New York, show a wide line, including Noark fuses, asbestos packings, pipe insulations, asbestos wood for panel boxes, ebony asbestos wood for switchboard details, asbestos wood for cars, J-M conduits for steam and the Phoenix roundhouse chimney. The representatives are J. E. Meek, J. C. Younglove, S. B. Keys, E. C. Sawyer, C. E. Gerhart and Mr. Smallwood.

JUSTICE, PHILIP S., & COMPANY, Philadelphia, Pa., are showing "Reliance" hydraulic jacks, ball bearing screw jacks, justice spike pullers and weldless steel tubing.

LANDIS MACHINE COMPANY, Waynesboro, Pa., presents one motor-driven bolt and pipe threading machine combined, with demonstrations of the many operations possible on the Landis machine. This company's tools are equipped with the Landis die. Aside from the machine proper, the company shows a great number of samples of work from the machine and illustrates its use.

LANDIS TOOL COMPANY, Waynesboro, Pa., shows its universal motor-driven tool grinder, a No. 3 universal grinder in addition to samples of work turned out with these machines. The company is represented by J. H. Hollinger.

LAWRENCEVILLE BRONZE COMPANY, Pittsburg, Pa., is showing locomotive driving box brasses made of its Corinthian bronze, journal bearings, worm gears and pinions made from the company's K. & S. malleable bronze, the Robertson blow-off valve and the McGilvray hydraulic valve. The representatives are Edward Kerr, president, and C. B. Ault, railroad salesman.

LODGE & SHIPLEY MACHINE TOOL COMPANY, Cincinnati, Ohio, is showing in operation a 24 in. x 12 ft. patent head standard screw cutting engine lathe driven by a 10-hp variable-speed motor. There is also shown a 16 in. x 8 ft. three-step cone, double back gear engine lathe with Derrer shaping attachment capable of producing eccentrics, triangles, ovals and squares. The company is represented by R. G. English.

LUCAS MACHINE TOOL COMPANY, Cleveland, Ohio, exhibits the Precision boring, drilling and milling machine and the Lucas power forcing press. Its representatives are Geo. A. Yost and W. L. Cheney.

LUPTON'S, D., SONS COMPANY, Philadelphia, Pa., is exhibiting metal wired glass windows, improved fire doors, skylights, louvers and sash operating devices. The company is represented by John W. Watkins and Clark P. Pond.

MCCONWAY & TORLEY COMPANY, Pittsburg, Pa., is showing different types of couplers manufactured for steam railroads and also models of the Janney radial coupler, intended especially for interurban service. The latter coupler was exhibited at the electric railway convention at Atlantic City last fall, and described on page 679 of the STREET RAILWAY JOURNAL for Oct. 12, 1907. The company is represented by S. C. Mason, W. McConway, Jr.; E. M. Grove, G. W. McCandless, H. C. Buhoup and I. H. Milliken.

MASSACHUSETTS MOHAIR PLUSH COMPANY, Boston, Mass., is showing car seats upholstered in plush and samples of plush. It is represented by J. S. Seabury.

MODOC SOAP COMPANY, Philadelphia, Pa., presents its car cleaner, renovator and metal polish. The company is represented by J. D. Holtzinger and Henry Roever.

MUMMERT, WOLF & DIXON COMPANY, Hanover, Pa., exhibits a plurality die bolt cutter and revolving oil stone grinder. The company is represented by E. S. Wolf and Clarence Buckley.

MURRAY, S. W., Milton, Pa., is showing a full-size working model of the Murray boxcar, grain door, telescope car stake and the Howard solid forged brake jaw. The company is represented by Thomas E. Twist.

NATIONAL ACME MANUFACTURING COMPANY, Cleveland, Ohio, is showing a motor-driven multiple spindle automatic screw machine. The company is represented by W. S. Chase, E. C. Woolgar and J. F. Judd.

NATIONAL ANALINE & CHEMICAL COMPANY, Philadelphia, Pa., is showing samples of bridge and car paints. It is represented by Chas. R. Day, W. E. Skinner and W. F. Tenney.

NATIONAL LOCK WASHER COMPANY, Newark, N. J., shows curtains, curtain fixtures, sash locks, sash balances and nut locks. W. C. Dodd, president; Daniel Hays, F. A. Archibald and J. B. Seymour represent the company.

NORTON COMPANY, Worcester, Mass., exhibits a pair of car wheels, one ground and the other with a flat spot; ground, turned and filled and rolled piston rods, to show the difference in finish; samples of Alundum grinding wheels and oil stones. It is represented by George Montague, Mr. Neilsen, C. O. Smith and H. N. Cudworth.

PANTASOTE COMPANY, New York, shows samples of pantasote and agosote, a new fiber board for head-lining, panels, etc., employed by Pullman Company and specified for 600 new cars of Chicago Railways Company. Pantasote seat upholstery and curtain material. It is represented by John High, Douglas Bonner and Geo. N. Boyd.

PITTSBURG AUTOMATIC VISE & TOOL COMPANY, Pittsburg, Pa., exhibits samples of the Pittsburg high speed vise, one of the vises shown being the largest ever built. It is represented by G. P. Blackistone.

RESTEIN, CLEMENT COMPANY, Philadelphia, Pa., has an exhibit of steam and hydraulic packing, steam and tank hose. It is represented by N. B. Miller and James E. Sulger.

RITTER FOLDING DOOR COMPANY, Cincinnati, Ohio, exhibit a model of the Ritter folding door used for shops, round houses and freight houses. It is represented by J. M. Crowe, W. Moore Wharton and C. P. Porterfield.

RUBBERSET BRUSH COMPANY, Newark, N. J., has on exhibit a full line of Rubberset brushes especially adapted for car painting and varnishing. It is represented by A. L. Holtzman.

RYERSON, J. T., & SON., Chicago, Ill., are exhibiting a Ryerson key seating machine, crank pin truing machine, valve seat facing machine, boring bar, bevel shear, friction saw, Cleveland style C punch, Ryerson flue welding machine and furnace, model of Scotch marine boiler with Morrison corrugated internal firebox, model of Ryerson flue cleaning machine. It is represented by E. T. Hendee and Mr. Pershall.

SCULLY STEEL & IRON COMPANY, Chicago, Ill., has on exhibition its cone-bearing ratchet screw jack. This is a journal jack and is used by electric railways as well as steam railroads.

ST. LOUIS CAR COMPANY, St. Louis, Mo., is showing car



seats, spiral journal bearings, rattan seating. It is represented by S. Sissons, R. G. Hutchins and C. B. Hutchins.

SELLERS, WILLIAM, & COMPANY, Philadelphia, Pa., are showing latest improved type of non-lifting injector; No. 1 grinding and shaping machine; No. 2 tool grinding and shaping machine; 3-in. twist drill grinder for flat and twist drills. It is represented by J. D. McClintock and C. T. Wilson.

SPRAGUE ELECTRIC COMPANY, New York, exhibits samples of steel armored hose, steel armored cable and flexible steel conduit. It is represented by A. C. Bakewell, H. H. Hornsby, W. L. Williams and A. E. Braddell.

SPRINGFIELD MACHINE TOOL COMPANY, Springfield, Ohio, are showing in operation a No. 3 high power, rapid reduction lathe, motor-driven by  $7\frac{1}{2}$ -hp Northern Electric Company's motor. It is represented by Paul A. Montanus and Edward S. Montanus.

STANDARD CAR TRUCK COMPANY, Chicago, Ill., is exhibiting a center plate which it is applying to electric railway cars and is to be used on 350 cars recently ordered for the Chicago Railways Company. Plates and rollers for street cars are made from drop forgings. The company also exhibits a full size lateral motion freight truck and a full size lateral motion tender truck with center plates for both. The company is represented by J. C. Barber, president; Lee W. Barber, secretary, and E. W. Webb, mechanical engineer.

STANDARD PAINT COMPANY, New York, has a reception booth in the large hall upstairs.

STANDARD STEEL WORKS COMPANY, Philadelphia, Pa., has a reception booth in space 523 with the Baldwin Locomotive Works.

STOEVEY FOUNDRY & MACHINE COMPANY exhibits a pipe threader, motor-driven. It is represented by Ralph McCarthy and Edward Euston.

SYMINGTON COMPANY, T. H., Baltimore, Md., is exhibiting the following appliances adapted for electric railway service: Symington journal boxes; Baltimore ball-bearing center and side bearings, miscellaneous parts of cars and trucks of high-grade malleable iron. The following representatives are in attendance: T. H. Symington, president; J. F. Symington, manager Eastern sales; C. J. Symington, assistant manager Eastern sales; D. Symington, assistant manager Western sales; T. C. deRosset, sales agent; W. W. Rosser, sales agent, and A. H. Weston, mechanical engineer.

TINDEL-MORRIS COMPANY, Eddystone, Pa., is exhibiting a No. 0 Paragon metal saw made by the High Duty Saw & Tool Company, of Eddystone, Pa., and a No. 1 saw grinder made by the same company.

UNDERWOOD, H. B., & COMPANY, Philadelphia, Pa., are showing a pneumatic pipe bending machine, improved cylinder boring bar, new improved crank pin turning and re-boring machine, rotary valve seat facing machine and double opposed compressed air motor. The company is represented by A. D. Pedrick, H. A. Pedrick, M. G. Condon, E. J. Rooksby, D. W. Pedrick, Jr.

UNION SPRING & MANUFACTURING COMPANY, Pittsburg, Pa., is exhibiting a general line of coal and elliptic car and locomotive springs, the Kensington steel journal box made of pressed steel, pressed steel journal box lids and spring plates. It is represented by A. M. McCrea, L. G. Woods, C. S. Foller, T. B. Arnold, A. C. Woods, A. Pancoast and A. Stucki.

VAN DORN, W. T., COMPANY, Chicago, Ill., shows a one-piece pressed steel freight car end. It is represented by W. T. Van Dorn.

WATSON-STILLMAN COMPANY, New York, is exhibiting a full line of hydraulic jacks, rail benders, shaft straighteners, wheel presses and other hydraulic tools. It is represented by Ed. A. Johnson and Geo. L. Gillon.

WEST DISINFECTING COMPANY, New York, is exhibiting samples of disinfectants and disinfecting apparatus, liquid soap and soap containers. It is represented by E. Taussig.

WESTINGHOUSE COMPANIES, Pittsburg, Pa., have made a practice of having elaborate displays of apparatus only in alternate years. Last year the associated companies had one of the largest exhibits ever made and following the rule, this year's display is confined to a large reception booth in the upper hall, spaces 540-542. The booth is lighted by type "O" lamps made by the Cooper-Hewitt Company, of New York, which give a soft beautiful light at low consumption of current. A number of 12-in. West-

inghouse fans running on alternating current at 110 volts provide a breeze. The American Brake Company, of St. Louis, exhibits in this booth models of its automatic slack adjuster and the Westinghouse Automatic Steam & Air Coupler Company, also of St. Louis, exhibits a model of its automatic connector. A large revolving stand contains an interesting collection of views of apparatus and installations recently made by the Westinghouse Companies, among which are a number of electric railway contracts. A full collection of literature descriptive of apparatus used in railway work is on hand at the booth, as are also copies of a book of Westinghouse views. The representatives in attendance are: For the Westinghouse Air Brake Company, J. F. Miller, E. A. Craig, Joseph R. Ellicott, E. L. Adrian, C. J. Olmstead, F. M. Nellis, W. V. Turner and Arthur Johnson. For the Westinghouse Electric & Manufacturing Company, J. H. Klinck, Chas. Talbot, A. F. Chamberlain and R. F. Moon; also E. L. Adrian, president of the American Brake Company, of St. Louis; N. F. Niederlander, president of the Westinghouse Air & Steam Coupler Company, of St. Louis, and J. C. McQuisten, manager of the Westinghouse Companies' publishing department.

WHEEL TURNING BRAKE SHOE COMPANY, Detroit, Mich., is exhibiting samples of abrasive brake shoes for truing up wheels while in service. It is represented by J. M. Griffin.

WILLARD STORAGE BATTERY COMPANY, Cleveland, Ohio, is exhibiting Willard storage batteries for all kinds of car and train lighting. It is represented by T. A. Willard, Robert C. Shall, C. C. Bradford and R. Norberg.

WRIGHT WRENCH COMPANY, Philadelphia, Pa., is showing a line of monkey wrenches. It is represented by J. F. Wright and B. J. Crandby.

YALE & TOWNE MANUFACTURING COMPANY, New York, is exhibiting electric triplex hoists, station hardware, Blount coach door checks, padlocks and coach cabinet locks, overhead trolleys, enlarged model of the Yale lock operating by a motor. It is represented by W. C. Bigelow, F. A. Hall and C. W. Beaver.

The Cincinnati Car Company has shipped to the Pittsburg & Butler Street Railway Company, Butler, Pa., two handsome combination smoking and passenger interurban cars for high-speed limited service. Each of the cars measures 51 ft. 3 in. in extreme length and 50 ft. 1 in. over the vestibules. The length over the body is 40 ft. 7 in. and the extreme width 8 ft. The side sills are of  $\frac{3}{8}$ -in. x 24-in. steel plate, with a 6-in. channel riveted along the bottom and a  $2\frac{1}{2}$ -in. x  $2\frac{1}{2}$ -in. angle riveted along the top. The top angle, in addition to stiffening the plate, forms an excellent support for the cross seats. The 6-in. channel on the bottom edge forms a seat for the inside side sill filler. The remaining sills are of combination 6-in. I-beam and Georgia pine construction. The side windows are of the half elliptic double style, the upper portion being glazed with green opalescent art glass in a metal frame. The steps are of the steam coach type, with treads covered with rubber matting. The roof is covered with 16-oz. sheet copper grounded to the steel frame of the car. The interior finish is of Honduras mahogany with two lines of neat inlay marquetry in the principal panels. The ceilings are of the full empire style painted medium green and handsomely decorated. There are 15 Hale & Kilburn No. 99-E reversible cross seats upholstered in green plush in the main passenger compartment and 4 seats upholstered in green leather in the smoking compartment. In addition there are four stationary corner seats in the main passenger compartment and four in the smoking compartment. All windows are furnished with four-bar hinged outside window guards. The upper deck lamps are concealed in large Holophane globes set in bronze frames, while the lamps on the sides are set in ornamental bronze sockets. The cars are equipped with Nichols-Intern air sanders, Ohmer fare registers, Dayton Manufacturing Company's tail lamps, Knutson trolley retrievers, Peter Smith hot water heater, Peacock hand brakes, Westinghouse air brakes, Dayton Manufacturing Company's No. 67 individual type bronze parcel racks and sockets to receive buffet lunch tables. They are mounted on the Standard Motor Truck Company's C-60-A high-speed interurban trucks, and are fitted with four 75-hp Westinghouse motors for a.c.-d.c. operation geared for 60 m.p.h.

# News of Electric Railways

## Philadelphia Rapid Transit Company Seeks Permission to Make \$5,000,000 Loan

The Philadelphia Rapid Transit Company, of Philadelphia, applied to City Councils on June 12 for permission to make a loan of \$5,000,000, not more than half of which is to be issued at present, and the remainder only as the company may need it. The request was communicated in a letter sent to the upper and lower chambers, and a draft of the proposed ordinance covering the plan suggested was submitted. The ordinance has been referred to the finance committee of the Councils. The letter to Councils was signed by John B. Parsons, president of the company, and is as follows:

"Under the provisions of the contract of July 1, 1907, the Philadelphia Rapid Transit Company has bound itself not to part with or pledge any of its franchises or property or in any way incur any further fixed charges without the consent of City Councils.

"In accordance with other provisions in the said contract the company has called for the last instalments of its capital stock, and the last payments will be made in September of this year. This money, as you know, has been used to a great extent in building the subway and elevated road, and we are glad to announce that this road has now been practically completed by the contractors, and that the tracks, third-rail and signal systems will be installed in time to give the public the benefit of this great improvement early in August.

"The payments for this work will practically exhaust the capital of the company.

"At the same time, other additions, improvements and betterments to the property are required for the convenience of the public and the advantage of the company. Among these we may specify the relaying with heavier rail in order to take care of heavier equipment now in use, of a number of lines of the company—Fifth and Sixth Streets, Seventeenth, Eighteenth and Nineteenth, Ridge Avenue, etc.—the providing of additional equipment for use on the elevated road, the changing of present equipment into the 'pay-as-you-enter' car, which has proved a success in other cities, and the purchasing of additional equipment of this character.

"Other matters will also doubtless arise requiring additional money. In fact, every growing system needs new capital, and it is the part of good management to finance well into the future.

"For these reasons we ask your assent to the pledging of such franchises, leaseholds, assets and securities as may be required to secure a loan not to exceed \$5,000,000, not more than half of this amount to be issued at present and the remainder only as the company shall from time to time require it. We believe that the raising of this money and its judicious expenditure will result in substantial benefit to the traveling public, and we therefore ask your favorable consideration of this proposition. A draft of a proposed ordinance is inclosed for your consideration."

## The Situation in Cleveland

A car of the Municipal Traction Company was wrecked by a dynamite explosion on Euclid Heights on June 10 and several persons were slightly injured.

A. B. DuPont, president of the Municipal Traction Company, gave orders Wednesday, June 10, that conductors are not to make change for bills of a denomination larger than \$2. When larger bills are offered the conductors are to retain them and instruct the passenger to go to the office of the company for change. Mr. DuPont gives as a reason for this order an organized effort on the part of the public to bother the conductors in their work by handing them large bills, with instructions to take one fare.

The Municipal Traction Company has decided to put \$500,000 of the stock of the Cleveland Railway Company on the market at once. President DuPont says that this action is taken at this time to test public sentiment. The stock will be sold through the private stock department.

President DuPont, of the Municipal Traction Company, says that the company has no further concessions to make to the men on strike. The men are working quietly on the referendum idea, but Mayor Johnson says that not enough names of qualified voters will be found on the petition to warrant an election. The American Federation of Street Car Men of Cleveland has been incorporated by the present employees of the Municipal Traction Company.

## Affairs in New York

The Public Service Commission announced on June 9 that within a month contractors will begin the work of widening the subway between Ninety-sixth and 105th Streets, in order to eliminate the cross-over of the Lenox Avenue and Broadway divisions. This improvement was described in the STREET RAILWAY JOURNAL for Feb. 29, 1908. It will do away with the congestion of trains which now occurs in the process of switching to one line or the other, with the consequent overcrowding of the station and serious delays in traffic, and will increase the capacity of the subway fully one-third.

At the instigation of Comptroller Metz, of New York, a property owner has obtained an injunction preventing the board of estimate from appropriating money to begin work on the Fourth Avenue (Brooklyn) Subway.

The Hudson & Manhattan Railroad has extended its line under the Hudson River from Fourteenth Street, New York, to Twenty-third Street, New York. It is expected that within a few months the line will be in operation to the terminal of the company at Thirty-third Street and Sixth Avenue.

## Significance of the Berkshire Consolidation

A bill providing for building four new lines in Berkshire County, Massachusetts, a connection between the Springfield Street Railway and the Berkshire Street Railway, and a line to the top of Mt. Greylock has been introduced in the Massachusetts Senate. The bill permits practically a consolidation of the Berkshire Street Railway and the Bennington & North Adams Street Railway, on condition that the Berkshire Company spend about \$2,000,000 on the new lines and that the extensions be built within two years in a manner satisfactory to the railroad commissioners. These new lines will supply Berkshire County with desired outlets and will bring it into communication by trolley with Springfield. Control of the Berkshire Street Railway was sold to the New York, New Haven & Hartford Railroad in 1905. The latter soon afterward bought control of the Hoosac Valley Railway, and consolidated the two under the name of the Berkshire Street Railway. Since the beginning of the New York, New Haven & Hartford Railroad control there has been spent on the railway \$275,000 for improvements in Massachusetts and \$612,000 for the extension to Bennington. The projected line to the top of Mt. Greylock is estimated to cost \$450,000, and it will bring the people of Adams, Pittsfield and North Adams within reach of the State reservation on the mountain. The southerly extension from Great Barrington will cost about \$635,000 and will give the people of Egremont trolley connection with all other parts of Berkshire County, the people of Sheffield similar facilities, and will also furnish a trolley connection with the north-easterly section of Connecticut. The most important of the extensions planned is the 19 miles between Lee on the Berkshire Street Railway and Huntington, the present terminus of the Springfield Street Railway. This will cost about \$915,000, and will give trolley connection between all the towns of the Berkshire Valley and the Connecticut Valley.

As a result of an order by the Massachusetts Senate on June 13 the Railroad Commission will consider the expediency of permitting the Berkshire Street Railway Company to purchase the franchise and property of the Bennington & North Adams Street Railway, and what relations if any should be permitted between the railroad corporations and street railway companies, with a view to the improvement and development of transportation facilities by the use of electricity. The board's recommendations are to be submitted in its next annual report to the Legislature. By this order the merger problem recently so thoroughly discussed in Massachusetts is brought before the Commission for an expression of opinion.

## General Electric Company's Engineering Convention

For nine days ending June 9 the engineers of the General Electric Company were gathered together at their annual meeting for discussing the past year's development in the art and considering plans for the future. Engineers from the local offices of the General Electric Company throughout the country and Mexico were in attendance as well as representatives of all branches of the engineering depart-

ments of the company. Every phase of the company's engineering work was considered in detail. The engineers of the various departments presented interesting papers on a great variety of important subjects and profitable discussions followed.

The meeting was opened at the principal works at Schenectady, N. Y., by E. W. Rice, Jr., vice-president. After spending five days at Schenectady the meeting was adjourned to Pittsfield, where C. C. Chesney, manager of the Pittsfield Works, opened the meeting and introduced the engineers at the factory. The meeting was continued at Lynn, where the engineers were welcomed by W. C. Fish, manager of the Lynn Works. The company's incandescent lamp works are located at Harrison, N. J., and when the convention assembled at this place G. F. Morrison, manager, outlined the remarkable development in incandescent lamp engineering during the last year.

Among the engineers from the field present at this meeting were: J. Lyman, Chicago; J. L. Monges, San Francisco; W. F. Wright, Denver; H. H. Barnes, New York; C. T. Mosman, Boston; W. S. Culver, Cincinnati; L. F. Deming, Philadelphia; H. E. Bussey, Atlanta; W. H. Hand, St. Louis; C. A. Chase, Mexico.

**Legislation Affecting Electric Railways**

**Massachusetts.**—The railroad regulation bill was killed in the Massachusetts House June 11 by an overwhelming vote. The members who advocated the amendments which were adopted to compel the New York, New Haven & Hartford Railroad to sell its holdings of stock of the Boston & Maine Railroad before July 1, 1910, voted against the bill. The defeat of the bill is said to mean that there will be no railroad legislation this year affecting in any way the ownership by the New Haven road of the 109,497 shares of Boston & Maine Railroad stock, and the matter of the unification of the two systems can be consummated so far as Massachusetts is concerned, unless action is taken in the courts to prevent it.

**Conductors Charged with Ticket Frauds at Newark, Ohio.**—William Melton, Oren Robinson and Walter Holler were arrested a few days ago on the charge of selling canceled tickets and failing to cancel tickets on the lines of the Ohio Electric Railway Company at Newark, Ohio, on which they were employed as conductors. The men gave bond in the sum of \$300 each and were released pending their trial.

**Court Acts Against Strikers at Chester, Pa.**—Residents of Chester, Pa., disgusted with the attitude of former employees of the Chester Traction Company, have invoked the aid of the courts against the boycott under which they have been suffering. Judge Broomall has said that there must be no discrimination between union and non-union men. No more goods are to be refused to people who ride on the cars by merchants who were threatened by the strikers. The board of trade hopes that this action will put an end to the boycott.

**Gasoline Line to Be Converted to Electricity.**—The Missouri & Kansas Interurban Railway, operating between Kansas City, Mo., and Olathe, Kan., has under consideration a plan to change the motive power of the line from gasoline to electricity. The business of the company has increased rapidly since the opening of the line, and this is the principal reason for the contemplated change. It is said that the company will secure an entrance to Kansas City over the tracks of the Metropolitan Street Railway. No official information about the details of the reported change is available for publication at this time. The road is 22 miles long and at present is operating seven Strang gasoline-electric motor cars.

**Conditions of San Francisco Grant Result in Return to Horse Cars.**—Horse cars have been put in service again in San Francisco, the first time they have been used since the fire of April, 1906. This action follows the refusal of the Board of Supervisors to grant a permit to the Sutter Street Railroad to operate electric cars over the outer tracks on lower Market Street. The company has a franchise to operate horse cars over the outer tracks on the street, but shortly after the fire a temporary permit was given to use electricity. From time to time that permit was renewed, but the permit expired June 1 and the Supervisors have refused to renew it except on condition that the company pay \$1,000 a month rental for the use of the line and in addition agree that a municipally owned road or a road yet to be built shall have the right to run over the same tracks.

**Financial and Corporate**

**Stock and Money Markets**

NEW YORK, JUNE 17, 1908.

The real trouble with Wall Street at present is that the market has few outside participants. What Wall Street needs is a larger investing public. The low records that have been made in the volume of transactions within the past week reflect the fact that outsiders are not investing in large amounts. Otherwise Wall Street conditions are ideal; money is cheaper than it has been for many months, crop news is of the most encouraging character, there is no serious drain of gold to Europe, steel prices have been reduced to offer encouragement to manufacturers, there are no violent price fluctuations to alarm the timid and many regular dividend paying securities offer handsome returns for permanent investors. The disturbing elements of presidential conventions and attendant political unrest should have been discounted.

That the present dullness cannot last is the calm assurance of the houses of the Street. That plenty of money is held in the country ready for investment the over-subscription of recent bond issues indicates. Time and conservative policies will eventually restore full confidence.

The general trend of the market for the week was toward lower levels, although the declines were not extreme in many instances or marked by sudden violence. Prices did not "break," but simply sagged because buyers were scarce. As a rule the industrial stocks showed less weakness than railroad stocks, due, doubtless, to the fact that the figures of earnings of leading railroads showed further decreases. The copper shares and steel shares were steady and, while the listed traction stocks recorded declines, they were in no case of serious extent. On June 16 much more activity was displayed and advances were noted throughout almost the entire list. There was also encouragement in the fact that the volume of transactions was double that on many of the days during the previous week and the sentiment of the Street was altogether more hopeful.

Money is easier at all financial centers in Europe and in New York can be had on call at 1¼ and 1½ per cent, while 90-day funds are quoted at 2¼ and 2¾ per cent.

**Other Markets**

Trading in traction securities in Philadelphia was not heavy, although prices were well sustained and Philadelphia Rapid Transit was fractionally advanced over last week, closing on June 16 at 13¾. No financial statement of the company was made at the meeting of the directors on June 15, although it is understood that the company has made arrangements to pay the interest due on July 1 and has been assured a market for whatever bonds it desires to sell.

In Boston there was little trading during the week in traction stocks and transactions that took place were made at only fractional variations from previous prices. Boston Elevated Railway stock was a trifle lower than at the close of the preceding week.

In Chicago the market was somewhat stronger with more trading. Chicago City Railway bonds were firmer with some demand.

There were but few transactions in street railway securities on the Baltimore market. United Railways was quoted nominally at 10¾, with the income bonds selling at 51½.

Quotations for various traction securities as compared with last week follow:

	June 9.	June 16.
American Railways Company, Philadelphia.....	44½	44½
Boston Elevated Railway.....	a131	a131
Brooklyn Rapid Transit Company.....	48¾	47¾
Chicago City Railway.....	—	a190
Cleveland Electric Railway.....	50	52
Consolidated Traction Company of New Jersey.....	71	a71
Consolidated Traction Company of New Jersey, 5 per cent bonds.....	102¾	a103
Detroit United Railway.....	37	37
Interborough-Metropolitan Company.....	11½	10¾
Interborough-Metropolitan Company (preferred).....	32	29
Manhattan Railway.....	135	135
Massachusetts Electric Companies (common).....	10¼	9½
Massachusetts Electric Companies (preferred).....	*49	46
Metropolitan West Side Elevated Railway, Chicago (common).....	—	a17½
Metropolitan West Side Elevated Railway, Chicago (preferred).....	—	a50
Metropolitan Street Railway.....	—	a30
North American Company.....	60	a61
Philadelphia Company, Pittsburg (common).....	39	a39
Philadelphia Company, Pittsburg (preferred).....	41¼	41
Philadelphia Rapid Transit Company.....	12¼	a13¾
Philadelphia Traction Company.....	*87	88
Public Service Corporation, 5 per cent collateral notes.....	a96½	a98
Public Service Corporation, certificates.....	a69	a69
Twin City Rapid Transit Company, Minneapolis (common).....	91½	*90¼
Union Traction Company, Philadelphia.....	†47¾	a46¾

a Asked.  
\* Last sale.  
† Ex. dividend.

### Valuation to Be Made of Street Railways in New York

The New York Public Service Commission, First District, has adopted a resolution providing for valuation of the property of the street railway companies in Manhattan. The passage of the resolution followed the admission by the receivers of the New York City Railway of the necessity for further abolition of transfers and of the inability to comply with certain orders of the commission for increased service if obligations for rentals on leased lines are to be met. The resolution was as follows:

"Whereas, The receivers of the New York City Railway have stated to the commission that it is impossible for them to provide adequate service upon the street-car lines in Manhattan because there would not be sufficient funds to pay the rentals of many leased lines if the service were made adequate; and

"Whereas, The investigation made into the books of this company and its subsidiary companies last fall indicated in certain instances that the companies were greatly over-capitalized and that the rentals being paid were out of proportion to the value of the lines; and

"Whereas, Thousands of citizens of New York will be seriously inconvenienced by the abolition of transfers by the receivers; and

"Whereas, It has been asserted that if a fair rental were paid to the subsidiary companies based upon a fair value of their property, the company could give adequate service and retain a satisfactory system of transfers; and

"Whereas, These questions raised by the action of the receivers cannot be definitely answered without a knowledge of the value of the property of each line as one factor; therefore be it

"Resolved, That the commission proceed to inventory and appraise the property, tangible and intangible, of the street railway companies in the borough of Manhattan, and that the chairman have general direction of the work."

William R. Willcox, chairman of the commission, supplemented the resolution by a statement in which he said:

"The letters sent by the receivers to the commission seem to indicate that the first object of the receivers is to pay rentals of leased lines and other fixed charges. This idea is a mistaken one. The obligation resting upon those enjoying public franchises is primarily to give an adequate service, and it is to be regretted that the importance of serving the public is not considered at least equal with that of serving the stockholders. The commission has made orders, under the terms of the law, that adequate service shall be furnished under the four orders issued and to which reference has been made. No objection has been made by the receivers to the definition of adequate service which the commission has adopted and the only excuse that has been offered is that the fixed charges will not permit the expenditure to give an adequate service to the people and an implication is made that if adequate service is insisted upon the system will be disintegrated and transfers from one line to another therefore refused.

"Section 49 of the Public Service Commissions law empowers this commission to regulate rates of fares between companies and to provide for continuous rides by transfers between two or more lines. Manifestly it cannot fix rates of fare or take action compelling the issuance of transfers or arrange for a joint rate until it knows the value of the company's property. In order to ascertain this value we have by resolution directed an appraisal of all the property, tangible and intangible, of the surface lines in Manhattan and the Bronx, and that appraisal will be made under the direction of the best experts in the country.

"So far as the orders are concerned the receivers have it in their power to ask for a rehearing under the law and if such request is made a rehearing will be cheerfully ordered. Otherwise the directions of the commission for adequacy will be insisted upon, for it is time to have it thoroughly settled whether a mismanaged local public service corporation can escape the obligations placed upon it by the law of the State when it throws itself into the hands of receivers appointed by any court. If such action on the part of such corporation relieves it from the operation of the laws of the State and thus constitutes immunity so far as the operation of the statutes is concerned the sooner it is known the better."

No announcement was made of the identity of the engineers who will value the properties.

Oren Root, general manager for the receivers, issued a statement in which he said:

"The action of the Public Service Commission in voting to inquire into the value of the street railway properties in the borough of Manhattan before issuing any further orders for increase of service commends itself to the judgment of the receivers. The receivers have no interest in the property other than its operation for the benefit of the public and for the creditors: they are officers of the United States

Circuit Court; they took the property as they found it and are operating it in accordance with the instructions of the court.

"The receivers are not 'defiant' of any State law, order or regulation; nor do they assume that as appointees of a federal court they are 'immune' from the operation of laws enacted by the people of this State.

"If the commission exercises this power contrary to the judgment of those in charge of the properties the commission must stand responsible for the conditions which it will thereby create, and surely those in charge of the properties should not sit silent when it is their honest judgment that the carrying out of some particular orders will result disastrously to the property or the public.

"From what has been said recently in the public press one might infer that the receivers are keenly solicitous to save exorbitant rentals for lessor companies. Nothing can be further from the truth. The receivers were instructed to preserve the property as a unitary system with all its details of connection and transfer, but subordinate always to the controlling element. A default under a lease means the return of property to the lessor, but the receivers have not hesitated to take that course when the cost of operating with improved service made the continuance of such payments a losing proposition. We have up to the present time defaulted on the following fixed charges:

Metropolitan Street Railway:		
General collateral trust mortgage...	\$12,500,000 @ 5 per cent.	\$625,000
Four per cent refunding mortgage...	16,604,000 @ 4 per cent.	664,160
Dividend rental on capital stock...	52,000,000 @ 7 per cent.	3,640,000
Third Avenue Railroad:		
First mortgage.....	\$5,000,000 @ 5 per cent.	\$250,000
First consolidated mortgage.....	37,560,000 @ 4 per cent.	1,502,400
Dividend rental on capital stock...	15,995,800 @ 6 per cent.	959,748
Central Crosstown Railroad:		
Dividend rental on capital stock...	\$600,000 @ 15 per cent.	\$90,000
Fulton Street Railroad:		
First mortgage.....	\$500,000 @ 4 per cent.	\$20,000
Totals .....	\$140,759,800	\$7,751,308

In addition to the above, rentals in relation to which the receivers have asked the court for instructions are as follows:

Totals from fixed charges.....			\$140,759,800	\$7,751,308
Central Park, North & East River Railroad:				
Dividend rental on capital stock...	\$1,800,000 @ 9 per cent.	\$162,000		
Twenty-eighth & Twenty-ninth Street Crosstown Railroad:				
First mortgage.....	\$1,500,000 @ 5 per cent.	\$75,000		
Totals.....	\$3,300,000	\$237,000		
Grand totals.....	\$144,059,800	\$7,988,308		

"There remain no more fixed charges which can be eliminated without cutting off the interest on the securities of the underlying companies. If the interest on such securities is not paid those companies so affected will also immediately become divorced from the system. We have already under consideration the necessity of defaulting under the leases of the Central Park, North & East River Railroad Company and the Twenty-eighth & Twenty-ninth Street Crosstown Railroad."

The receivers of the Metropolitan Street Railway on June 10 asked permission from Judge Lacombe to discontinue the operation of the Twenty-eighth & Twenty-ninth Streets Crosstown Railroad and the payment of the rental to the Central Park North & East River Railroad of 9 per cent on its \$1,800,000 stock. The receivers ceased operating the Fulton Street Railroad last week.

### Manhattan Railway Bond Issue Approved

The Public Service Commission of the First District of New York has granted the Manhattan Railway Company permission to issue \$10,818,000 of refunding bonds and \$894,000 of other bonds. The \$10,818,000 of bonds will be issued to take up by exchange or otherwise a similar amount of 6 per cent bonds, due on July 1, under the first mortgage of the Manhattan Railway, made on July 10, 1878. The other bonds are for the discharge of obligations, amounting to \$894,000, for extensions already constructed.

In his report Chairman Willcox said there seemed to be no valid objection to the issue of the \$10,818,000 of 4 per cent refunding bonds. He inclined to the opinion that the commission might lawfully consent to the smaller bond issue for refunding purposes. He agreed with the officials of the company that there was little likelihood that it would realize par from the sale or exchange of \$10,818,000 of bonds bearing 4 per cent interest, especially in view of the present condition of the money market. As the Manhattan Railway was leased by the Interborough Rapid Transit Company, it was no longer an operating company, he said, or in a position to utilize its earnings from operation in making up any discount on bonds or to create a floating debt to cover the same. He, therefore, believed discount on bonds should be carried to operating expenses. In view

of the peculiar circumstances, however, he advised that the additional issue ought to be allowed, but only to the amount actually needed to make up such discount. He said that the bonds should be sold publicly, and subject to the commission's audit.

**Report of Bondholders' Committee of Third Avenue Railroad**

Earnings of the Third Avenue Railroad of New York in the year ended June 30, 1907, according to a statement compiled for holders of the first consolidated mortgage 4 per cent bonds, were not within \$700,000 of the amount required to pay the interest on the first consolidated mortgage bonds. The circular is signed by James N. Wallace, president of the Central Trust Company, New York, and chairman of the committee, and his associate members. The examination of the Third Avenue Railroad and companies the stock of which, in whole or in part, is covered by the first consolidated 4 per cent mortgage of the Third Avenue road, made by Marwick, Mitchell & Company, has been completed. The accountants make the following report for the year ended June 30, 1907:

Gross earnings.....	\$6,261,162
Operating expenses.....	4,399,898
Net earnings from operation.....	1,861,264
Income from other sources.....	254,231
Total income.....	\$2,115,495
Taxes (exclusive of special franchise tax).....	296,768
Net income.....	\$1,818,727
Interest on Third Avenue Railroad first mortgage bonds, \$250,000.....	
Interest on funded debt of companies ranking ahead of Third Avenue Railroad consolidated mortgage bonds.....	377,000
Estimated net interest payable on floating indebtedness of companies to others than Third Avenue Railroad Company.....	158,134 785,134
Balance of income (before making provision for special franchise tax and depreciation).....	\$1,033,593

No provision is made in the above report for the special franchise tax, which is now in course of litigation, or for depreciation.

Mr. Wallace announces that the reorganization and protective committee, which represents \$34,000,000 of the bonds, proposes to await the results for a reasonable length of time of independent management of the system by the receiver as a basis for formulating a proper plan of readjustment.

**Ashland Light, Power & Street Railway Company, Ashland, Wis.**—Stockholders of this company have voted to issue \$450,000 in bonds for improvements.

**Chicago (Ill.) Consolidated Traction Co.**—In view of the default in payment of interest due June 1 on the general mortgage 4½ per cent bonds and at the request of owners of a large amount of the bonds, J. M. Wallace, Hugh J. Grant, Henry A. Blair, Chauncey Keep and Charles G. Dawes have consented to act as a committee for the protection of the interests of the bondholders who shall become parties to an agreement dated May 20 last and lodged with the Central Trust Company as depository. All bonds must be deposited in negotiable form. F. L. Babcock, of New York, is secretary of the committee and Joline, Larkin & Rathbone and L. C. Krauthoff counsel.

**Electric Properties Company, New York.**—The Electric Properties Company reports as follows for the fiscal year ended April 30, 1908: Interest, dividends, etc., \$280,671; expenses, \$85,630; balance, \$195,041; dividends preferred stock, \$179,344; balance, \$15,697; directors' fees, \$1,570; surplus, \$14,127; previous surplus, \$35,447; total surplus, \$49,574. The balance sheet as of April 30, 1908, shows: Subsidiary company—Westinghouse, Church, Kerr & Company, capital stock, \$7,000,000; investments, \$1,299,204; total current assets, \$881,084; profit and loss (surplus), \$49,573; at the annual meeting of the stockholders the retiring directors were re-elected and Horace E. Smith was elected to fill a vacancy in the board. The directors organized by re-electing John F. Wallace, president, and the following executive committee: Charles A. Allen, N. W. Halsey, Paul D. Cravath, F. D. Underwood, R. B. Van Cortlandt and John F. Wallace.

**Harris Trust & Savings Bank, of Chicago.**—N. W. Harris & Company, of New York, and the National City Bank, of New York, announce that they have purchased from the Chicago Railways Company \$3,000,000 additional first mortgage 5 per cent bonds, the proceeds from which will go toward the work of rehabilitation. Although the company has not expended all the proceeds of the \$5,000,000 bonds sold in February, this sale of an additional \$3,000,000 was made in order to take advantage of the lower prices of materials.

**Hickory (N. C.) Railway & Power Company.**—This company has reorganized and changed its name to the Hickory Railway Company. W. A. Thornton is president and C. M. Hardin is secretary.

**Hudson & Manhattan Terminal Company, New York, N. Y.**—The Hudson & Manhattan Terminal Company is said to have disposed of about \$3,000,000 of 6 per cent bonds. It is stated that some of the \$15,000,000 of 5 per cent bonds offered a few months ago are still in the company's treasury, but the officials are said to be of the opinion that present conditions of the investment market justified a 6 per cent rate.

**Indianapolis (Ind.) Traction & Terminal Company.**—At the annual meeting of stockholders on June 9 directors were re-elected as follows: Hugh J. McGowan, Hiram P. Wasson, Robert I. Todd and John J. Appel, of Indianapolis, and W. K. Schoopf, of Cincinnati. The report of the company showed gross earnings for 1907 of \$2,680,506. The net earnings for the same period were \$315,560.

**Louisville (Ky.) Railway.**—It is reported that the directors of the Louisville Railway have under consideration the purchase of control of the Louisville & Eastern Railroad, which is in operation to La Grange and has tracks laid to Shelbyville. The latter company owns a right of way to Frankfort and Newcastle.

**Milwaukee Light, Heat & Traction Company, Milwaukee, Wis.**—Permission has been granted by the Wisconsin Railroad Commission to the Milwaukee Light, Heat & Traction Company to issue \$2,500,000 refunding and extension mortgage 5 per cent gold bonds. This is the formal permission for carrying out the plan announced some time ago for financing extensions and improvements of the system as needed.

**Missouri & Kansas Interurban Railway, Kansas City, Mo.**—J. A. Edson has been appointed receiver for the Missouri & Kansas Interurban Railway. The application was not opposed, and the appointment of a receiver is understood to be preparatory to a reorganization and readjustment which will provide for a change of motive power from gasoline to electricity.

**Montreal (Que.) Street Railway.**—The directors of the company voted on June 10 to offer to shareholders of record June 30 the right to subscribe at \$125 per share (par \$100) for \$1,000,000 new stock to the extent of one share for every nine shares of their holdings. Subscriptions are payable in monthly installments, beginning Aug. 1.

**Nashville (Tenn.) Railway & Light Company.**—This company, it is stated, will sell about \$2,000,000 of bonds for debt funding purposes.

**Rutland Railway & Light Company, Rutland, Vt.**—Earnings for the year ended May 31, 1908, are as follows: Gross receipts, \$254,555; operating expenses, \$142,015; net earnings, \$112,540; interest, \$75,000; surplus, \$37,540. The comparative statement of earnings and expenses of the company for the 12 months ended May 31, 1906, 1907, 1908, is as follows:

RAILWAY.			
	Earnings.	Expenses.	Net.
1906.....	\$94,899	\$55,699	\$39,200
1907.....	105,806	55,735	50,071
1908.....	106,618	59,178	47,440
GAS.			
	Earnings.	Expenses.	Net.
1906.....	\$28,916	\$20,275	\$8,641
1907.....	33,025	22,628	10,397
1908.....	34,880	22,230	12,650
WATER POWER AND ELECTRIC LIGHT.			
	Earnings.	Expenses.	Net.
1906.....	\$60,278	\$40,707	\$19,571
1907.....	88,756	53,927	34,829
1908.....	113,956	60,605	52,451
CONSOLIDATED.			
	Earnings.	Expenses.	Net.
1906.....	\$184,093	\$116,681	\$67,412
1907.....	227,589	132,291	95,298
1908.....	254,555	142,014	112,541

**Oneonta & Mohawk Valley Railroad, Oneonta, N. Y.**—Justice George F. Lyon has appointed J. Choate, chief engineer and general manager of the Oneonta & Mohawk Valley Railroad, receiver of the property. This road extends from Oneonta to Mohawk, by way of Cooperstown and Richfield Springs. It has been in litigation for five years, and two years ago was sold under foreclosure for \$960,000 to the present reorganized company. About \$1,500,000 has been spent on the property, including \$300,000 on the large dam across the Susquehanna at Colliers, recently completed. The Rochester Trust & Safe Deposit Company recently ob-

tained a judgment of \$300,000 against the company, under which the property is advertised for sale on July 27. Justice Lyon hopes to be able to preserve the property for the benefit of the creditors.

**Seattle, Renton & Southern Railway, Seattle, Wash.**—Peabody, Houghteling & Company, Chicago, offer \$600,000 first-mortgage 5 per cent serial bonds dated May 1, 1908, and due in annual installments on May 1 from 1913 to 1924, as follows: 1913, \$30,000; 1914, \$40,000; 1915 to 1917, \$50,000 yearly; 1918 to 1923, \$60,000 yearly; 1924, \$20,000; but redeemable in the reverse of their numerical order on May 1, 1913, or on interest dates thereafter, at 105 and interest.

**South Side Elevated Railroad, Chicago.**—This company has passed the quarterly dividend on its capital stock of \$10,323,800. Three per cent dividends were paid from 1899 to June, 1901, when the rate was raised to 4 per cent. Last March the quarterly dividend was cut to  $\frac{3}{4}$  of 1 per cent. The earnings for the last quarter are said to have been at the rate of only about  $2\frac{1}{2}$  per cent per annum. An official circular to stockholders says: "In the circular to stockholders, issued May 22, 1908, we expressed the hope that the effects of the depression in general business would soon disappear. In that hope we have been disappointed. Therefore, in order to carry out the purpose in any event to keep your property out of floating indebtedness, your directors have resolved to postpone the declaration of a dividend. The maintenance of your property in first-class condition in every respect remains a first consideration. While this action is a great disappointment to us, our confidence in the future of the property is undiminished."

**Southern Traction Company, Belleville, Ill.**—This company has filed notice of increase of its capital stock from \$2,500 to \$1,500,000. The company is building an electric railway from East St. Louis to Belleville and proposes to extend the Belleville line to Cairo, Ill. The project is being financed by English capital. H. D. Mephan, of St. Louis, is the promoter, and construction work is under way.

**Tampa (Fla.) Electric Company.**—Stone & Webster, of Boston, general managers of the Tampa Electric Company, recommend for investment \$600,000 of Tampa Electric Company first mortgage 5 per cent sinking fund bonds, due June 1, 1933, at 93 $\frac{3}{4}$  and interest, yielding 5 $\frac{1}{2}$  per cent. The company is earning more than four and one-half times the bond interest charges. The market value of the stock is nearly three times the face value of the issue of bonds. Gross earnings since 1900 have increased from \$152,123 to \$521,181 and net earnings have increased from \$61,410 to \$133,050.

**Toledo (Ohio) Railways & Light Company.**—A mechanic's lien for \$37,052 has been filed against the property of the Toledo Railways & Light Company by the John A. Roebling Company for material furnished. The claim, the company states, is evidenced in part by three notes, one for \$10,000, due Feb. 10, 1908; another for \$5,000, due Feb. 15, and the third for \$10,000, due March 25.

**Toledo, Bowling Green & Southern Traction Company, Findlay, Ohio.**—At a joint meeting of stockholders of this company and the Toledo Urban & Interurban Railway a compromise agreement for the purchase of control of the latter company by the Toledo, Bowling Green & Southern Traction Company was reached. R. H. Weatherhead, F. C. Lawson, R. L. Martin, Charles E. Francis and E. E. Kellogg, named as a committee, recommended the purchase and that a new bond issue of \$600,000 be created. Of the total amount \$400,000 is to be paid to bondholders of the Toledo Urban & Interurban Railway, and the remaining \$200,000 will be retained to provide in part for the payment of debts. In addition to this \$200,000 there are \$187,500 bonds now in the treasury of the Toledo, Bowling Green & Southern Traction Company which would be more than sufficient to liquidate the debts. To make the purchase on this basis, the committee stated that it would be necessary for every bondholder of the Toledo Urban & Interurban Railway to agree to the terms. The stockholders of the Toledo, Bowling Green & Southern Traction Company voted to make the purchase, 11,000 shares being in favor of the proposition and 1000 against. The large stockholders of the two companies are almost identical.

**West Penn Railways, Pittsburg, Pa.**—Robt. Glendinning & Company, Philadelphia, are offering at 97 and interest, yielding 5 $\frac{1}{4}$  per cent, \$300,000 first mortgage 5 per cent gold bonds due January, 1931. The total amount authorized under the mortgage is \$6,000,000, of which \$5,095,000 bonds are outstanding, \$504,000 are held by the trustee to retire underlying bonds and \$401,000 are reserved for extensions, improvements, etc.

## Traffic and Transportation

### Action to Enforce Service on Sunday

The Electrical Installation Company, of Chicago, has brought suit against the Winona Interurban Railway, the Winona Assembly and Summer School Association, and the Winona & Warsaw Railroad, in the United States Circuit Court at Indianapolis to enforce Sunday service on the Winona Interurban system. The bill of complaint alleges that by acceptance of the charter granted by the State the interurban company obligated itself by operation of law to perform certain duties toward the State and the public, including the operation of the road at all reasonable times as the public service might demand, and especially to operate its road every day in the week instead of only six days. An order of court compelling such operation is requested.

The complainant alleges that it is the holder and owner of \$425,000 bonds of the interurban company, received as part payment for the construction of the portion of the road between Warsaw and Goshen, and that prior to the execution of the contract by which the complainant was to build the road, the officials of the Winona railway had stated repeatedly that the road would be operated on Sunday, but had objected to a clause as to Sunday operation being inserted in the contract on the ground that such a clause might be objectionable to many of the stockholders and constituents of the Winona Assembly and Summer School Association, and that it was the understanding that the road would be operated every day in the week and on the strength of such understanding the contract was entered into by the complainant.

The complaint further states that the road was completed and put in operation in 1906, but has been operated only six days in each week, despite the protests of the complainant; that if said road had been operated also on Sundays, it is believed there would have been 20 per cent additional earnings; that failure to operate on Sundays is in disregard of the rights of the complainant and the public at large, and by reason thereof the security of the bonds is impaired.

The complaint sets forth that the road has not earned the interest on its bonds over and above the cost of operation and maintenance, and that part of certain subsidies granted in Elkhart & Kosciusko counties has been used in the payment of interest, and the only money now applicable for the payment of interest, according to the complaint, is such as may be earned by the road, and the complainant fears that the road will not be able to pay the interest due on July 1.

The complainant alleges that the road has a floating debt of \$30,000, and expresses the fear of a suit and execution on the property; also that nearly all the capital stock of the Winona Interurban Railway is held, either directly or indirectly, for the benefit of the Winona assembly, and without proper consideration. The legality of the ownership of this stock by the assembly is questioned and the charge made that too large an amount has been paid by the Winona Interurban Railway for the use of certain tracks of the Winona & Warsaw Railway at Warsaw.

S. C. Diekey, general manager, says the contract to build the Goshen division of the Winona system was originally let to John B. Marshall & Company, of New York, in May, 1905. A short time later the Electrical Installation Company bought out the Marshall company and a new contract was made.

Dr. Diekey said that it should be distinctly understood that the directors have not voted on the Sunday operation question and have postponed any action until after the road is completed to Peru. He said that there is an honest difference of opinion on the Sabbath operation question among the members of the board. However, the board is unanimous in the opinion that the complainant has no case, as the interest on the bonds it holds had been and always would be paid promptly.

### Transfer Order Modified at Salt Lake City

The Utah Light & Railway Company, of Salt Lake City, Utah, has modified the rule providing that transfers should be issued only when requested by passengers at the time fares are paid. The new order to conductors states:

"Ask passengers at time fare is paid if they want transfers, provided car is not crowded, in which case you will call out transfers as fares are being paid.

"When making your first collection through the car you are permitted, in the event that a passenger did not take a transfer at the time the fare was actually handed to you, to issue a transfer, provided you have not passed beyond reach.

"On second and subsequent collections this same rule applies to all passengers paying fare on those collections, but not to previous collections.

"The above rule does not apply to passengers sitting on rear seats or standing on back platform, who are, of course, in reach at all times while you are on duty on rear platform, but transfers may be issued to such passengers at any time before the completion of the particular collection during which their fare is paid.

"In the case of small children unaccompanied you will issue a transfer should they forget the rules governing the issuing of transfers.

"In other words, you will in the future be governed by the same rule as heretofore except that you will ask passengers at time fare is paid if they want transfers."

#### Trolley Express Service on Connecticut Company's Lines.

—Officials of the Connecticut Company are said to be arranging for the opening of a trolley express between Stafford Springs and Rockville. It is proposed to begin the new service immediately. The express car will make two trips a day.

**Boston Trolley Bureaus Combine.**—With the idea of serving the public better the Boston & Northern Street Railway, the Old Colony Street Railway and the New England Street Railway Club will combine their free trolley information bureaus in the office of the passenger department of the Boston & Northern railway and the Old Colony railway at 309 Washington Street, Boston. The consolidated office will combine the features of the separate offices, and will have trolley publications and maps and a corps of employees to consult with travelers.

**Transfer Decision Favors New York City Railway.**—Harcourt Bull, an attorney, who sued the New York City Railway to recover penalty for refusal to give him a transfer on a transfer over its lines and recovered 5 cents alleged excess fare paid and costs for violations of those sections of the railroad law relating to fares and transfers, lost his case in the decision handed down by the Court of Appeals at Albany June 12. The court affirmed the order below and rendered judgment absolute against Mr. Bull, with costs in all courts, and decided that he was not entitled to judgment under the provisions of any of the sections of the railroad law he had cited.

**Local Selectmen Overruled in Freight Grant from Massachusetts Railroad Commissioners.**—The Railroad Commissioners of Massachusetts have granted the Electric Express Company the right to transport freight and express over the Springfield & Eastern Street Railway through Palmer. This grant overrules the Palmer selectmen, who refused a franchise without a time-limit clause. The terms of the franchise from the Railroad Commissioners are practically the same as those formulated by the local selectmen at Palmer in their grant of last year, the important difference being that the present right is not limited as to time. The franchise drawn by the selectmen limited the time to five years.

**Limited Service on Oneida Railway Between Utica and Syracuse.**—Under the new timetable to go into effect on the Oneida Railway on June 21 the entire service between Utica and Syracuse will consist of local trains operated from each terminal hourly between 5:30 a. m. and 11:30 p. m. on running time of 1 hr. 50 m. from the center of Utica to the center of Syracuse, and limited trains making stops only at Oneida Castle and Canastota, operated from each terminal hourly between 7:05 a. m. and 7:05 p. m., with an additional limited train from each terminal at 10:05 p. m. The running time of the limited trains will be 1 h. 25 m. from the center of Utica to the center of Syracuse.

**Race Track Traffic in New York.**—The action of Governor Hughes, of New York, in signing the bills to prohibit betting at race tracks has already resulted in reducing the attendance at the races and has given rise to discussion of the probable effect of the decrease in traffic of the Brooklyn Rapid Transit Company and the Long Island Railroad. These two roads have carried nearly all the racing enthusiasts to races near New York. E. W. Winter, president of the Brooklyn Rapid Transit Company, and Ralph Peters, president of the Long Island Railroad, think that there will not be material loss. Mr. Winter is somewhat doubtful whether the race traffic has ever yielded any profit to the Brooklyn company. He says that people are impressed by the sight of crowded trains without giving thought to the low rate of fare and the extra cost of providing special service for the movement of traffic. Mr. Peters repeats what Mr. Winter says about the cost of the extra service and adds that the regular schedule of the Long Island Railroad has been almost completely demoralized for two hours of each racing day.

## Personal Mention

Mr. E. M. Green has been appointed superintendent of the Blue Ridge Light, Power & Railway Company, Staunton, Va.

Mr. William R. Miller, superintendent of the Danville & Lomburg Street Railway, Grovania, Pa., is dead. Mr. Miller was formerly superintendent of the Cumberland & Westernport Electric Railway, Cumberland, Md.

Mr. John Powers, superintendent of power stations of the Sterling, Dixon & Eastern Railway, of Sterling, Ill., has been appointed foreman of lines of the Galesburg Railway & Light Company, of Galesburg, Ill.

Mr. Percy Wheeler, managing director of the Metropolitan Amalgamated Railway Carriage & Wagon Company, Ltd., of Birmingham, England, is visiting this country to study the latest American practice in the manufacture of wooden and steel cars.

Mr. Bernard McCloskey has been appointed counsel of the New Orleans (La.) Railway & Light Company. Mr. McCloskey has been successful as attorney for important boards in New Orleans, including the dock board and the Orleans levee board. It is said that the development of the new levee improvements in New Orleans has been largely due to Mr. McCloskey's advice and effort.

Mayor Tom L. Johnson, of Cleveland, has been elected treasurer of the Municipal Traction Company, of Cleveland; Mr. Fred C. Howe, State Senator, has been elected assistant treasurer; Mr. Thomas P. Schmidt, State Senator, manager stock department; Mr. J. B. Tanner, formerly city accountant, cashier; Mr. H. Wilcox, formerly assistant city paymaster, assistant cashier; Mr. M. C. Truesdale, formerly a clerk in the water works department, assistant auditor; Mr. T. J. Casey, formerly meter inspector in the city water works, division superintendent.

Mr. W. W. Cole, whose resignation as general manager of the Elmira (N. Y.) Water, Light & Railroad Company, to become general manager of the public utilities department of Dodge & Day, engineers, of Philadelphia, was noted in the last issue of the



Mr. W. W. Cole

in his first work was constructing engineer for Mr. George H. Norman, of Boston, and the New England Construction Company. While engaged in this work he had direct charge of the erection of the dam at Gloucester, Mass., and of the dams at First and Second Beach at Newport, R. I., and of the water works at Green Bay, Wis. Subsequently, Mr. Cole became connected with the Toledo, St. Louis & Kansas City Railroad as constructing engineer. On account of an injury, he went to Boston and entered the expert course of Thomson-Houston Company and was superintendent of the electrical installation of the Allston division of the West End Street Railway, of Boston. After completing this work, Mr. Cole became manager of the Utica (N. Y.) Belt Line. From Utica he went to Elmira and constructed the West Side Railroad and seven years ago was personally interested in the consolidation of all the utilities of Elmira and became vice-president of the Utica Water, Light & Railroad Company. During his connection with the Utica Company Mr. Cole has been connected as consulting engineer with most of the developments in Western New York and has been employed in a consulting capacity by some of the large properties in the United States. It was on account of the increase in his consulting practice that Mr. Cole decided it would be to his benefit to become allied with one of the larger engineering organizations and in consequence he has become identified with Dodge & Day in full charge of the operating department for public utilities and on expert and consulting work pertaining to this line of business. Mr. Cole will also look after the financing of new engineering projects, including electric railways, power plants and hydro-electric developments. When Mr. Cole went to Elmira the various properties were either in the hands of receivers or had undergone reorganization. All properties have since been placed on a strong financial basis, and the company is not only able to meet all its financial obligations, but has

invested large sums in reconstruction. About \$400,000 was expended in improvements and betterments last year alone. Further, the securities have found a home market, and the confidence of the public has been gained, all this the result of the methods employed in operating the properties the last six years. As previously stated in the *ELECTRIC RAILWAY JOURNAL*, Mr. Cole expects to leave Elmira about Aug. 1.

#### OBITUARY

**Mr. O. U. McClintock**, president of the Bellamy Vestlet Company, Cleveland, Ohio, was instantly killed in Cleveland Sunday, June 14, by being crushed between two cars. Mr. McClintock is survived by a widow and four children.

#### NEW PUBLICATIONS

**Electric Power and Traction.** By F. H. Davies. New York: D. Van Nostrand Company; 1908; 293 pages (5½ in. x 8¼ in.), including glossary and index; illustrated. Price, \$2.50.

This is a well printed and well written book on the subject of electric power and traction intended apparently for the general reader and for those who require a general knowledge of electricity. The writer gives special attention to the use of electric power in the textile, printing and other industries. Electric traction takes up about half the book and while the treatment of this subject is mainly historical and elementary, the main facts are presented compactly in simple and readable English. In general, Mr. Davies, who is a Briton, has turned out a book which should appeal to American readers even if his patriotism does influence him to state that of three causes which make a motor unreliable the first is that "it may belong to that cheap and shoddy class of machine turned out in thousands in America and Germany to meet the demand which unfortunately exists for such." It would seem that John Bull will not manufacture a cheap motor even though his compatriots demand it!

**Steam-Electric Power Plants.** By Frank Koester. New York: D. Van Nostrand Company; 1908; 455 pages (7 in. x 10½ in.), including appendix and index; illust. Price, \$5.

The literature on power plant design and construction is scanty, but it is not enriched by the volume under consideration, an inspection of which reveals an abundance of superfluous text and needless or oversized illustrations. The latter, although taken from the most diverse sources, have usually been reproduced absolutely unchanged except that the size has been made to conform to the limits of the page; as a result the lettering on some is absurdly large and on others so small as to be practically unreadable. Views taken from French and German periodicals appear with the original lettering; an amusing instance of this is afforded by two plans of the Fifty-ninth Street station of the Interborough Rapid Transit Company, of New York, taken from the proceedings of a German engineering society. Many of the tables have been reproduced with the same disregard for proportion and the figures and type exhibit a range of size from agate to primer, according to the degree of reduction necessary to get the tables within the page dimensions. Although the book is not likely to reach any but American or English readers, the author for some occult reason has taken from Babcock & Wilcox's "Steam" the table covering all known coals throughout the world.

Lack of space forbids any extended analysis of the author's text, but even a cursory survey will show very uneven treatment of the different branches of the subject. For instance, the chapter on electrical equipment does not even mention transformers, although most of the views are of the largest high-tension railway plants. On the other hand, there are elaborate write-ups of individual devices, such as the CO<sub>2</sub> recorder, when all that the reader requires is a brief explanation of its principle and its place in power station economy.

The Ohio State Railroad Commission has decided how the Phillips Street crossing in Toledo must be protected by the companies using the crossing. The Toledo Railways & Light Company has been instructed to install a derailing switch on the west side of the tracks of the Lake Shore & Michigan Southern Railroad and on the south side of the tracks of the Michigan Central and the steam railroads have been ordered to continue the gates, electric bells and watchman at the crossing. The steam railroads have also been instructed to operate trains over the crossing at a speed not to exceed 20 m.p.h. The Toledo Railways & Light Company will install a metallic trolley guard so that cars will be fully protected even if the pole should jump the wire at the crossing.

## Construction News

Construction News Notes are classified under each heading alphabetically by States.

An asterisk (\*) indicates a project not previously reported.

#### FRANCHISES

**San Bernardino, Cal.**—John H. Fisher, of Redlands, representing the Redlands Central Railway, has purchased at public auction for \$125 a franchise for an electric railway from the limits of Redlands to Redlands Junction. The Redlands Central Railway at present operates an electric railway from Redlands to Riverside.

**San Francisco, Cal.**—The Presidio & Ferries Railroad Company has applied for a franchise to cover the new line which it has already constructed under a temporary permit.

**Hancock, Mass.**—The Pittsfield Electric Street Railway has been granted a franchise to operate an electric railway in Hancock. The length of track to be laid in Hancock is 3 miles, while it will take about 2 miles from the present terminal of the West Pittsfield line to reach the Hancock town line. It is said that the company will start work on the extension this fall at West Pittsfield. P. C. Dolan, Pittsfield, manager.

**Excelsior Springs, Mo.**—The City Council has granted a franchise to Excelsior Springs & Suburban Railway to operate an electric railway from the electric light plant to the C. M. & St. P. station, a distance of 1½ miles.

**Toledo, Ohio.**—The Toledo, Ottawa Beach & Northern Railway is reported to have applied to the Council of Monroe for permission to build the proposed extension of its road through certain streets of that city. L. E. Beilstein, general manager.

**Huntingdon, Pa.**—The Brookside Electric Railway is said to have applied to the City Council for a franchise to build a street railway in the east end of the town to extend up Stone Creek. M. A. Miller is interested in the above company.

**\*Uvalde, Tex.**—M. M. McFarland, of Austin, Tex., has been granted a 50-year franchise for a street railway from the depot to the plazas and on any street in the city.

**Seattle, Wash.**—The Seattle, Snohomish & Everett Railway has applied to the county commissioners for a franchise to construct an electric railway from the Seattle city limits and the town of Bothell over the Kink County roads. C. W. Kimball, president. [E. R. J., June 13, '08.]

#### RECENT INCORPORATIONS

**\*International Traction & Power Company, Phoenix, Ariz.**—Incorporated in Arizona with a capital stock of \$5,000,000. Headquarters, Phoenix. Incorporators: J. A. Pfouts, Carl M. Gage, Thos. F. Durham and Thos. F. Deegan.

**\*Northeastern Electric Railway, Chicago, Ill.**—Incorporated in Illinois to construct an electric railway from Woodstock, through the counties of McHenry and De Kalb to Sycamore, De Kalb County. Principal office, Chicago. Capital stock, \$50,000. Incorporators: Clinton G. Lumley, E. C. Spinney, Irving D. Stevens, E. B. Harang, F. H. Rhodes, William L. Abbott, George W. Lyndon, George T. Goodrow, Charles A. Spenny, L. C. Winans, B. J. Simpson, M. A. Garrett, B. E. Livingston, E. P. Starni-berg and Darius A. Leland.

**\*Richmond County Transit Company, Rockingham, N. C.**—This company has been chartered with a capital stock of \$5,000. Incorporators: T. L. Covington, W. R. Rand and A. S. Dockery.

**\*Ha! Ha! Bay Railway, Bagotville, Que.**—Incorporated in Quebec to construct a railway to be operated by steam or electric power or both from a point on the Quebec & Lake St. John Railway, between Jonquirers station or Roberval, and its terminus in the town of Chicoutimi, to Ha! Ha! Bay, in the county of Chicoutimi; also two branch lines not exceeding 10 miles each in length, one northward to the Chicoutimi pulp mills and another southward to Lake Kenogami and a third branch from St. Alphonsse to St. Alexis, about 4 miles. Capital stock, \$600,000. Headquarters, Bagotville, Que. Provisional directors: A. Lepage, W. Levesque, J. A. Tremblay, E. McLean, Rev. H. Cinion, Bagotville, Que.; Lieut.-Col. B. A. Scott, P. A. Choquette, E. F. de Varennes, Quebec; F. A. Dubuc, Chicoutimi, Que.

**\*Oshkosh, Winneconne & Waupaca Railroad, Oshkosh, Wis.**—Incorporated in Wisconsin to build a road from Oshkosh to Waupaca, through Oshkosh, Vinland and Winne-



conne in Winnebago County, Poysippi and Bloomfield in Waushara County and Fremont, Weyauwega, and Lind in Waupaca County, a distance of 50 miles. Capital stock, \$100,000. Incorporators: William M. Bray, E. H. Steiger, Elmer Leach, Edward W. Murphy and L. J. Monahan, all of Oshkosh.

\***Wisconsin Northeastern Railway, Poysippi, Wis.**—Incorporated in Wisconsin to construct a line from Poysippi to Red Granite, Wis., a distance of 8 miles. Capital stock, \$60,000. Incorporators: John Moffatt, H. W. Colt, H. A. Dewey, Charles A. Benedict and W. H. Paulson, all of Poysippi.

#### TRACK AND ROADWAY

**Nashville & Huntsville Railway, Huntsville, Ala.**—Construction contracts have been awarded for this proposed electric railway according to a report from Huntsville, Ala., which says that I. L. McCord has let 5 miles of work to W. J. Bennett & Company, of Huntsville, and an equal amount to J. E. Toney, of Chattanooga. The Bennett contract will require the removal of about 100,000 cu. yd. of earth. This is to be completed by October. It is proposed to award contracts for the rest of the line also in 5-mile and 10-mile sections to insure rapid completion. Mr. McCord has opened offices at Huntsville. [S. R. J., May 11, '08.]

\***Westmoreland Power Company, Moncton, Alta.**—Application is being made at the current session of the New Brunswick Legislature for an act incorporating a company with this title, with power, among other things, to construct and operate electric railways in the city of Moncton and throughout the counties of Westmorland, Kent and Albert. Provisional directors: C. A. Murray, J. A. Nile, E. A. Smith, G. J. Sproul and R. McManus.

**British Columbia Electric Railway, Vancouver, B. C.**—This company expects to add 3 or 4 miles of new tracks to its system this year. It is officially announced that the electrification of the Westminster-Eburne line, 9 miles, will be started in about a month. R. H. Sperling, Vancouver, general manager.

\***Golden, Colo.**—It is reported that Rees C. Vidler and a number of Denver capitalists are interested in a plan to build an electric railway from Golden to the top of Mount Lookout.

**Connecticut Company, Waterbury, Conn.**—This company expects to begin within a few weeks the work of double-tracking North Main Street, between Farm Street and Tudor Street, and South Main Street from Washington Street to Glen Street. E. T. Gilbert, local manager.

**Chicago & Milwaukee Electric Railway, Chicago, Ill.**—This company is reported to have purchased 1000 tons of rails from the Illinois Steel Company.

\***Freeport, Ill.**—It is reported that residents of Freeport are taking steps to secure the construction of an interurban railroad from Freeport northward through the villages of Cedarville, Red Oak, Buena Vista and Orangeville, Ill., and to Monroe, Wis., a distance of about 35 miles. C. C. Zimmerman and Henry Richart, Cedarville, Ill., are interested.

**Chicago, Kankakee & Champaign Electric Railroad, Kankakee, Ill.**—It is officially announced that this company is now obtaining the right of way from Kankakee to Champaign. The proposed route is 75 miles, through one of the richest and best farming portions of Illinois. The first survey has already been made. The right of way will be purchased with deed and abstract of title, also 50-year franchises through the various towns on the line. As yet no contracts for the construction of the road have been let, but it is expected to award them as soon as the right of way is obtained and paid for. Capital stock, \$100,000. F. E. Hobart, secretary; R. W. Renton, chief engineer. General office, 184 Court Street, Kankakee. [S. R. J., May 2, '08.]

**Decatur, Sullivan & Mattoon Transit Company, Mattoon, Ill.**—R. B. Starbuck, president, writes that this company is shaping plans with a view to constructing its line from Mattoon to Sullivan (20 miles) first, then to complete the remaining 28 miles to Decatur. Propositions for the grade work and ties are under consideration, but the company is withholding final action pending negotiations with other contractors. From 2200 to 2500 tons of 70-lb. steel rails and rail fastenings will be required and the company is now ready to take up this feature of the work with rail concerns. Mr. Starbuck says: "Originally we intended to use the electric trolley system, but more recently have been giving some consideration to the gas-electric system, though our investigation has not progressed sufficiently as

yet to speak with certainty as to whether we will finally adopt that or the former system.

**Vincennes & Washington Transit Company, Monroe City, Ind.**—J. J. Burns writes that construction work has already been started on this road. The plan is to construct a standard-gage railway system, 22 miles in length, which will connect Vincennes, Monroe City, Wheatland and Washington. The motive power is to be both steam and electricity. Capital stock, \$60,000. Officers: J. J. Burns, 705 Isabella Building, Chicago, Ill., president and purchasing agent; M. A. Peoples, Monroe City, vice-president and superintendent. Headquarters, 705 Isabella Building, Chicago, Ill. [E. R. J., June 13, '08.]

**Colfax, Ia.**—James P. Donahue, of Davenport, writes that a short electric street railway, about 6000 ft. long, will soon be built from the railroad depot in Colfax to the new hotel in course of erection. [S. R. J., May 30, '08.]

**Davenport & Manchester Interurban Railway, Davenport, Ia.**—It is reported that this company has completed the surveys for its proposed electric railway and that the people along the proposed route stand ready to aid in the construction of the line. There is also assurance if \$200,000 can be raised along the line, outside financial aid can be then secured sufficient to insure the success of the enterprise. At a recent meeting of the directors of this company the following officers were elected for the ensuing year: George T. Baker, president; A. J. Voorhes, vice-president; T. W. Halligan, treasurer; F. W. Rank, Moline, Ill., secretary.

**Wichita (Kan.) Railroad & Light Company.**—It is stated that this company will soon begin work on a double-track extension from Wichita proper to Associated Park. It is said that a contract for 50 tons of 60-lb. rails has already been let. A double track will also be constructed on the North Topeka Avenue line. H. E. Chubbuck, superintendent.

**Louisville (Ky.) Railway.**—This company is said to have completed its Fern Creek line, 12½ miles long, and will put it in operation immediately. W. H. McClure, purchasing agent.

**Kentucky River & Ohio River Interurban Railroad, Paducah, Ky.**—It is reported that this company has awarded the contract for the grading of its line to Simms Bros., of Thebes, Ill. The bridges, 18 in number, will be built by Forbush & Stotler, of Benton, Ill. It is said that the General Electric Company will furnish the car equipment. This road will be 38 miles in length and will extend from Paducah to East Cairo, where passengers will be transported into Cairo by ferry. J. J. Freundlich, Paducah, general manager. [S. R. J., May 16, '08.]

**Lake Charles Ice, Light & Water Works Company, Lake Charles, La.**—This company is said to be interested in a plan to build an electric railway extension to the property of the Hi-Mount Land Company. J. A. Landry, manager.

**Youghiogeny Light & Power Company, Oakland, Md.**—H. J. Tasker writes that it is the intention of this company to soon begin construction work on its proposed standard-gage electric railway. The road will be about 12 miles in length and it will reach Swallow Falls, Oakland, Mt. Lake Park and Deer Park. The overhead trolley system will be used. The company proposes to operate amusement parks along the line. Capital stock, \$200,000. Officers: A. G. Sturgiss, president; Truman West, vice-president; Bowie Johnson, secretary; James D. Hamill, treasurer; H. P. Tasker, Oakland, general manager. J. B. Hogg, Connellsville, Pa., chief engineer. [E. R. J., June 6, '08.]

**Boston (Mass.) Elevated Railway.**—It is said that this company is inquiring for 500 tons of steel rails.

**Chicago, Benton Harbor & Grand Rapids Electric Railway, Benton Harbor, Mich.**—Charles A. Applegate, of Chicago, is said to have obtained the contract for building this road. The line will start in Saugatuck, where connections will be made with the Holland & Grand Rapids interurban, which will go along the lake shore to South Haven, thence to Paw Paw Lake and Benton Harbor. Present plans include the extension of the line from Benton Harbor to Michigan City, making a through Benton Harbor-Chicago line.

**Mankato (Minn.) Electric Traction Company.**—It is said that this company is considering a plan to build an electric street railway through Kasota. H. E. Hance, superintendent.

**Meridian (Miss.) Light & Railway Company.**—It is announced that this company will rebuild its entire line on Twenty-fourth Avenue. A. B. Patterson, general manager.

**Excelsior Springs & Suburban Railway, Excelsior Springs, Mo.**—Henry J. Arnold, of Denver, Colo., writes that this company is building a standard-gage electric railway from the Chicago, Milwaukee & St. Paul Railroad depot near Excelsior Springs to a point in the central portion of Excelsior Springs, a distance of about 2½ miles. Mr. Arnold states that it is proposed to adopt the overhead trolley system, current to be generated at Excelsior Springs, where the company expects to build its power station. The repair shop will also be built in this city. Three cars will be placed into service upon the completion of the road. Capital, authorized and issued, \$50,000. General office, Excelsior Springs. Officers: W. A. Bell, London, Eng., president; W. A. J. Bell, Excelsior Springs, Mo., vice-president and purchasing agent; J. E. Lundstrom, Colorado Springs, Colo., secretary and treasurer; W. P. Southard, Excelsior Springs, Mo., superintendent and electrical engineer. [E. R. J., June 6, '08.]

**Joplin & Monett Interurban Railway, Joplin, Mo.**—At a meeting of the Commercial Club and well-known business men of Joplin, with William S. Brawner, of Joplin City, president of this company, and E. T. Scott, of John Scott & Sons, of St. Louis, contractors for the road, a committee was appointed to investigate the project and call a mass meeting of citizens to consider taking \$80,000 worth of bonds in Joplin. Neosho already has subscribed \$40,000 to bonds for the construction of the road between Neosho and Joplin. The proposed road passes through Joplin and Neosho, Spring City and Spurgeon. [S. R. J., Oct. 19, '07.]

**Mexico, Santa Fe & Perry Electric Railway, Mexico, Mo.**—It is reported that work on this line has been suspended on account of a lack of funds with which to continue the grading. S. L. Robinson, president of the road, gave out a statement in which he says that the delay will be only temporary. The company recently issued bonds in the amount of \$860,000 with the Carnegie Trust Company as trustee.

**Stillwater Power & Railway Company, Billings, Mont.**—Preliminary surveys are now under way for the interurban line which this company proposes to construct from Columbus to Cooke City, following the Stillwater River. It is stated that construction work will be started this year. Power will be developed from two falls on the Stillwater. Willard Bennett, Helena, Mont., president. [S. R. J., May 9, '08.]

**\*Reno, Nev.**—It is stated that E. J. Baldwin is interested in a plan to build an electric railroad to carry passengers from the terminal of the Lake Tahoe Railroad & Transportation Company's line to Lake Tahoe.

**Bridgeton & Millville Traction Company, Bridgeton, N. J.**—This company is said to be considering the project of running a spur from its line near Cedarville to Fortescue, the Delaware Bay summer resort. B. F. Hires, manager.

**North Jersey Rapid Transit Company, Paterson, N. J.**—Malcolm R. McAdoo, president, states that this company is about to build an electric railway from Paterson to Suffern. The line will extend from Paterson north through Glen Rock, Ridgewood, Hohokus, Allendale, Ramsey and Mahwah to Suffern. The length of the road will be about 15 miles, and it will be built principally on private right of way. The road will be constructed by the North Jersey Construction Company, which has already been organized for that purpose.

**Lima-Honeoye Electric Light & Railroad Company, Lima, N. Y.**—It is officially announced that this company is now working on surveys for an extension north to Rochester and south to Atlanta and Wayland, Steuben County, N. Y., 69 miles. C. A. Watkins, chief engineer.

**Rochester, Charlotte & Manitou Railroad, Rochester, N. Y.**—This company is reported to have begun work on the rehabilitation of its system. W. Butler Crittenden, receiver.

**Schnectady (N. Y.) Railway.**—This company is said to have plans under consideration for the double tracking of Broadway from Campbell Avenue to the city line.

**Syracuse (N. Y.) Rapid Transit Railway Company.**—It is stated that this company plans to build a double-track line from East Genesee Street through Almond, Van Buren, Henry and Croton Streets with a loop on Syracuse University property.

**\*Wahpeton, N. D.**—F. R. Barnes, secretary of the Commercial Club, would like to communicate with parties in regard to a proposition to build an electric railway in Wahpeton, extending 50 miles from Wahpeton to Sisseton. Mr. Barnes states that there is available water power for generating purposes and the community is well settled and prosperous, almost entirely agricultural.

**Springfield & Washington Railway, South Charleston, Ohio.**—G. W. Baker reports that this company expects to begin construction work on its extension from South Charleston to Washington C. H. by July 1. This company is the successor to the Washington Traction Company. G. W. Baker, Washington C. H., Ohio, president and general manager.

**\*Mount McKay & Kakabeka Falls Railway, Fort William, Ont.**—It is announced that the surveyed route for this projected railway will follow the main road from Fort William to Kakabeka Falls, Ont., about 15 miles. The track will be laid with 80-lb. steel. Power will be purchased from the Kaministikwia Power Company at 2200 volts, three-phase, 60-cycle, and transformed by motor-generator sets in the substation to 600 volts direct current. G. R. Duncan, engineer.

**Ontario West Shore Electric Railway, Goderich, Ont.**—It is stated that this company intends to build the section from Goderich to Kincardine immediately. A contract has been let to the Huron Construction Company, which will sublet the work. It is expected to have the Goderich-Kincardine section built by next spring. The persons who control this line's charter are also interested in the Maitland River Power Company, which proposes to build a power plant at Black Hole, about 3 miles from Goderich, and which will supply power for the electric railway. [S. R. J., May 9, '08.]

**North Midland Railway, London, Ont.**—It is expected that contracts will be signed for the construction of the first section of this line, from London to St. Mary's, very shortly, and that construction will be gone on with during the summer. A. E. Welch, manager. [S. R. J., May 23, '08.]

**\*Morrisburg (Ont.) Electric Railway.**—I. Hilliard, of Morrisburg, is reported to be interested in this company, which plans the construction of an electric railway from Morrisburg, through Williamsburg, Winchester, Chesterville and Morewood to Russell, with a branch line to Winchester village. Application will be made to the Ontario Legislature for a charter. [S. R. J., May 28, '08.]

**Port Arthur, Ont.**—A plan for an extension of the Port Arthur Electric Street Railway system by a series of loops centering at one point, and which would serve the whole city at an estimated cost of \$40,000, is to be submitted shortly for a vote of the ratepayers.

**Sarnia (Ont.) Street Railway.**—This company expects to have the extension of its line from Wellington Street to River Road, Sarnia, Ont., 1.25 miles, completed by July 1. The electrical equipment is being supplied by the Canadian Westinghouse Company.

**Toronto & York Radial Railway, Toronto, Ont.**—This company has a large number of men employed in putting in new ties and in ballasting the line between Newmarket and Jackson's Point, Ont. It is also proposed to construct an extension from Jackson's Point to Sutton, about 1.5 miles.

**Toronto (Ont.) Railway.**—This company has notified the Council that it is desirous of laying certain additional lines on city streets, and asks for approval of the same. The company is also applying to the Ontario Railway and Municipal Board for approval of the extensions.

**Toronto, Ont.**—Officers of the Toronto Railway Company and of the International Railway, of Buffalo, met recently to consider the building of a new bridge across the Niagara Falls, ½ mile above the cantilever bridge. The structure will be the connecting link in a proposed Buffalo-Toronto electric railway, and a franchise has been asked of the Dominion Government. Among those interested in the project who were present at the meeting were Henry J. Pierce, president of the International Railway Company; Porter Norton, Robert L. Fryer, all of Buffalo; Frank A. Dudley, of Niagara Falls, and Frederick S. Nichols, of Toronto, who represented Canadian interests.

**Astoria, Seaside & Tillamook Railway, Astoria, Ore.**—F. R. Evans, president, writes that this company is surveying its line and will begin work as soon as these are completed. The company will build a standard-gage electric railway from Astoria through Warrenton, Hammond, Fort Stevens, Gerhart, Seaside to Tillamook, a distance of about 65 miles. The motive power will be electricity, current being generated at Seaside. The company also contemplates furnishing power to towns along the route. Capital stock, \$200,000. Officers: F. L. Evans, Astoria, president and general manager. W. E. Buffum, vice-president; H. G. Van Dusen, secretary; E. Z. Ferguson, treasurer; Heggart & Brown, Portland, electrical engineers; L. C. Rogers,

Moody, Cal., chief engineer. Headquarters, Box 492, Astoria. [E. R. J., June 6, '08.]

**Oregon Electric Railway, Portland, Ore.**—This company has allotted \$300,000 for improvements to its Portland-Salem line.

**Portland (Ore.) Railway, Light & Power Company**—The directors of this company have recently authorized an expenditure of \$1,999,500 for improvements. The amount of \$417,500 will be spent on extensions and betterments to its railway system.

**Valley Railway, Portland, Ore.**—We are officially advised that this company has already started construction on its line, which is to reach St. Paul, Woodbine, Scotts Mills and Silverton, Ore., a distance of 25 miles. This road is really a branch line of the Oregon Electric Railway system. It will be built by parties outside of the Oregon Electric Railway Company, but later it is expected that it will be taken over by them or at least operated in connection with their system. Capital stock, \$100,000. Frank Robertson, Portland, president; Wm. S. Turner, vice-president. W. S. Barstow & Company, Portland, Ore., engineers. [S. R. J., May 2, '08.]

**Schuylkill Railway, Girardville, Pa.**—George Gerber, president of this company, is reported to have announced that an electric railway is to be built at once over the summit of the Broad Mountain, 8 miles long, which will connect Pottsville with Ashland, Mahanoy City, Shenandoah, Mt. Carmel and Shamokin. It is said that the cost will be \$3,000,000.

**Johnstown Passenger Railway, Johnstown, Pa.**—It has been officially announced that work will start within a few weeks upon the extensive line improvements planned by this company. The Morrellville extension is to be constructed along the lines originally laid out; tracks are to be renewed along the Valley Pike in the Eighth Ward, and minor improvements made on the Dale line. S. E. Young, manager.

**Schuylkill Valley Traction Company, Norristown, Pa.**—This company has started the work of double-tracking Main Street from Stanbridge to Markley. George Hoeger, general manager.

**Montgomery & Chester Electric Railway, Phoenixville, Pa.**—It is announced that this company will extend its system to the borough line on South Main Street. E. N. Corbin, superintendent.

**Hull (Que.) Electric Railway.**—This company has commenced the work of laying double tracks through Hull. W. R. Taylor, manager.

**Montreal & Southern Counties Railway, Montreal, Que.**—It is reported that work will be resumed at once upon the construction of the St. Lambert section of this projected railway at Montreal South and at Longueuil, Que. A contract has been let to the Dominion Bridge Company for the steel work on Black's bridge and to a United States firm for the marine cables across the Lachine Canal. [S. R. J., Apr. 25, '08.]

**Spartanburg Railway, Gas & Electric Company, Spartanburg, S. C.**—It is announced that this company is planning to extend its system from the city to the fair grounds by the time the next county fair is held. Preliminary surveys are now being made and it is expected that work will commence during the summer. F. D. McEowen, general manager.

**Aberdeen, Huron & Southern Railway, Huron, S. D.**—John A. Cleaver is authority for the statement that construction work on this electric railway will probably be started within 60 days. It is to be a standard-gage line, 106 miles in length, and will connect Aberdeen and Huron. Lake Byron will also be reached. The repair shops will be located at Huron. Capital stock, \$2,500,000, of which \$520,000 has been issued. Bonds authorized, \$2,500,000. Officers: John A. Cleaver, Huron, president; R. W. Clarke, Huron, vice-president; O. A. Ricker, Huron, secretary; Frank O. Morris, treasurer. [S. R. J., May 16, '08.]

**Nashville (Tenn.) Interurban Railway.**—H. H. Mayberry, of Nashville, Tenn., president of this company, is reported as saying that the line from Nashville to Franklin, Tenn., will be put in operation about September 30. Three bridges of steel and concrete will be erected, one at Franklin, another at Spencer's Creek and another across the Little Harpeth River. The abutments will be of stone and concrete and the spans of steel girders. Contracts for these have been awarded. The smaller bridges will be made of wood and steel. The contract for the steel rails is to be let soon, as will the contracts for the cars and for the erection of substations. The tie contract is awarded, and

some deliveries have been made under it. E. A. Proctor, chief engineer, has prepared plans for the electric equipment, and it will also soon be let to contract. After the line to Franklin has been constructed the company proposes to build on to Mount Pleasant and Columbia, Tenn.

**\*Newcomb, Tenn.**—Peter Zechini, of Newcomb, is reported to be interested in a plan to build an electric railway from Newcomb to Jellico, Tenn.

**Texas Traction Company, Dallas, Tex.**—This company on June 16 completed its electric railway which runs between Sherman and Dallas, a distance of about 67 miles.

**Houston (Tex.) Electric Company.**—It is said that this company contemplates beginning work on its Harrisburg extension July 1. The company is said to have plans under way for the rebuilding of its Washington track. Improvements on the lines on Franklin Avenue, Preston Avenue and on the Harrisburg road will also be made. David Daly, general manager.

**Lynchburg Traction & Light Company, Lynchburg, Va.**—This company recently began construction on its Camp Davis extension, and it is expected that the work will be completed before autumn. D. Apperson, general manager.

**Seattle (Wash.) Electric Company.**—According to reports from Seattle this company has commenced work on the plans for additional trackage and equipment for the handling of the crowds that will visit Seattle during the Alaska-Yukon-Pacific exposition in 1909. E. E. Potter, manager.

**Grafton (W. Va.) Traction Company.**—It is officially announced that this company contemplates building an extension. George L. Hartley, superintendent.

**Wheeling (W. Va.) Traction Company.**—It is announced that this company contemplates extending its line to Moundsville this summer. H. O. Nagle, superintendent.

## POWER HOUSES AND SUBSTATIONS

**British Columbia Electric Railway, Vancouver, B. C.**—This company placed orders for the following apparatus: One 2000-kw rotary converter for its Vancouver substation, one storage battery, 275 cells, capacity 6000 amp for two hours, for its Victoria plant; three 500-kw step-down transformers together with extension to switchboards in Vancouver, New Westminster, Burnaby and Lulu Island substations. R. H. Sperling, general manager.

**United Railroads of San Francisco.**—This company is said to have plans under consideration for the purchase of additional power from the Great Western Power Company to operate its cars. The company expects to rent between 20,000 kw and 30,000 kw. Charles N. Black, general manager.

**Athens (Ga.) Electric Railway Company.**—This company expects to soon install a second 1000-kw steam turbo-generator unit which was recently ordered as an addition to its present equipment.

**Connecticut Valley Street Railway, Turner Falls, Mass.**—This company has recently added to its equipment at the power station a 400-hp Bullock rotary converter.

**Portland (Ore.) Railway, Light & Power Company.**—This company is said to have authorized an expenditure of \$120,000 toward changes and betterments to its power plants, new electric facilities at Salem and improvements to the city's lighting system.

**Utah Light & Railway Company, Salt Lake City, Utah.**—This company will soon install a new 1500-kw Allis-Chalmers synchronous motor generator set with suitable switchboard and controlling apparatus. The new unit is to be supplied with 60-cycle, three-phase, 4000-volt alternating current and will consist of a revolving field synchronous motor direct coupled to a compound-wound, direct-current, railway-type generator, the two being mounted on a common base.

## SHOPS AND BUILDINGS

**British Columbia Electric Railway, Vancouver, B. C.**—This company is building an extension to its car shops so that the capacity will be doubled, viz., from 25 to 50 cars per year. All the car houses are being equipped with automatic sprinklers. R. H. Sperling, general manager.

**Los Angeles & Redondo Railway, Los Angeles, Cal.**—This company is building a frame depot for freight and passengers at Athens, on its Moneta Avenue line.

**Toronto & York Radial Railway, Toronto, Ont.**—This company is planning to erect a station and freight shed at Queensville, also a car house and repair shop at Deer Park.

# Manufactures & Supplies

## ROLLING STOCK

**Sterling, Dixon & Eastern Electric Railway, Dixon, Ill.**, is in the market for four closed cars.

**Des Moines City Railway, Des Moines, Ia.**, contemplates changing some of its regular cars to pay-as-you-enter cars.

**Oregon Electric Railway, Portland, Ore.**—This company has appropriated the sum of \$300,000 for improvements, part of which is to be expended for new rolling stock.

**Guadalajara (Mex.) Tramways, Guadalajara, Mex.**, is asking prices on about 40 electric cars. This order will be placed through Carr Brothers, 100 Broadway, New York.

**British Columbia Electric Railway, Vancouver, B. C.**—This company has added 15 new cars to its system this year and it is understood that this number will be doubled by the end of the year. Air brakes have been ordered for all double-truck city cars, all of which will be equipped in about three months. James Milne, general superintendent.

**St. Louis, Montesano & Southern Railway, St. Louis,** has placed a contract with the Southern Railway Supply Company, of St. Louis, for four motor and four trail cars and two baggage cars, representing an investment of \$100,000. The cars will be built by the St. Louis Car Company and are to be delivered in 10 weeks. Each of the motor and trail cars will measure 45 ft. 6½ in. over the end sills, 56 ft. 10½ in. over the crown pieces, 9 ft. 3¾ in. width over sheathing, 9 ft. 6 in. in extreme width and 10 ft. from underside sill to top of roof. The vestibules of the cars will be arranged for train operation. The inside finish will be mahogany decorated with inlay lines. The ceilings will be semi-empire and decorated. Anderson-Smith arc headlights and interior arc lamps will be used. Westinghouse brakes and motors and St. Louis Car Company 62-A-M. C. B. trucks will be included in the equipment. The two 45-ft. baggage cars will be equipped with the same trucks and electrical equipment as the passenger cars.

## TRADE NOTES

**E. J. Condon, Dixon, Ill.**, has developed a new block-signal system specially designed for single-track roads. It provides automatic air-brake trips and has just been put through a satisfactory test on the Sterling, Dixon & Eastern Railway. It is stated that the signal system may be installed at a cost of \$85 per semaphore.

**Buffalo Foundry & Machine Company, Buffalo, N. Y.**, which makes large castings and builds vacuum drying and impregnating machinery, vacuum drum, shelf and rotary dryers, compressors, pumps, condensers and the Bell steam hammer, has recently established a New York office at 143 Liberty Street, with H. E. Jacoby as engineer and manager.

**Thomas Brace Rail Company, New York,** was incorporated at Albany, June 11, with a capital of \$2,000,000, to manufacture railroad rails and appliances, motors, cars, car wheels, structural iron or steel or metal castings. The directors are: Eddy T. Thomas and John Ochler, of New York, and W. A. Campbell, T. H. Ross and C. B. Sebellenberg, of Brooklyn.

**J. G. Brill Company, Philadelphia, Pa.**, is distributing a reproduction in colors mounted on metal of a painting of one of its pay-as-you-enter cars supplied to the Chicago City Railway. Chicago was the first American city in which pay-as-you-enter cars were operated and for this reason the picture is of especial interest, as the extension of the use of the pay-as-you-enter cars was largely contingent upon their successful operation in Chicago. Three hundred cars of the type shown in the picture mounted on Brill No. 27-F2 trucks were furnished to the Chicago City Railway by the J. G. Brill Company.

**Cleve-Mor Engineering & Construction Company, Cleveland, Ohio,** has been organized to examine proposed steam and electric roads, water works, power plants and other industrials of similar character and supervise the construction of work of this kind. The company has connections with a firm of attorneys in New York City and two firms of attorneys in Cleveland and is also understood to have connections with foreign capitalists. At present the company is engaged in preliminary work on several projects in the Central West. The company is capitalized at \$30,000 and the officers are: F. B. Morgan, president; C. M. Pierce, vice-president; L. F. Brown, secretary, and H. L. Morgan, treasurer. Offices have been opened in the Citizens' Building, Cleveland.

**Allis-Chalmers Company, Milwaukee, Wis.**, reports the following recent contracts: City of Lawrenceburg, Tenn.,

a 250-kw Allis-Chalmers water-wheel type alternator and exciter, together with a complete A.B. arc-lighting outfit; the Washburn Crosby Company, Minneapolis, which had installed a 1500-kw Allis-Chalmers steam turbine unit, a 200-kw Allis-Chalmers induction motor; the Natural Food Company, Buffalo, a 150-brake hp induction motor; the Pratt Light & Ice Company, Pratt, Kan., a 100-kw and a 50-kw generator with exciters and a 50-hp motor; the New Jersey Consolidated Water & Light Company, Elberon, N. J., a 175-kw belted alternator; the Standard Hosiery Company, Philadelphia, 28 Allis-Chalmers induction motors ranging from 2 to 50 hp; the Great Western Portland Cement Company, a new 800-kw generator for installation at Mildred, Kan.

**Lintern Car Signal Company, Cleveland, Ohio,** announces that the sales agency of the company which has been held by the Ohio Brass Company, of Mansfield, Ohio, has been discontinued, and that hereafter inquiries regarding the Lintern system will receive attention from the Lintern Car Signal Company at Cleveland. The Lintern system, by means of simple wiring and auxiliary dry cells, supplies current for one or more rear-end signal lights, or one or more classification lights, or both, and is said to overcome effectually the objection to using current from the trolley circuit for car signals. The Lintern Company suggests that when its system is specified for installation by the car builders on new cars, the railway company submit a complete plan of the wiring of the lighting circuits of the cars, with full data as to the number of marker and of classification lights to be used. It is also suggested that this be done where it is proposed to install the system on cars in service.

**Climax Hoist Company, Philadelphia, Pa.**, is placing on the market a new patented spur gear chain block designed by Mr. Burr, engineer of the company. In the new hoist the load is carried on hardened and ground steel rollers. All gears are enclosed in a dustproof case and run in oil. The retaining brake is of the company's own design. It is noiseless in operation and positive in action. The chains are of high-grade iron. All parts are jig made to standard sizes and are interchangeable. The load chain runs in a sprocket keyed to a long hub supported in a housing cast in one piece with an internal load gear. This gear is driven by a one-piece spur pinion carried on a stud with an internal gear driven in turn by a spur pinion carried on the hand-chain wheel shaft. The hand-chain wheel shaft in turn is passed through the hub of the load gear to the opposite end of the block where the hand-chain wheel is located. Hoisting is accomplished by pulling on the right-hand side of the hand chain and lowering by pulling on the left-hand side of the hand chain, which releases the friction brake.

**Westinghouse Electric & Manufacturing Company's** readjustment committee has extended to June 22 the time allowed stockholders of the company to subscribe to their portion of the assenting stock. George Westinghouse has issued, under date of June 10, an urgent appeal to shareholders, calling attention to the necessity of prompt action on their part. Mr. Westinghouse encloses a copy of an opinion from the counsel of the company showing what would happen if the merchandise creditors' plan is not accepted. Mr. Westinghouse says: "About one-half of the shareholders have made their subscriptions, while the merchandise creditors have practically rounded out their obligations to take \$4,000,000 of assenting stock in exchange for merchandise debt. In again asking you to respond promptly to the circular of the stockholders' committee, I do so because I know of the substantial character of your enterprise, the strong position in which it will be put by carrying out the merchandise creditors' plan, and because I believe that the shares you now hold, as well as the shares newly subscribed for, will be fully worth their face value. The risks to all stockholders who are unwisely (perhaps unfairly) relying upon the efforts of those who subscribe are altogether out of proportion to any possible benefit of such a course, since no substantial risk is incurred in making the subscription to assenting shares, in view of the fact that the payments are conditioned upon the success of the plan of the merchandise creditors' committee." The counsel of the committee, Cravath, Henderson & de Gersdorff, state: "Experience has shown that winding up a large manufacturing corporation and the transfer of its business and assets to a new company are attended with much litigation and delay, except in the rare cases where there is a substantially complete unity of action on the part of creditors and stockholders. We believe it would take at least a year to consummate a reorganization of the affairs of your company by means of a forced sale of its assets and their transfer to a new corporation. How much longer the process would take, and the extent to which the business and the organization of the company would be demor-

alized would, of course, depend upon the extent and character of the litigation which would develop." Accompanying these circulars was a statement of the condition of the company on April 30, 1908, as compared with the report of Oct. 23, 1907. It shows that if the stockholders subscribe to the \$6,000,000 assenting stock the company will have available cash assets, including accounts and notes receivable, of \$20,304,014. The current indebtedness of the company will also be reduced \$4,000,000 by the subscriptions of the merchandise creditors already assured.

#### ADVERTISING LITERATURE

**Railway Specialty & Supply Company, Chicago, Ill.**—The Paine vise-grip rail anchor is described in a bulletin issued by this company.

**Electric Storage Battery Company, Philadelphia, Pa.**—Under date of June 1, 1908, this company has issued Catalog C, in which the company's car-lighting cells are described.

**F. Bissell Company, Toledo, Ohio.**—This company is issuing a new souvenir advance card, one of the series showing experiences and incidents connected with the travels of the "Bissell Frog." The series of cards will be sent on request to all who may desire them.

**American Hoist & Derrick Company, St. Paul, Minn.**—An illustrated post card calls attention to the company's drop forged and galvanized Crosby clip. The Crosby clip is made exclusively by the American Hoist & Derrick Company and is for sale by wire rope manufacturers, jobbers and dealers.

**Western Electric Company, Chicago, Ill.**—This company has recently issued a wall circular describing the various types of Sunbeam lamps distributed by the company which will undoubtedly be found useful by dealers, contractors and central stations, as it is more convenient for reference purposes than a catalog. A copy will be sent on request by the company from Chicago or any of the branch houses.

**R. W. Marshall & Company, New York, N. Y.**—The monthly quotation sheet of this company on armature coils, etc., has been issued. A circular on the "F-M" oil cup, a folder on the company's copper trolley wheels, specifications for full elliptic and coil springs and an article entitled "Coil Insulation by the Vacuum Drying and Impregnating Process," republished from the *STREET RAILWAY JOURNAL* of April 4, 1908. In this article the Marshall method of coil rejuvenation is described.

**Electro-Dynamic Company, Bayonne, N. J.**—This company has issued Circulars Nos. 32 and 33, devoted to motor drive and the inter-pole variable speed motor, respectively. "Motor Drive" discusses the advantages of the elimination of line shafting, safety and cleanliness and the improved and cheapened product. In "The Inter-Pole Variable Speed Motor" the general functions of the inter-pole are discussed and the method of speed control is explained. A wiring diagram shows the electrical connections between the armature, field and the inter-poles.

**General Railway Supply Company, Chicago, Ill.**—This company, in a catalog entitled "Railway Specialties," illustrates and describes a number of new specialties, some of which are adapted for use by electric railways. Metallic (steel) sheathing, the National steel trap door and lifting device, the Schroyer friction curtain roller, the Garland ventilator and Flexolith composition flooring are among the articles described. The National trap door and lifting device and Flexolith composition flooring especially are called to the attention of interurban electric railway managers. The flooring is in flexible form and can be laid over old or new wood floors. Heavy wire cloth is stapled to the wood floor and embedded in the composition, securely anchoring the latter. The floor can be kept clean by flushing it.

**Buckeye Engine Company, Salem, Ohio.**—This company's four-stroke cycle gas engine is described in a new 50-page pamphlet. It is explained that the study of the internal combustion engine was begun by the company in 1897, when its first gas engine, one of 125 brake hp, was constructed. The experimental work with the gas engine has been continued since then, but the increase in the company's steam engine business was so great that it was precluded from entering the gas engine field. New works have been completed and the company is now prepared to supply both two and four-cycle engines. The publication discusses the fundamental principles of the gas engine, mixing and distribution, the ignition system and regulation, and goes into the details of construction of the pistons, piston rods, governor, exhaust valves, lay shaft, etc. A very interesting comparison is made of the thermal economy of gas and

steam engines. The publication contains a review of the available fuels for the production of power.

**General Electric Company, Schenectady, N. Y.**—Bulletin No. 4594, recently issued by the company, describes and illustrates two types of the company's new tungsten economy diffuser, designated respectively as the store type and mill type. They consist of a broad reflector or diffuser surrounding a frosted globe containing the lamps. They are made for five or six lamps and can be adjusted for tungsten, tantalum or carbon filament incandescent lamps in all the usual sizes. A special snap switch has been developed which allows different combinations of the lamps to be made. The special advantages claimed for the diffuser are a wide range of capacity by using different sizes of lamps or by different combinations; a relatively low intrinsic brilliancy with excellent diffusion, and an economical distribution of light in which the maximum intensity is emitted at oblique angles in the lowest hemisphere so as to illuminate the intermediate spaces but allowing a small amount of light to be sent above the horizontal and avoid darkness in the upper part of the room. The bulletin contains photometric curves showing the light distribution under different combinations, connections and data as to the different styles manufactured.

**Vulcan Steam Shovel Company, Toledo, Ohio.**—*Steam Shovel News* for June contains a very interesting account of the work done by Vulcan shovels in the construction of the Hanover & York Street Railway, a part of the system of the York (Pa.) Railways. A total of 159,000 yd. distributed between 40 different cuts or an average of 4000 yd. per cut had to be removed. Some of the cuts were designated as scraper work. The maximum depth on the other cuts was 16 ft. A 35-ton Vulcan Little Giant traction shovel was purchased, together with a 9 x 14 Vulcan locomotive and seven 4-yd. Western dump cars. Between May 28 and Dec. 12, 124 working days of 10 hours each, this equipment moved 62,291 cu. yd., an average of 502 cu. yd. per working day. The shovel was moved between cuts for an average cost of \$0.86 per foot of ground covered, the prices ranging from \$0.59 per foot on a long, level transfer to \$5.48 on a short move with extremely steep grades between the two cuts. The total distance moved between cuts was 28,100 ft. and the total cost of moving prorated against the total yardage gave a moving charge of \$0.37 per yard. To hurry the work a Giant Class F steam shovel was purchased in June, 1907, with a 10-in. x 16-in. Davenport locomotive and seven 4-yd. dump cars. This equipment moved 37,653 yd. in 90 working days, an average of 410 cu. yd. per working day. This shovel was moved 16,200 ft. for an average cost of \$1.16 per foot, or \$0.48 per yard of excavation. A chart was employed to show at a glance the unit cost of shovel work for any day.

**Electric Service Supplies Company, Chicago, Ill.**—The cover of the *Keystone Traveller* for June is printed in green, blue and white. Pictures by John T. McCutcheon and a story from the *Chicago Record-Herald* serve to introduce more serious subjects, among them the Nuttall gears, steel gear cases, steel poles, the automotoneer and the grounding of lightning arresters. Under the last of these valuable advice is given. The *Traveller* says regarding lightning arresters: "After studying this subject many years we have seen the mistakes some people make. Here are some of them: The use of copper ground plate and wire. Copper oxidizes and wastes away comparatively quickly, and the resulting oxide is a very poor conductor. On the other hand, iron oxidizes very slowly, and its oxide is a good conductor. Another feature of iron is its lower cost. Many electric railways do not ground to the rail as well as to a ground plate on pipe. The static difference of potential exists sometimes between the rail and the earth, particularly on stone-ballasted roads. Another reason for connecting ground wire with rail is that it generally forms the best possible ground connection, due to the large area over which the lightning may be dissipated. Then again, if the ground wire is connected with the rail, there is no chance of an insufficient flow of normal current through the arrester to operate it properly. In connecting with the rail, a stub end flexible bond should be compressed into the rail and a rubber-covered wire run to the ground pipe at the foot of the pole. On one of the most perfectly bonded railways in this country, it was found that the bare wire between rail and pole had practically disappeared. The soil was an excellent conductor when wet, and the current had left the rails and gone to the earth through the cross wire, the electrolytic action destroying the wire. Channel pins and solid wire are not suited to grounding to the rail, as frequently the wire becomes frozen solid in the earth and the constant jar of passing cars breaks the connection. A flexible bond should always be used."

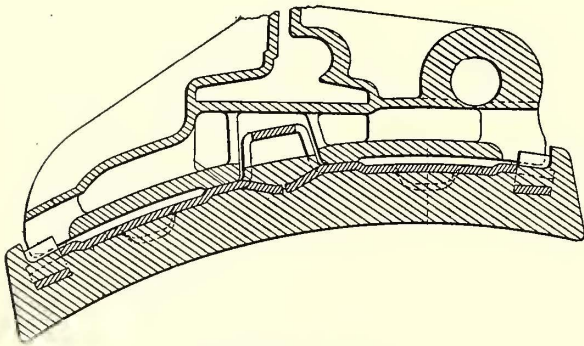
## ELECTRIC RAILWAY PATENTS

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

UNITED STATES PATENTS ISSUED JUNE 2, 1908.

**Railway Frog**, 889,199; Stephen Canty, New Albany, Ind. App. filed Jan. 21, 1908. A separable frame having a point detachably mounted within and extending above the frame, and means for securing the parts of the frame and the point together.

**Railway Signal System**, 889,205; Emory P. Cook, Oberlin, Pa. App. filed Aug. 30, 1907. Has sectionally energized track rails and means by which circuits are completed to



Patent No. 889,510

alarm devices on the trains through different trucks of the engine. Includes means for actuating the switch point.

**Device Operated by Controller Reverse-lever for Automatically Operating Safety Appliances**, 889,219; Alfred J. Gairing, Cleveland, Ohio. App. filed Aug. 13, 1906. Provides means operatively connected with the reverse lever of the controller which will effect the opening of the sand-box valve and conjointly the releasing of the fender, simultaneously with the movement of reversing lever of the controller.

**Trolley Pole**, 889,220; John C. Gay, Jordanville, N. Y. App. filed Oct. 21, 1907. The pole consists of parallel rods movable laterally so that the wheel is capable of yielding laterally without deflection from a vertical plane.

**Trolley Catcher and Retriever**, 889,264; Robert Shields, South Boston, Mass. App. filed April 22, 1907. A controller for trolley cords of the type having a normally tensioned spring drum which is held against action by a detent. The abrupt movement of the pole trips the detent and causes a re-winding spring to act.

**Third-rail Attachment for Electric Cars**, 889,266; George H. Sohn, Lincoln, Cal. App. filed Oct. 30, 1907. A street railway conduit having a trolley wire supported therein by spaced saddles which are in turn fastened to special spool-shaped insulators bolted between guiding rails of the conduit slot.

**Electric Railway**, 889,277; Casimir von Gizinsky and William McClure, Schenectady, N. Y. App. filed Dec. 19, 1906. A sectional third-rail normally supported above current carrying contacts and means for depressing the third-rail sections to engage the contacts.

**Insulated Rail-joint**, 889,288; Benjamin Wolhaupter, New York, N. Y. App. filed Jan. 19, 1907. Consists in associating with fish plates of the reinforced angle bar type, a rail supporting base plate made in two sections whereby each base plate section receives one rail end, while at the same time each section of the supporting base affords the rail end thereon a support on both sides of the meeting point of the rail ends.

**Third-rail Electric Railway System**, 889,448; John F. Feeley, Bigtimber, Mont. App. filed July 16, 1907. A third-rail housing in the shape of a figure 2. The rail is secured under the overhanging hook-shaped portion. The top of the housing has a sheet metal coating to prevent wear.

**Rail-joint**, 889,454; Horatio G. Gillmor, Bath, Me. App. filed Nov. 2, 1906. A rail chair formed with a base and an upright having ribs or serrations adapted to engage with similar grooves or serrations of a side bar.

**Metallic Tie**, 889,456; William Goldie, Wilkesburg, Pa. App. filed Nov. 12, 1906. The tie has a vertical web portion

and outwardly extending base flanges set at a slight downward incline and having a downwardly extending central girder portion bent therein.

**Trolley Wheel**, 889,463; Robert F. Henne, Mamaroneck, N. Y. App. filed Aug. 30, 1907. The harp is very broad, thereby necessitating a long axle on which the trolley wheel is mounted between spring plungers so as to permit lateral movement of the wheel.

**Signaling System for Railways**, 889,460; Charles H. Lay, Jersey City, N. J. App. filed Feb. 27, 1908. An overlap system for block signals adapted to provide greater flexibility than the usual danger and caution overlap systems. Makes use of various short blocks and has four overlap sections.

**Amusement Apparatus**, 889,472; Albert Malsin, New York, N. Y. App. filed Sept. 17, 1907. A pleasure railway having a lower track and a higher track and a wheel of the Ferris type adapted to engage and transfer cars from the lower to the higher trackway.

**Electric Signaling System**, 889,482; Francis L. O'Bryan, South Framingham, Mass. App. filed Jan. 8, 1908. A motor actuated signal and a track relay for closing the motor circuit. An electromagnet in the motor circuit has an armature adapted to break such circuit at the track relay after the signal has been actuated.

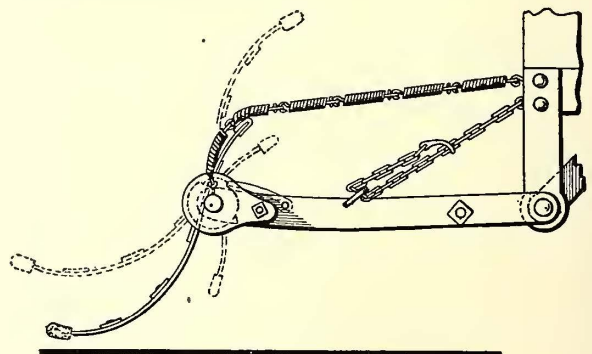
**Car-fender**, 889,504; August J. Berg, Chicago, Ill. App. filed June 22, 1907. Consists of a horizontal portion having two rearwardly extending arms bent upward and pivotally secured to the car and an apron having sliding and supporting engagements with the horizontal portion.

**Railway Car Brake-shoe**, 889,510; Seth A. Crone, New York, N. Y. App. filed March 17, 1908. A cast-metal body with a plate back, which has between its center and ends inwardly depressed edge portions over which the cast metal extends and the outer edges of which portions are integral with the plate.

**Protector for Third-rail**, 889,559; Joseph N. Tomlinson, Vineland, N. J. App. filed Dec. 19, 1906. An insulating cover over the top of the rail opens at one side to receive the collector shoe.

**Signal System for Railways**, 889,561; Louis H. Thullen, Edgewood, Pa. App. filed March 3, 1906. The track rails are included in and form part of the return path of the conductor to the generator for the power current. Provides inductive bonds between block sections.

**Rail-joint**, 889,645; William Taylor, Emoryville, W. Va. App. filed Dec. 18, 1905. Consists of a joining section having a tread and web corresponding in form to the same parts of the ends of the rails. Fish plates formed integral with said section extend longitudinally along the sides of the ends of both rails. The joining section is free of supporting means below the web.



Patent No. 889,862

**Trolley**, 889,715; Earl D. Peerstone, Chicago, Ill. App. filed Dec. 7, 1907. A frame with a pair of swiveled harps spring connected with separate trolley wheels to engage the wire.

**Trolley Wire Splicer**, 889,776; Harry G. Dyer, Gloucester City, N. J. App. filed Sept. 12, 1907. A sleeve with coned extremities and toothed ratchet bars which are spring impelled to grip the wire within the sleeve.

**Switch-throwing Device for Street Railway Cars**, 889,785; William A. Jones, Muncie, Ind. App. filed Jan. 24, 1908. A device for the platform of the car to be operated by foot and connected to a switch so as the car approaches the switch, the point may be shifted.

**Car Fender**, 889,862; Joseph M. Smith, Worcester, Mass. App. filed June 10, 1907. Details of construction.