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### Parks and Pleasure Resorts

This is the season in which practically all of the electric railway companies are making plans for the summer business. In these arrangements the question of the park business and the proper attractions to be presented at the pleasure resorts owned or reached by the company's lines constitutes one of the principal problems. This has led the publishers of this paper during February or March of each year to devote one or two issues largely to this subject. We believe that no excuse need be offered for discontinuing

for one week the usual quota of discussions on engineering and operating subjects printed in this journal, and for considering the park question. There is hardly an electric railway company in the country to which it is not an important question. Even the steam railroads are learning the relation between amusement parks and the transportation business. This is illustrated by an incident which happened recently in the case of the president of one of the most important steam railroad companies in the East. In looking over the vouchers for payments in the accounting offices of his company he discovered one which called for the expenditure of \$50 for four ring-tailed monkeys. He did not at first understand what use his company could make of the simians, but it was soon explained by the fact that they were destined for one of the parks which belonged to a trolley line recently taken over by his company.

Although this issue does not contain a discussion of the relative popularity at park resorts of monkeys with straight or ring tails, we believe that the park practice of the companies in Baltimore, Joliet and Minneapolis, the hints offered in the extended article on park resorts by Mr. Hulse, and the descriptions of some of the latest pastimes devised for parks will prove of interest. While many managers are ready to leave the actual details of park management to some one who has had training along amusement lines, very few are willing to jeopardize the future success of their pleasure resorts by leasing them or otherwise turning over their management to outside control. As has been repeatedly pointed out in these columns, a park property can be almost irreparably injured in reputation during a season or two if not conducted along proper lines, and in not a few cases electric railway companies which have turned over the management of their parks to others have been obliged to rescue them at considerable expense and conduct them directly, purely as a matter of self-protection.

An idea of the extent of the investment at present in street railway parks can be had from the descriptions of the elaborate and extensive buildings and grounds at the parks described elsewhere in this issue. During the days of the horse railways, few street railway companies which had parks boasted of anything more pretentious than a grove at the end of their line where family parties could spend the day. The patrons carried their meals in lunch baskets, and practically the only amusements provided were improvised swings with an occasional small merry-go-round. The change from these primitive methods has been brought about either through the introduction of the electric railway or through an increased desire and demand for luxuries of all kinds, or from both causes. The merry-go-round with its single line of wooden horses has given place to the three-row carrousel equipped with every kind of fantastic creature,

which will perform all sorts of rhythmic movements. The peanut stand has been replaced by the restaurant. Scenic railways, roller coasters, shoot the chutes, amusement palaces, skating rinks and shows of all kinds have been added; in fact, every new amusement feature which can be thought of is a drawing card and must be had. People have been educated up to this sort of thing, they expect it and are ready to pay for it.

The management of parks has as many sides as that of a transportation business, and the chances of losing money by mistakes are even greater. We believe, however, that as a whole the street railway companies of the country are well satisfied that an amusement resort judiciously located and properly conducted is a paying investment when taken in connection with the transportation, and can often be made self-supporting.

### Progress in Axle Manufacture

In view of the importance of securing such strength in car axles that breakages in service may be as infrequent as possible, a recent paper by Mr. Henrik von Z. Loss before the Franklin Institute on the manufacture of railway car axles is of considerable interest. In a general way axle specifications are now pretty well standardized, and there is not much doubt that operating companies can secure any reasonable steel composition which they are prepared to pay for. Any improvement in methods of manufacturing, however, is an indirect benefit to the consumer, for it tends to give him a better product for the same money, regardless of any positive decrease in selling price.

Mr. Loss pointed out that the ordinary methods of axle manufacture are more or less unfinished and crude, involving large wastes, both in material and labor. The hammering of the billet in open dies tends to compress the material of the axle imperfectly; the greatest hammering is not close to the wheel seat, where the maxima stress moments occur, so that the billet is hammered where it is less needed, at the middle and center; axles are generally not annealed, though they should be, and they should be straightened to avoid waste of material in rough turning; the usual method of hammering frequently causes a waste of 15 per cent, repairs to hammers are heavy, and the fuel consumption is excessive.

Recognition of these defects has led to the use of vertical forging presses, tending to decrease the repair and fuel cost, and to give a product better in texture, closer to dimensions and less wasteful of material. The use of additional mills for the production of round bars has not given the general satisfaction anticipated, and some improved forging process seems to promise the best results so far. The production of axles on a machine embodying the principle of upsetting a billet with hydraulic power has been successfully carried out, the forging process being conducted in a longitudinal direction. With the upsetting process the wheel fit and adjoining parts receive the greatest amount of forging; press repairs are nominal barring the wear of die-sleeves; the flow of metal at the center is just about as great as at the surface; the axle when made is true and smooth throughout, and there need not be as much allowance for turning the wheel fit and journal. The surface is true and smooth between wheel fits; no rough turning is necessary,

and the hard outer scale therefore remains intact—an advantage of no little value in relation to the strength of the axle. Allowing for the cooling of the dies, such a machine should be able to make 20 axles per hour, and from 60 to 90 lbs. of scrap are saved on each axle. The blank or billet need not be round, but can be octagonal if desired.

### Preventing Rolling Stock Failures

The efforts of the modern physician are, or should be, quite as much to prevent the occurrence of disease as to cure the patient after he becomes sick. In the same way the work of maintenance on a street railway system should include, in its broadest aspects, the prevention of rolling stock failures no less than the repair of broken-down equipment. Repairs cost more after the cars are hauled into the shop in a crippled state than does the proverbial stitch in time. The mere cost of repairs, however, is but an incident in the larger expense caused by the interruption of traffic on the streets by breakdowns and the temporary loss of earning capacity of cars which are out of service.

It is generally accepted that a thorough system of inspection is the real safeguard against rolling stock failures in service, but in many shops this work is done in a very perfunctory way. Records of heavy repairs on car equipments may be religiously tabulated on index cards and the expense of shop work on each piece of rolling stock sharply analyzed by the manager, but unless inspection results in definite statements of conditions prevailing which can be properly passed upon and filed, there is a good deal of danger that the value of the work performed will not be fully realized. For this reason "trouble report" cards on which are listed all the important parts of each equipment, with either blank or printed spaces left for entries of the car's condition, have come into such general use.

The fact is that the increasing weight, power and complication of modern car equipments call for a much more thorough system of inspection than was needed in the older days. The apparatus beneath a heavy car equipped for high-speed multiple-unit service may be better protected than the older practice afforded, but it is certainly less easy to inspect quickly and effectively because there is so much more of it. A pretty high degree of mechanical and electrical intelligence is demanded on the part of a shop force capable of maintaining electro-pneumatic brakes, control circuits, contactors, reversers, motors and such equipment in good condition, and it is a question if new men in the shops should not be given the special training which car service employees are required to have prior to taking up the work of regular operation on the road. It is always difficult to credit any system of inspection with specific prevention of equipment failures, but by recording the light repairs and replacements carefully and comparing individual car-mileage records for corresponding months, a management in close touch with its shop conditions can secure some interesting information in regard to the efficiency of its inspections in preventing breakdowns. Of course, one cannot draw too sweeping conclusions from isolated light repair jobs like the replacement of motor brushes and controller fingers, but the value of inspection methods must be judged on a material basis. This the use of the inspection and repair record, accompanied by a proper study of all of

the failures and an effort for their future elimination, should accomplish.

### The New Jersey Suburban Traffic

The announcement made last week by one of the officers of the Erie Railroad that, after reducing its service recently, the management had decided to take off twenty-five more of its suburban trains from Jersey City because they do not pay, affords a striking example of the two different aspects of the suburban passenger business taken by steam and electric railway managers. This reduction means, on certain of the lines at least, fewer trains of this kind than at any time since 1890, although the counties in New Jersey served by these lines increased in population between 47 and 66 per cent between 1890 and 1900, and during the last seven years have undoubtedly maintained almost if not entirely the same ratio in growth. The sentiment generally expressed by steam railroad managers that the carriage of freight is the most profitable part of railroading, that the through passenger business comes next, and that the transportation required by suburban passengers at best is done at cost is so different from the attitude and experience of the electric railway manager as to suggest comment.

In some respects both views are right. The average electric road carries its passengers with no other equipment than rails, power station and rolling stock. The steam railroad manager has to add to track and motive power the tremendous expense of a terminal station, which with steam operation usually means a considerable area in a territory where real estate is valuable, provided with stub tracks and extensive switching facilities. The extent and initial cost of these terminal facilities required vary practically with the size of the business done, so that from an accounting standpoint the fixed and operating charges of the station should be proportioned on a "per capita" basis among the total number of incoming and outgoing passengers. That this is not a trifling amount but constitutes a serious charge is shown by the testimony on this subject of Mr. Samuel Rea, vice-president of the Pennsylvania Railroad before the Royal Commission on London Traffic in connection with the suburban passenger business from that company's Broad Street station, at Philadelphia. Here the terminal expense and proportion of fixed charges for every passenger passing in and out of the station was 3 cents. This amount had, of course, to be deducted from the gross receipts per passenger before the receipts from the actual transportation of the passenger could be obtained. It practically constituted the difference between profit and loss on that company's short suburban business and confirmed it in its present policy not to compete with the trolley companies for the short-haul traffic.

One of the great advantages to be derived from the electrification of steam roads is the economy to be obtained in this particular item. It is true that the trackage facilities for terminal purposes provided in the new Pennsylvania Railroad station in New York City, in which electricity will be used, are very large, and will be so expensive that it is questionable whether any suburban business can be conducted from this station with profit. This particular instance, however, and that of the New York Central Railroad Company's new electric station at Forty-Second

Street are so special as to afford no general rule. More typical instances are offered by the few electric railway terminal stations which have been built in the large cities of the Middle West, and by the Cortlandt Street terminal station of the Hudson Companies, where eight-car trains will be dispatched on a 1½-minute headway from an underground station on two levels. The upper of these levels will contain waiting rooms, ticket offices, etc., while the lower will have five loops. The whole area occupied, with platforms, is only 160 ft. x 500 ft., including the space occupied by the 90 ft. entrance and exit curves. Another example, perhaps more striking because it comes from actual service, is offered by the experience on the electrified section of the Lancashire & Yorkshire Railroad, which has been quoted so frequently by recent writers in the last few issues of this journal, in connection with the increase in gross receipts from electrification. On this point the remarks of Sir George Armytage, chairman of the company, as given in the issue of this paper for Aug. 4, 1906, were that one especial advantage of the introduction of electricity "has been the reduction of operations necessary at the terminal station, as the train can leave the platform at which it arrived without any shunting. This alone will postpone the necessity for enlarging the Liverpool station for some time."

Outside of this question of terminals, the suburban passenger business of the Erie if conducted electrically would seem on the face of it to be profitable. In the interview already mentioned, the average commutation rate quoted for rides of from 10 to 25 miles is 10 cents per passenger, or \$6 per month. The cars seat about 60 passengers each, and during the rush hours usually carry a considerable number of standing passengers besides a full seated load. Trains at other hours of the day are not so crowded, but of course carry a very much larger proportion of passengers on family or single-trip tickets which are sold at from two to three times the commutation rate. If we assume the usual proportion of unused commutation rides to total commutation tickets sold, and that the smaller number of passengers during the slack hours is counterbalanced by the higher fare, the passenger gross receipts should average at least \$6 per car and probably more for a trip of from half or three-quarters of an hour to an hour, depending on the run. The car-hour basis is a more satisfactory unit of comparison to use in this connection than the car-mile, on account of the difference in speed, and while the power charge would be higher than in ordinary electric railway service, the "platform" expense should be lower, as two men per car would not be required when the cars are run in trains. The difference between even \$6 per car-hour and the \$2 or \$3 to which the average electric railway manager aspires should go a long way toward defraying the terminal charges on an electrical basis, even if they should include ferriage to New York.

We hope, now that the Hudson tunnels are so near completion, the trans-Hudson steam railroad managers will appreciate the financial possibilities of a rapid transit service on their roads to the suburban regions of New Jersey and will make early arrangements for the use of a power which will go far toward eliminating "terminal charges" and leave the present yards free for the precious freight.

### BAY SHORE PARK NEAR BALTIMORE

One of the most elaborate street railway parks in the country is that which was opened last August at North Point, on Chesapeake Bay, 16 miles from Baltimore. It is owned, with the extensions reaching to it, by the Maryland Electric Railways Company, and is leased on a 6 per cent basis to the Baltimore, Sparrow's Point and Chesapeake



RESTAURANT AT NIGHT

In addition there is a dancing pavilion to which an admission fee of 25 cents for men is charged, as well as restaurant, carrousel, shooting gallery, doll rack, swings, boating, and about fifty bath houses. River View and Electric Parks are within the 5-cent zone and their average



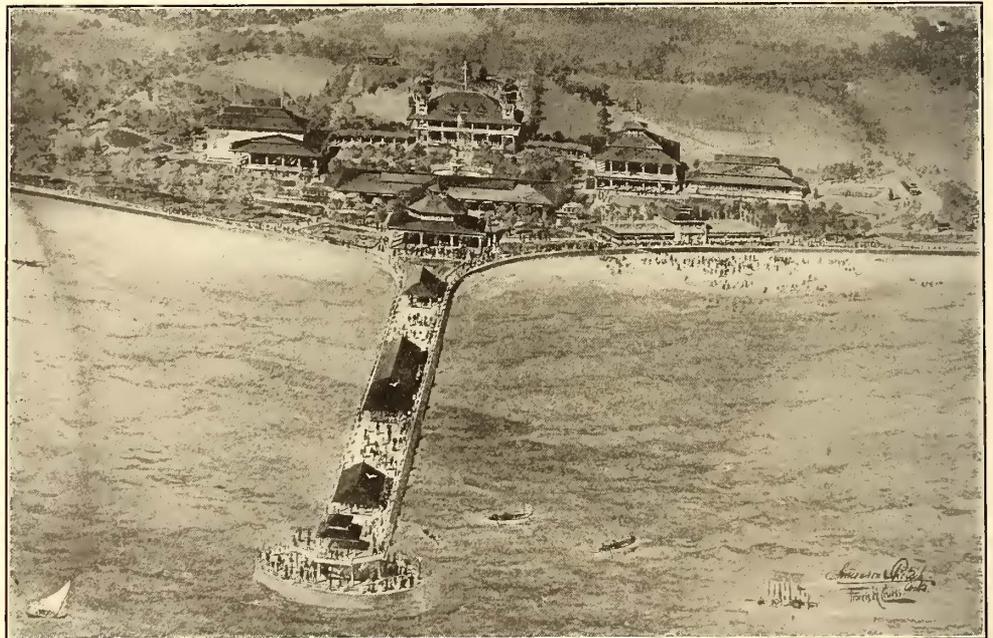
BAND-STAND AND FOUNTAIN

Railway Company, a subsidiary company of the United Railways & Electric Company, of Baltimore. The park is connected with Baltimore by a double-track line on which the United Railways & Electric Company expects to conduct five-minute service of multiple-unit trains during the coming summer. At the park the cars traverse a loop  $4\frac{1}{2}$  miles in length which enables the company to serve quite a territory and carry the passengers along the shore for a considerable distance. The new trains to be put in service this summer will consist of two motor cars each and will be equipped with the Westinghouse multiple-unit system. Eighty of these equipments have been ordered for delivery next spring.

Baltimore is provided with a large number of parks, some of which are owned by the city and others by the street railway company. Druid Hill Park is probably the most famous. It is an immense tract within the city limits and is owned by the municipality. Gwynn Oak Park is another well-known pleasure resort and is owned by the United Railways & Electric Company. It covers about 76 acres of wooded land and is about  $3\frac{1}{2}$  miles out from the center of the city. A ten-cent fare is charged to it on the cars. The United Railways and Electric Company has spent considerable money in developing this park, and it is especially designed for high-class patronage. The average attendance on Sundays is from 4000 to 5000 persons. Vaudeville entertainments are given twice a day, and last year daily balloon ascensions were made for a period of four weeks.

attendance is about 10,000 to 12,000 on week days and 20,000 to 25,000 on Sundays.

None of the parks mentioned, however, is on the salt water. In fact the Patapsco River, on which Baltimore is located, is so narrow and shallow and is so given over to



PERSPECTIVE VIEW OF BAY SHORE TERMINAL

commercial purposes that the nearest desirable shore locations are on the Chesapeake Bay. But the experience with Bay Shore Park last year during the short time in which it was open indicated that Baltimoreans are ready with their patronage to support a park where salt-water bathing and the other attractions available at a shore park can be had. It should be borne in mind that Baltimore is the farthest south of any of the large cities on the Atlantic seaboard, and its park season is generally recognized as extending

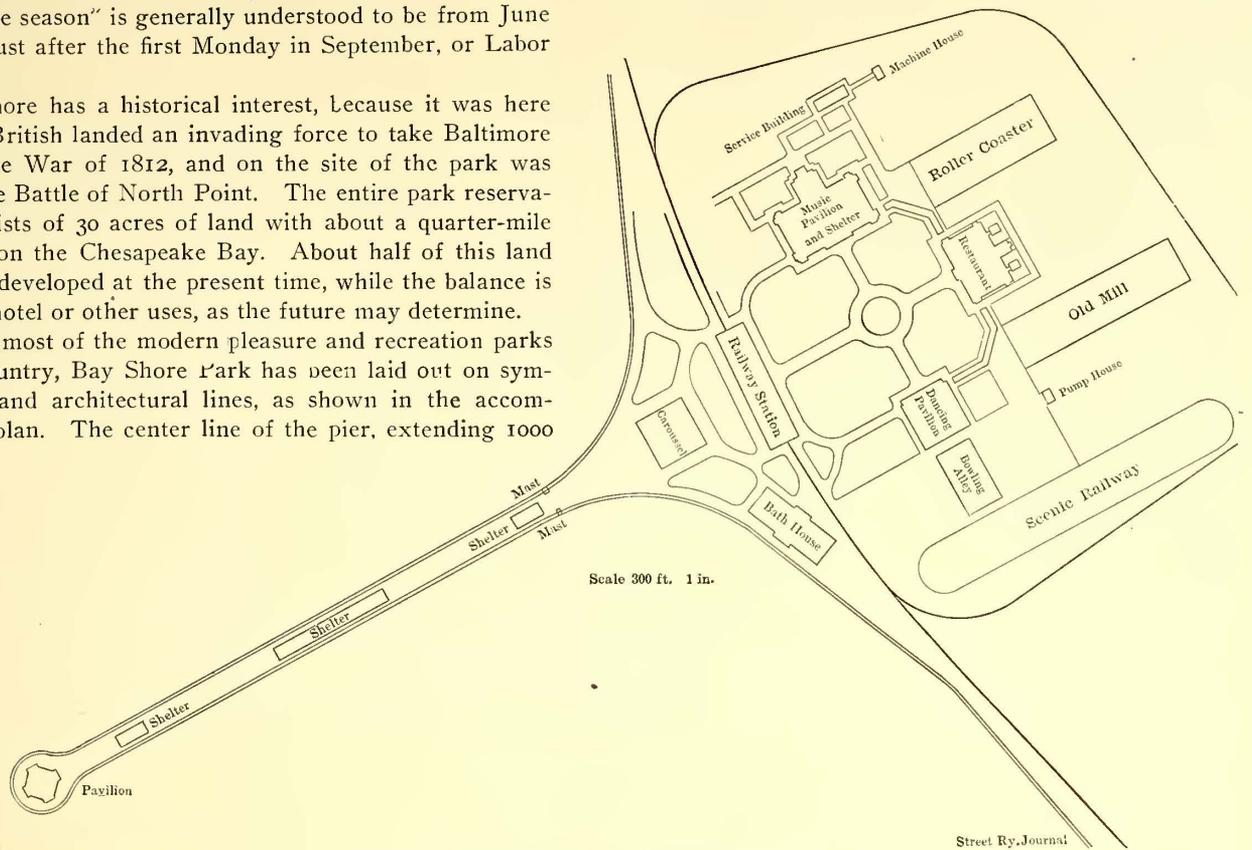
from the Saturday before Decoration Day, or May 30, until the Sunday after "Old Defenders' Day," or Sept. 12. This makes the length of time during which a park will be well patronized about four weeks longer than that in New York, where "the season" is generally understood to be from June 15 until just after the first Monday in September, or Labor Day.

Bay Shore has a historical interest, because it was here that the British landed an invading force to take Baltimore during the War of 1812, and on the site of the park was fought the Battle of North Point. The entire park reservation consists of 30 acres of land with about a quarter-mile frontage on the Chesapeake Bay. About half of this land has been developed at the present time, while the balance is held for hotel or other uses, as the future may determine.

Unlike most of the modern pleasure and recreation parks in the country, Bay Shore Park has been laid out on symmetrical and architectural lines, as shown in the accompanying plan. The center line of the pier, extending 1000

part of the park set aside for amusements such as the roller coaster, old mill, scenic railway, etc.

The buildings are designed in the Colonial style of architecture and harmonize well in appearance. The restaurant



PLAN OF BUILDINGS AT BAY SHORE PARK

ft. into the bay, is also the center line of the park proper. On each side of this center line are grouped the different buildings which will be described later, and which consist of a railroad station, music pavilion, restaurant, dancing

building is unique, as it has large porches and verandas on both stories, extending around all four sides of the building. The roof line is broken by dormers and four corner towers, giving the building an exceedingly graceful and well-pro-



PERGOLA



LOGGIA OF BAND-STAND

pavilion, billiard hall, bowling alley and bath house. All of these buildings are grouped around the central court, in whose center a large fountain has been erected. The restaurant is connected with the music pavilion on one side and the dancing pavilion on the other side by open Roman pergolæ, thus separating the group of buildings from that

portioned festive character. The floor contains a large dining hall with a spacious central open stairway leading to the second floor, which is intended to be reserved for ladies and children spending the day at the park. The kitchen, serving room, pantries, etc., are located in the rear of the ground floor, while two suites of rooms for the superin-

tendent of the park are provided on the second floor. The restaurant covers an area of 94 ft. x 104 ft.

The music pavilion is an imposing open structure, carried by ornamental columns and trusses, and measures 122 ft. x

other buildings, it is designed to have four fronts, so that any of the other buildings can be seen from it.

The billiard hall and dancing pavilion is a two-story building, 82 ft. square. The billiard tables are on the ground

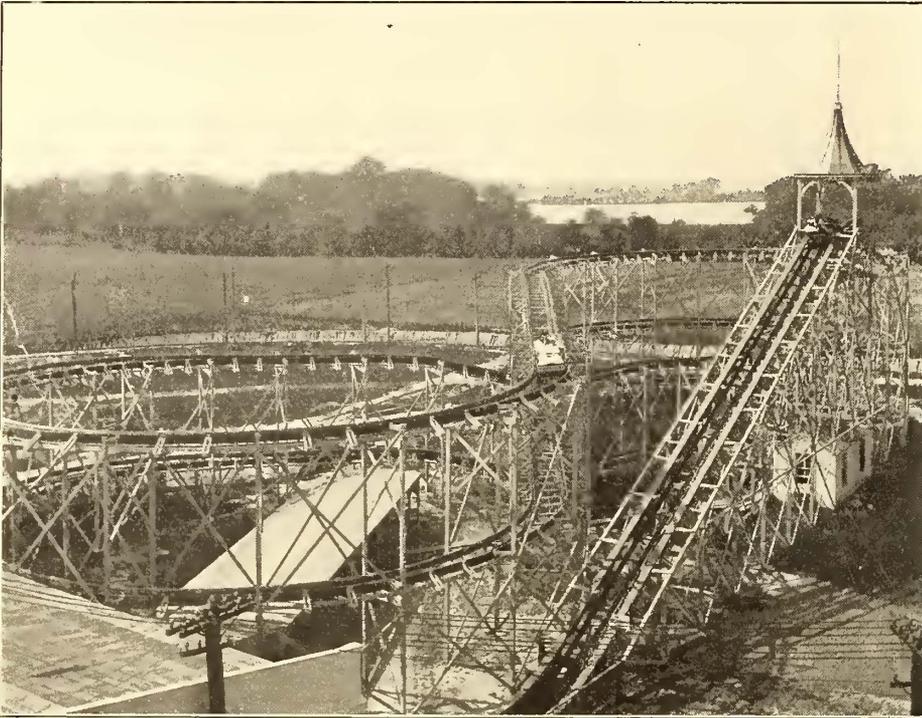
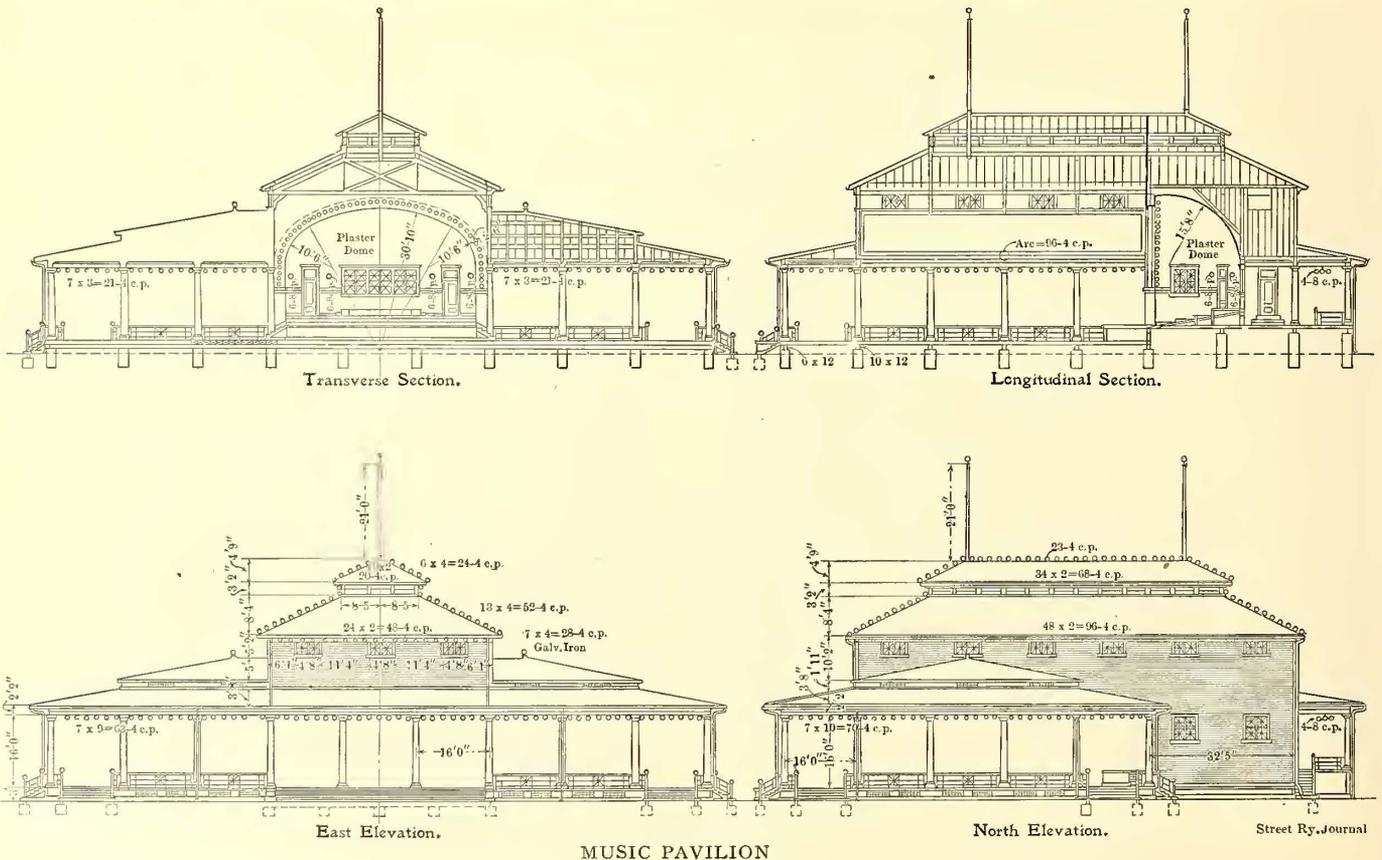


FIG. 8 ROLLER COASTER



A DRINKING FOUNTAIN

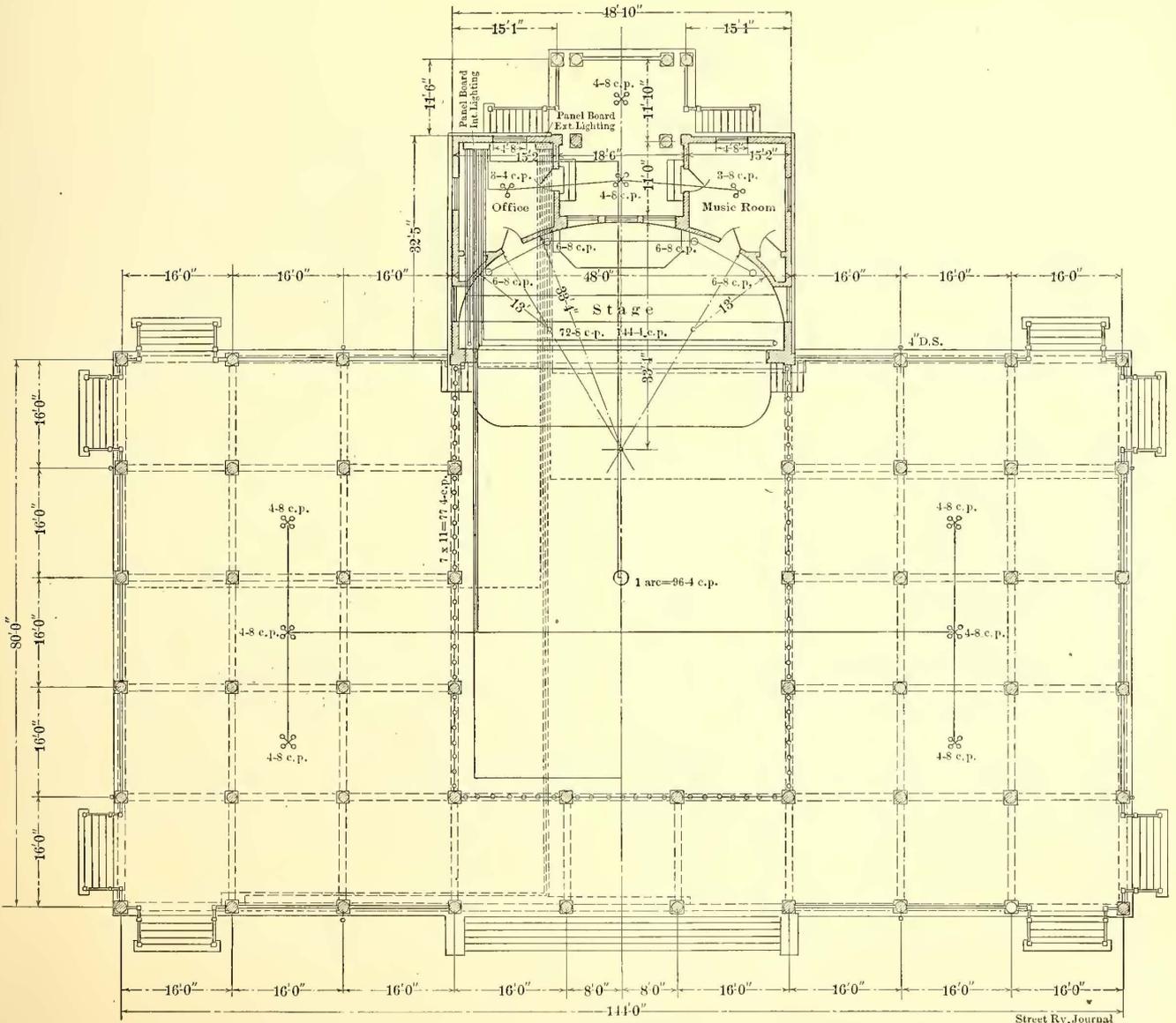
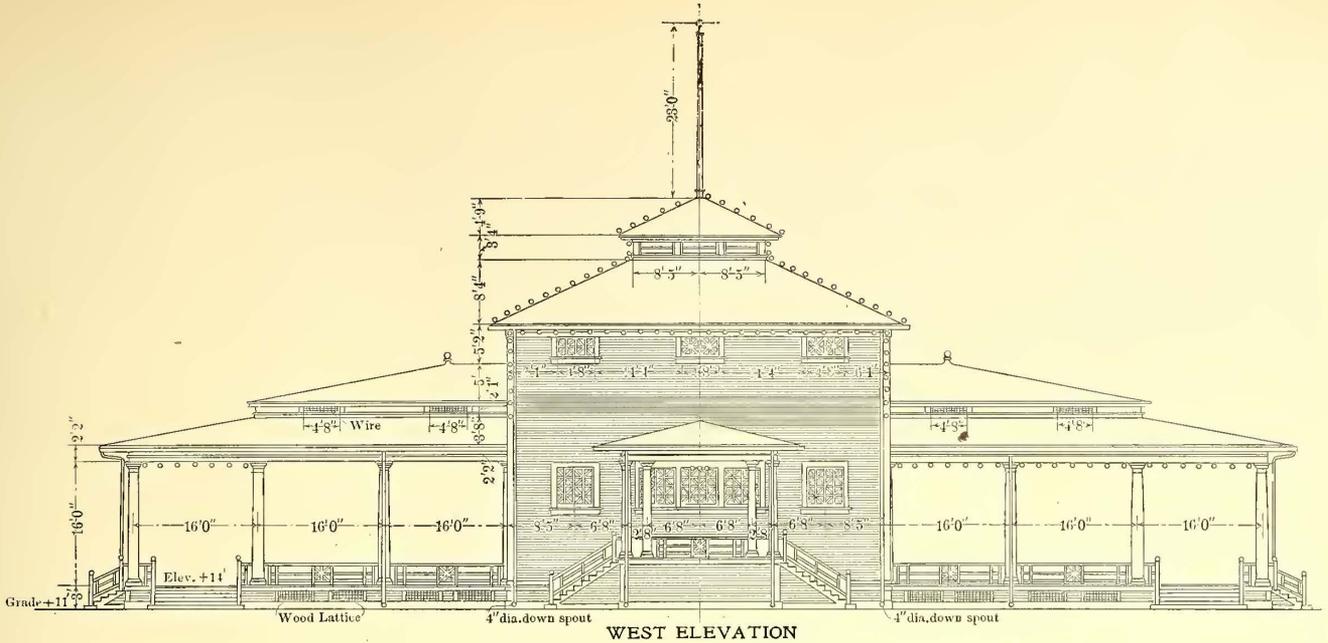


MUSIC PAVILION

Street Ry. Journal

144 ft. It has a seating capacity for more than 2000 persons. The musicians' platform is elevated and enclosed by a spherical shell designed to obtain best acoustics. Spacious steps lead to the music pavilion from all sides, and like all

floor, while the dancing floor is on the floor above. Two large open front stairways give access to the upper stories. Immediately adjoining is the bowling alley building, which is 60 ft. wide and 108 ft. long, and which is equipped



PLAN AND WEST ELEVATION OF MUSIC PAVILION

with ten modern alleys for both duck-pin and ten-pin games.

The railroad station is a covered structure, 48 ft. x 208 ft., with a car track in its center. Between the railroad station

sea walls at the entrance to the pier proper is emphasized by two large pylons, carrying flagstuffs.

The bath house building has been located at the bathing beach. It is a highly ornamental building, and has a length of 150 ft. and a depth of 50 ft. The central portion of this building is two stories high; the first floor contains the entrances, offices, with the requisite towel and bathing-suit rooms, while the second floor contains the women's bath rooms. The bath rooms for the men are grouped in tiers in the two adjoining wings leading from the central portion of the building at the first floor. All of the bath rooms are large and well ventilated.

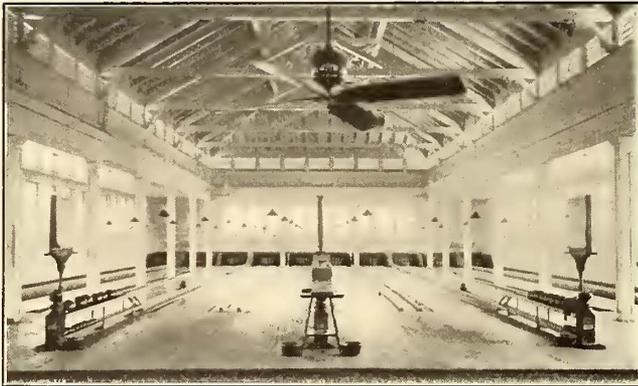
As the water supply for the park is pumped from an artesian well, an artistic pump house has been erected to accommodate the pump and filtration plant. The water is piped to the different buildings as well as to artistic drinking fountains scattered throughout the

grounds. One of these is illustrated on page 314.

At the further end of the concrete pier, which extends 1000 ft. into the bay, will be erected a two-story pavilion,



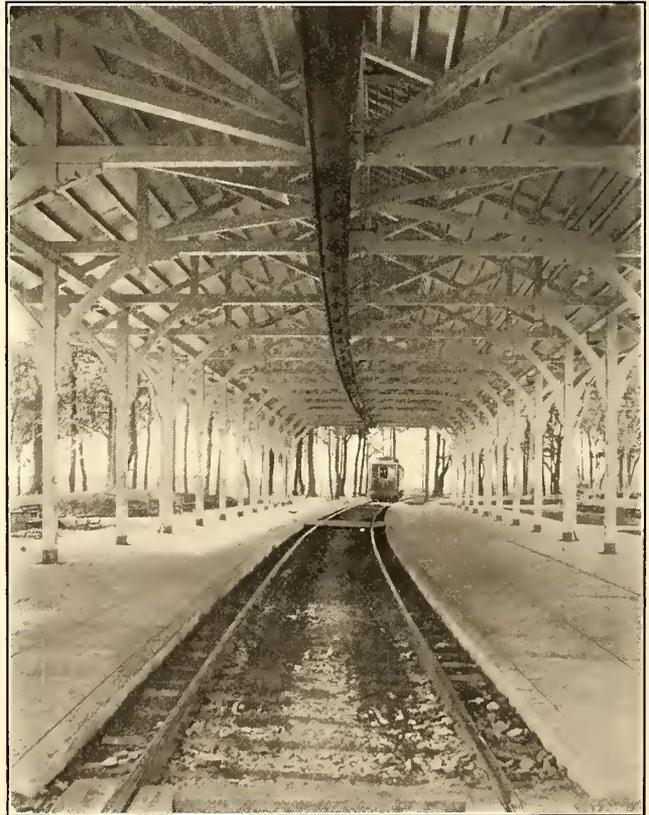
THREE-ROW CARROUSEL AT BAY SHORE PARK



BOWLING ALLEYS AT BAY SHORE PARK



ENTRANCE TO BATHING PAVILION



TERMINAL SHED WITH PLATFORMS ON BOTH SIDES OF TRACKS

and the pier is the carrousel building, 86 ft. square. This is an open structure with an octagonal clere-story and lantern, and accommodates what is said to be the largest carrousel in the world. This carrousel was made by Dentzel and has three rows of animals. The intersection of the pier and

while three shelters will be erected equidistant for the accommodation of the public.

Besides the buildings already described, a service building has been erected for the accommodation of the railway employees. It contains offices for the superintendent, train

dispatcher, motormen and conductors. A shop and a machine house has also been provided.

All of the buildings are lighted at night by electricity and special attention has been devoted to the exterior lighting and illumination of the buildings, the architecture of which at night is outlined by thousands of incandescent lamps. The park proper is illuminated by a series of arc lamps. The grounds have been beautifully laid out, and sidewalks of granolithic pavement give communication between all of the above described buildings in the park.

The layout of the grounds and the buildings were designed by Messrs. Simonson & Pietsch, architects, of Baltimore. The total cost of construction, including the railroad track work, sea wall, pier, buildings, etc. was about \$500,000.

## LAYING OUT AN IDEAL INLAND AMUSEMENT RESORT

BY EDWARD P. HULSE

In making an electric railway pay, a well-located amusement resort will give much assistance. I think, as a general proposition, this is commonly assented to now, although there has been much divergence of opinion as to this in the decade or so of experimentation—coupled in many instances with financial loss and unfortunate results from ill-advised ventures or badly-worked-out plans—that led to the crystallization of this experience into the practical knowledge of what was essential to make a successful public playground. Even so, there are heard those embedded in the managerial seat who hold that catering to the diversion of the pleasure-loving percentage of the population should have no recognition in the operating policy of an electric railway, either street or interurban, and who anchor their enterprise in the shallows of this sufficient conclusion. From the standpoint of their particular experience they are probably right, since they have the figures from their own accounting department to go by.

A park is not a universal panacea for passed dividends. But the overbalancing opinion inclines to the satisfied determination that a correctly located and properly operated resort will aid in keeping red figures off the balance sheet. If the Columbus convention brought out one fact pointedly, it was this; and the conclusive symposium of the committee on the promotion of traffic,\* which had labored hard and long to gather a comprehensive report on such matters, is the best presentation that has ever been given on this subject.

Locating and laying out an amusement resort is not by any means an exact science. There are too many local conditions of which it is necessary to take cognizance in each particular case to permit stating a set of formulas which should in every instance result infallibly in success; but enough is now known with the experience of the past to go by to warrant an expression of some things that should be avoided and of some that are advisable in the majority of cases.

In the first place, be prepared to spend enough in the original outlay to give the proposition a chance of being a success. There is such a thing as spending just enough to foredoom it to failure, just as there is a "faint praise which damns." If you go in, get in strong.

Traffic to an amusement resort ordinarily presents itself at a time of day or night when the power and equipment are

not called on heavily as is the case during the peaks of business travel at noon and at evening. The advisability of establishing a park is augmented where this condition can be met—where the park can be so located that the handling of its patronage will be in a direction opposite to the regular business crowds. Park visitors belong to three general classes as regards their time of traveling: those who go out during the morning (generally ladies with large parties of children) prepared to stay for the day, returning at sunset; those who go out during the early afternoon, returning at 6 o'clock or staying over until the night exodus; and those who go out after their evening meal and stay until the last cars. The resort must be located so that this movement can be handled against the business rush. That is the first desideratum.

The next is to place it at a sufficient distance from the main centers of feeding population to warrant the collection of two fares. Many parks that were located on short hauls within the single fare radius paid splendidly the first year, while the novelty lasted, and were patronized by all classes. The second year usually showed a marked difference in the class of patronage. The better class of people began to stay away, asserting that there were "objectionable features." The third year usually found the park given up to the cheaper element, who spent only enough to buy a glass of milk and a piece of pie from the restaurant or a glass of moxie and a bag of peanuts from the refreshment stand. The latter class also patronized the amusements sparingly, if at all, usually only to the extent of an occasional dance ticket, cutting out all but the waltzes, a single ride on the roller coaster or the merry-go-round. By the "cheaper class" I mean just that class that every park manager knows about and would prefer to have stay away: the kind of people that do not go out with the predetermination of spending any money or having a good time on their own account and attending strictly to their own business while having it, but who go out to hang around, to stand outside the entrances of the various concessions, to pass remarks on those who patronize them, to mix in with others' enjoyment, to see "what's doing." The word that expresses that class is "mugs"—they will kill any resort except one gaged especially to suit them. Just the difference in the initial expenditure—the amount of fare necessary to get there and back—marks the difference between filling the grounds with this undesirable element and a better grade of patrons. I do not concede that the class of people that will eventually be attracted to a park run on a high plane is the smaller proportion; my experience is quite the opposite, and certainly the park is assured of a longer life in its popularity and good name. The class that you will always get will be just the class that you aim for, preferably the large class of well-behaved, fun-loving, money-earning young people—the class of people that it will pay to get to the resort because they spend dollars where the other class would spend dimes, and who do not destroy more in the value of the company property than the amount of their patronage. In large cities the solution is two, even three or four parks, each one differing in the class of patrons that its attractions are gaged to draw. A park can hold its popularity with the best-paying class longer if it is run up to the best standards.

A recent instance in point as to the kind of park that is found most profitable for an electric line to have is the case of the road operating in a large city in the Middle West which has had four parks on its lines and which recently sold off the land of two that were within the single fare limit, retaining the other two. One of these, with a ten-cent

\* See STREET RAILWAY JOURNAL, page 822, Oct. 27, 1906.

fare, has always been run on the highest plane, has always been popular and always promises to be because the orderliness of its patrons has never been questioned.

After deciding the direction from the centers of population in which the resort must be placed so as not to conflict with the regular heavy travel, and marking off a zone to include the two fares to the best advantage, the next thing is to find a suitable water location, either river or lake, within these predetermined limits. The inland park resort must have water. This must not be controlled by any manufacturing concern as a source of power nor must it be drawn on as the water supply of any municipality or town. In the first instance the water is apt to be reduced in the summer months to a level that would be exasperating; in the latter case the uses to which it could be put for park purposes would be very limited. It could not be used for swimming or for aquatic contests; even tub races would be barred. Those going into the water, even by falling overboard from a boat, would be liable to arrest. It could not be used for any of the long list of spectacular attractions such as marine battles with fireworks, diving horses, high diving, shooting the chutes, water walking, etc. As an alternative, in case the proper body of water, lake or river could not be found, it would be better to secure control of sufficient land, properly located, and make a lake by damming a small stream or brook.

Sufficient land should be taken to allow plenty of room for the park, and then a strip all around it should be secured, so as to avoid too close proximity of counter-attractions that might tend to hurt the character of the resort. In this belt of land outside the park fence proper, the ownership of the property could be made to pay by leasing lots for cottages or even renting camp sites for the season. I have in mind several instances where a source of revenue not to be despised originated in this plan alone, besides having the obvious advantage of controlling the park surroundings. The west to the south sides of the lake should be chosen for the park. If it were on the north to the east sides the sun would slant under the trees during the afternoon, making it warmer, and shining uncomfortably into the faces of those on the shore.

The site picked as the park location should not be too rugged in its topography. An occasional glen or dell adds picturesqueness, but if the whole site is hemmed in by hills it is apt to be stifling in the warmest weather. Moderately sloping land, located so the breeze can get to it, and not requiring much grading, is to be sought. Two-thirds should be woodland and one-third adapted for easy clearing. The wooded part should admit of being broken up into several scattered groves. This on account of proper landscape effect, but also for the more practical purpose, later on, of segregating picnic parties in separate, well-defined locations. The advisability of this can be attested by the manager of any park who has had the problem of accommodating two or more organizations of several hundred each which elect to have their outings on the same day; it is always difficult to impress them that they are getting the proper attention even though the grounds may be large enough to accommodate 25,000 people without giving the place a crowded appearance. I have seen very few excursions of this nature that did not almost resent the appearance of anybody else on the grounds on the day that they had chosen. All confusion in handling each crowd can be avoided, however. A pavilion in each grove or a clearing in which a tent may be erected will give each organization a separate headquarters for the day, where their impedimenta may be left under

guard, and which will serve as their rallying point. The seclusion of picnic parties may be further advanced by having one or two private groves fenced in with light wire. Later on, when the park advertises for lodge and Sunday school outings and the picnics of organizations, the practicability of planning for their comfort from the beginning will be understood.

The natural features of the land will determine best how it must be divided—what should constitute a grove and lawn, athletic field, promenades, walks, flower beds, terminal station and the sites of the different buildings and amusements. Thinning out the unnecessary trees, removing rocks, clearing up the underbrush, platting the lawns, building the rustic features and rookeries, etc., had better be done under the direction of a landscape artist whose sole idea of beautiful effect can be held in check by the practical necessities of the purpose to which the land is to be put.

As a general rule, the respective locations of the terminal station and the main buildings will have quite an effect ultimately on the receipts. It is an axiom to place such features as the theater, the athletic field and any other amusement where crowds of people make a simultaneous exit on the opposite side of the park from the terminal station, or it will be an easy matter for the whole attendance to be stampeded to the cars by the few that are really in haste to return to their homes. Where all have to pass the other attractions on their way out, a larger percentage is apt to linger and take an interest in the other amusements. The theater especially should be placed as far as possible from the terminal loop so that the ringing of gongs and the blowing of whistles cannot interfere with the performance. The theater also should be far enough removed from the other concessions having music or making a noise so that there will be no annoyance. The dancing pavilion, merry-go-round, roller skating rink, etc., all employing music, need not be too widely separated, as the patrons of each can seldom hear the noise of the other attractions when their own music starts up, and to those on the grounds the sound of music coming from different directions as they pass along gives the desired "gala" effect, and is pretty apt to start them to getting their share of the fun. It takes a certain amount of excitation before people begin to think that they are having a good time. The crowds at a park can be "warm" or "cold" in the same degree as in a theater and with the same effect. They have to be stampeded into starting the fun for themselves, and some of the psychology by which this can be done, later on, can be assisted by laying out the park in a conforming manner.

Isolated locations for each attraction are to be avoided. The closer all the amusements are grouped—with one or two evident exceptions—the better will all of them pay. An instance in point is in the case of a man who secured a merry-go-round concession in a certain park and insisted on a location all by himself. He did not want his crowd "drawn away." At the end of the season the company had to take over his property for his debt, his receipts having fallen below his guarantee. During the winter months, by attention to other things, he made enough to pay off his rent, and got his property back. He was prevailed upon the second year to allow several new attractions to be placed near his carrousel, and found that his receipts showed a profit from the very start. People will pass readily from one attraction to the others, visiting the majority of them, if the entrances are near together, where they would lose interest if they had to hunt each one up in a widely separated part of the grounds. Do not put in all the amuse-

ments that could be thought of the first year, but leave enough to be done in future years to keep up the novelty.

As to the buildings themselves, I consider the best effect is gained by artistic construction of rough-finished timber stained a combination of dark green and brown or other subdued tints, with the roofs of stained shingles. This color scheme harmonizes with the natural colors of any background of woodland or lawn, and is far more pleasing to the eye than the too frequent combination of smooth-finished boards, tin roofs and glaring ochre paint or other gaudy color. The inevitable slight shrinkage of parts of all buildings constructed of wood is not so observable or displeasing where rough-sawn lumber is used, and some fine artistic effects can be secured. No amount of fresh paint can remedy the barn-like effect of most park buildings toward the end of their first decade. Glass in the side walls, with artistic finish around, is better and handsomer than blank weatherboarding.

In laying out the water and drainage systems it is advisable, if possible, to have the sewerage carried off in a direction opposite to the lake, and to make this fact known. When the drainage and water pipes are laid, the private telephone and the main electric feed wires should be conduited also, if the whole park-like effect is not to be destroyed by spider-like criss-crosses of wires overhead and cutting across every view.

As the main drawback to park attendance in the summer is the possibility of showers, the inconvenience from this should be avoided as much as possible. A rainy day in the short summer harvest means a dead loss of thousands of dollars in gross receipts to many roads that have parks. There should be enough shelter provided in the different buildings on the grounds to accommodate the whole park attendance in case of a sudden downpour, especially if accompanied by a small windstorm, as is so frequent in the summer. The advisability of eliminating the discomfort and dread of this almost entirely by connecting the different buildings with a covered passageway is not to be decried. A solid board walk with side walls 3 ft. or 4 ft. high and widely roofed would protect from sun as well as rain. Starting from the terminal station, this protected walk, in the nature of an arcade, could make a circuit of the main attractions without in itself being very long or expensive to construct; and the fact that, once aboard the company's cars, the condition of the weather could give no concern would result in a larger attendance. For it cannot be denied that a large percentage of possible patrons are deterred from attending an open resort in summer where there is a possibility of their being caught in a shower. Any park that could provide amusement on a rainy day in summer would hardly lack for patronage. A small cloud in the sky early on a summer afternoon may easily kill the receipts for that day.

I believe in the advisability of roofing the theater in almost every instance. How often a five-minute shower has cut out the entire attendance, wetting the seats so that they cannot be dried out in time. I know of instances where a roof has paid for itself in one year, although roofed summer theaters are not the invariable rule. The theater should be located as far as possible from the terminal station and away from other attractions having music, and it would be as well if it were not placed too near the shore of the lake. Too often the singing of boating parties or the inevitable phonograph in slowly passing canoes mars the performance. A theater designed to permit of light opera and musical comedy, while calling for additional expense in the way of

more extensive stage arrangement and facilities and more room overhead and in the wings, as well as additional dressing rooms, will be found in the end to bring in a larger compensating net return. Strong seats, folding and removable if in an outdoor location, are the best—strong enough in all parts to avoid dowels and rungs rotting in one season of exposed weather and preventing the annoying occurrence of several breaking down during each performance, with the attendant possibility of damage suits.

For band concerts the usual arrangement of a stand with seats grouped stiffly around it is not the most satisfying and belongs to a cruder period. People as a rule prefer to stroll when listening to the usual summer band concert, no matter how fine the organization; and with the object of satisfying the largest number and all classes, I always suggest that the band stand be located on a natural or artificial island about 90 ft. off shore. If the bank is slightly sloping opposite the band stand several rows of benches can be placed under the trees close to the water's edge for those who prefer to sit down and listen. A wide, shaded promenade directly behind will please those who prefer to walk up and down. The canoe and rowboat patrons can group around the stand, and all temperaments will get more satisfaction from this plan than by being stiffly huddled in a set location where the rays of the sun cannot be avoided and where their personal comfort cannot be considered.

The laying out of the athletic field is governed entirely by the use to which it may be put by local organizations for all possible sports and for field days, but the arrangement should also permit of giving some of the large spectacles there when necessary.

The terminal station will go farther to make or mar your park than any other feature on the grounds. It is there that patrons get their first and their last impressions, and too much care cannot be expended in planning it. People who are having a good time at a park usually stay until the last possible minute before they must go home; a delay then will negative any previous good impression. Be prepared to send them away without any exasperating waits, and you will do much toward assuring their return. Avoidance of injury to patrons and attending damage suits are the first things to be considered; separating the crowds so far as possible into groups with reference to their destinations is the second. The expeditious and calm handling of the incoming and outgoing crowds at the same time, with the entire elimination of the too frequent stampede and panic, can be attained by many types of terminal stations that do not look too much either like cattle pens or prisons. Plenty of trackage is necessary and plenty of cars. If two and three-car trains are run or a motor car and trailer it is sometimes advisable to have the last car swung back at a cross-over where experience has taught that the crowd on the cars begins to thin out, and announce when the car is loading for the return trip that this is to be done, also mark it with signs.

Do not cut out too many of the trees, especially around the sites of buildings. If your theater is open and unroofed, leave a few of the larger ones at the sides and through the back part. Build the roller coaster right in a grove, of course allowing for all possible free swaying of trunks and branches during a windstorm. The restaurant is more satisfactory if erected in the shape of a St. George cross so that all tables will be reasonably near to the windows. The best location on the grounds is none too good to be given to this, especially where it can command a good view of the lake. Consider at the start the possible locations of additional attractions that will keep up the novelty of the park

in the future years, so that the general effect of the completed park will be pleasing and convenient.

After the grounds are laid out avoid the burning tendency to mar the view with dozens of signs. I know of resorts which people are urgently invited through extensive advertisements to patronize, and on their arrival there they are confronted with endless "Keep Off the Grass" signs, hundreds of them, and large notices warning all sorts of penalties for picking flowers, barking trees, acting in a disorderly manner, bringing dogs, eating lunches, cutting woodwork, going in swimming or doing many other things that would not be suggested to them but for the signs placed before them. People are very apt to act on the suggestions conveyed as did the children of the nervous woman who told them on leaving them alone for an afternoon not to put beans up their noses, and who of course found on returning that they had tried it and were suffering the consequences. The usual billboard placarding of "Rules and Regulations" with several officials' names crowded on in large type is a favorite way of marring the vistas in an otherwise attractive scenic outlook. Park patrons understand generally that they are not supposed to turn handsprings in the flower-beds, and if they take that inclination a sign printed in two colors with the general manager's name in four-inch letters will not deter them. A good police force patrolling all parts of the park and acting firmly and sufficiently when occasion warrants will soon spread the impression in the only quarters where that information is ever likely to be needed that ladies and children will be protected in that park safe from annoyance, and that its property cannot be recklessly destroyed. A little lock-up, conveniently but inconspicuously placed behind the fence of the ball park, with two cells and six cots, is a feature of one well-conducted park that I have observed. When it has been necessary to use it the effect is conclusive and widespread. Court is held that day or next morning in the small police headquarters centrally located on the grounds, and the fine is paid or the offender is handed over if the severity of the breach warrants it. Order in that park is easily maintained against the disposition to break it on the part of the few rowdies who have not learned its reputation beforehand. The cost of innumerable signs is checked off against the cost of the two buildings, the police headquarters and the lock-up. Instead of so many warning signs, provide sufficient direction signs, and in the proper sheltered locations have clocks, maps and time tables, with notices telling when the last cars leave for all points along the lines.

In keeping up the tone of the park, arrange so as to have the supply and removal system kept as far in the background as possible. Let the wagon entrances be placed to permit of inconspicuous ingress and egress. If supplies are brought by car, large piles of crates, empty soda-bottle cases, barrels, pie racks, etc., stored in the terminal station have a cheapening effect. A sidetrack or short spur track to the storeroom should be provided for at the beginning.

In laying out the grounds and buildings the possibility of a winter use of the park also should be taken into consideration. If a building or two is so constructed that it can be boarded in, and so located that it can get steam boiler heat from the restaurant there are many ways of making the park pay in the cold months. A dancing pavilion, close to the lake, could fill a double purpose, the broad piazzas surrounding the dance hall serving as a skating landing from which a pier could lead down to the ice. A toboggan slide could start from the roof of some building, if no natural conformation of ground is available, and terminate on the ice. The sheltered passageway from the terminal station again

would come in handy in the winter time. Bowling and ice skating parties, snowshoe and skiing clubs, dancing and roller skating could keep the winter lively and make the resort pay even in the "retrenchment" season.

With these general directions the variation of detail that every individual location would call for could be easily arranged and a resort planned that would meet, from the experience of the past, most of the conditions necessary to provide a profitable adjunct to the equipment necessary to make a large electric system improve all its avenues of profit.

### AN ELECTRIC RAILWAY PARK ON LAKE ERIE

The Ottawa Beach & Southern Railway Company, of Toledo, Ohio, is rushing work on its new waterside park as rapidly as possible. At present the company has under course of construction a large dance hall, a bath house of 200 rooms and a restaurant. These buildings will probably be completed by May 15. A dredge is also in operation excavating material to enable the erection of five miles of inland lagoons within the next nine months. Next year the company expects to have a hotel finished that will accommodate a large number of people.

This park will be complete in every detail, having all the popular amusements. It will be operated strictly on the temperance plan. The park covers 320 acres, having about one mile frontage on Lake Erie with an elegant bathing beach.

### REPORT ON PROGRESS OF HUDSON COMPANY'S TUNNEL WORK

The report of Chief Engineer Jacobs, of the Hudson Companies, regarding the progress of the construction work on the tunnels of that company from New York to Jersey City contains some very interesting information.

The report shows that construction has progressed very favorably during the past year, the work being prosecuted continuously day and night. So far, 16,517 ft. of tunnel have been constructed, of which 12,160 ft. was lined with iron and the other 4,357 ft. was drilled out of the solid rock and will be lined with concrete. This part of the work has required the removal of 104,000 cu. yds. of material and the use of 35,000 tons of cast-iron lining plates.

The upper set of tunnels from the Lackawanna station in Hoboken to Christopher Street in Manhattan has been practically completed. The temporary tracks have been removed and permanent operating tracks are being put in place. It is expected that the Sixth Avenue extension of this portion of the system will be finished and trains will be operated from Hoboken through this set of tunnels as far as Fourteenth Street in Manhattan by Sept. 1 of this year.

The Church Street terminal of the lower set of tunnels is being rushed as rapidly as possible. This building will cover an area greater than a city block and will be one of the largest buildings in the city. Thirty-five caissons have been sunk for the surrounding foundations and two for the interior work. Twenty-five additional caissons are ready for sinking. Some idea can be gained of the magnitude of this part of the work from the fact that 36,000 cu. yds. of material have already been removed from the excavation, which has not as yet been completed.

While the management of the Hudson Companies has not as yet set a time limit at which it expects the full system of tunnels to be in operation, at the present rate of progress the work ought to be practically completed and the roads in operation in the course of a year.

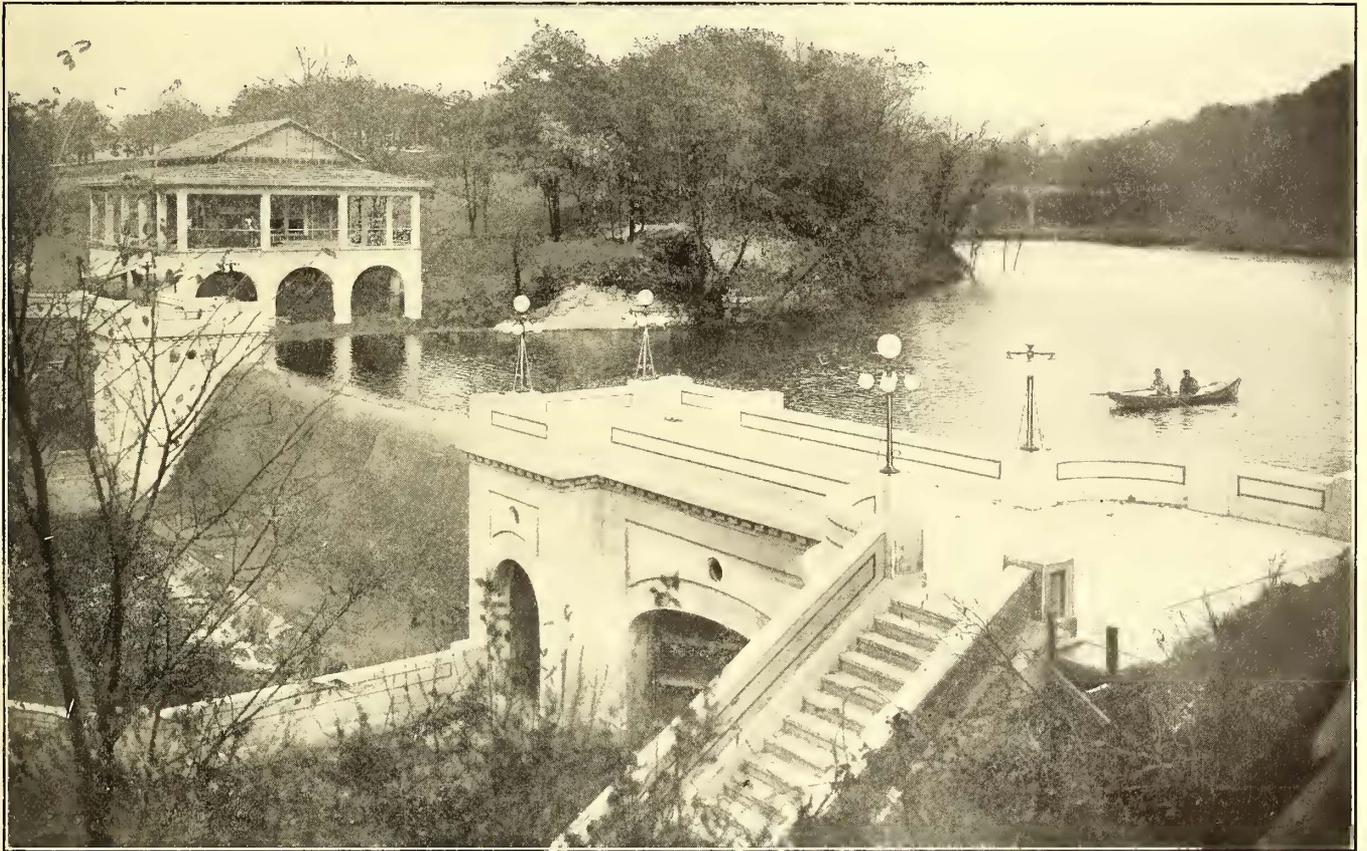
## DELLWOOD PARK, THE NEW AMUSEMENT RESORT OF THE CHICAGO & JOLIET ELECTRIC RAILWAY, AT JOLIET, ILL.

Dellwood Park, which has been recently constructed at Joliet, Ill., and which will be operated in connection with the Chicago & Joliet Electric Railway, in beauty of natural scenery is far superior to the average electric railway or city park. In cost of construction and in the character of the buildings and structures erected upon it, the assertion can safely be made that it is equaled by no other electric railway pleasure resort in the Middle West.

The park, which contains 62 acres of land, mostly wooded, is located on the double-track Chicago-Joliet line of the railway Company, 4 miles north of Joliet and 26 miles distant from Chicago. The high ground upon which it is laid out

ment avenue on either side of which buildings for amusement features have been erected. Through the wooded portion of the park south of the ravine winding paths of crushed stone have been made, and to connect these with similar paths on the north side two concrete bridges have been built across the ravine. A tract of sixteen acres, including the upper or smaller lake, which is fenced off from the main portion of the ground, has been equipped to accommodate the Joliet Chautauqua Association and other similar assemblages. North of the Chautauqua grounds an athletic ground covering five acres is enclosed in a high board fence.

Practically all of the visitors to the park will reach it by way of the railway, and to accommodate passengers two stations provided with train sheds have been constructed. One which is on the main line between Chicago and Joliet



LOWER DAM AND BOAT HOUSE IN COURSE OF CONSTRUCTION. LARGE CONCRETE BRIDGE IN THE DISTANCE

overlooks the valley of the Des Plaines River, and the view reaching north and south as far as the eye can reach takes in the deep waterway or drainage canal connecting Lake Michigan with the Mississippi River. A deep ravine with limestone bluffs on either side, and which sheer off abruptly in places, winds through the tract diagonally. North of the ravine the ground rises gradually to an eminence near the northern boundary of the park, which is 82 ft. above the lowest level of the ravine. In deciding on the general layout of the buildings and other artificial features, General Manager J. R. Blackhall of the railway company, who conceived the idea of the park and had charge of its construction, utilized to best advantage the natural topography and scenery. The ravine has been dammed in two places, making a lower lake covering about five acres of ground and an upper one of three and one-half acres. On the high portion north of the ravine there has been laid out an amuse-

ment avenue on either side of which buildings for amusement features have been erected. Through the wooded portion of the park south of the ravine winding paths of crushed stone have been made, and to connect these with similar paths on the north side two concrete bridges have been built across the ravine. A tract of sixteen acres, including the upper or smaller lake, which is fenced off from the main portion of the ground, has been equipped to accommodate the Joliet Chautauqua Association and other similar assemblages. North of the Chautauqua grounds an athletic ground covering five acres is enclosed in a high board fence. Practically all of the visitors to the park will reach it by way of the railway, and to accommodate passengers two stations provided with train sheds have been constructed. One which is on the main line between Chicago and Joliet

tional outlet south from the subway to a walk of crushed stone leading to the boat house near the dam at the lower end of the larger lake. This dam, which is built with a passageway through it, is probably, from an engineering standpoint, the most interesting feature in the park. It is built entirely of reinforced concrete and has a total length

building has a concrete substructure and the upper portion is finished in stucco. In winter the lower portion is heated and is used by skaters. The three other concrete structures of most interest are the two bridges carrying foot paths over the ravine and the dam forming the upper lake. The spillway of this upper dam is built on a plan similar to that of the larger one and is hollow. The dam has a total length of 140 ft., the spillway being 40 ft. long and 15 ft. high above the bed of the lake. The abutments carry the foundations of a scenic railway structure which crosses the ravine at this point directly over the dam. Both dams were built by the Ambursen Hydraulic Construction Company, of Boston. The larger footbridge consists of three 40-ft. spans, which carry the path at a height of 30 ft. above the level of the lower lake. The smaller bridge, consisting of one 40-ft. span, crosses the headwaters of the upper lake at a height of 15 ft.

The amusement avenue in the northern portion of the park, 650 ft. long and 60 ft. wide, extends south from the upper railway station toward the central portion of the lower lake and terminates in a pine grove adjacent to the scenic railway station. It consists of two walks on either side, 15 ft. wide, with cross-walks connecting the two outer ones so that the central portion is divided into five flower beds measuring

of 170 ft. The spillway is 83 ft. long, and at either end of this are abutments 40 ft. and 47 ft. long, respectively. From the promenade on top of the south abutment a stairway leads

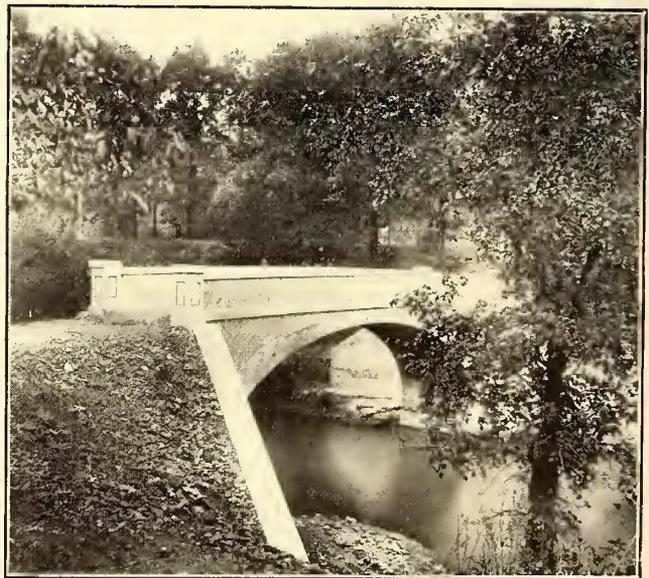
90 ft. x 30 ft., and an isolated space about midway between the two terminals of the avenue, upon which is erected a steel framework 108 ft. high supporting a water



BRIDGE AT THE HEADWATER OF THE LOWER LAKE



DELLWOOD PARK'S REAL SCENIC RAILWAY



UPPER BRIDGE AND CHAUTAUQUA GROUNDS

to a lower walk which, after passing in front of an electric cascade in the abutment under the promenade, enters through an arched opening the electrically lighted passageway under the spillway. The exit of the passageway at the north abutment leads up to a boat house near by. This

tank. The lower portion of this framework is enclosed by a refreshment stand 50 ft. square, and the upper portion by a square building to form the appearance of a lighthouse. The entire structure will be outlined by electric lamps, and as the base of the tower is at the highest elevation of the

park it will be visible for many miles. The upper portion is built entirely of stucco on a steel frame, making a fire-proof structure.

All of the amusement buildings on either side of the avenue are of the same general design. They follow the Mission style of architecture, have tile roofs, and the outer walls are finished in stucco. The largest of these buildings erected at the present time is the dancing pavilion. The floor, which is of 1½-in. maple strips, measures 50 ft. x 100 ft., and has surrounding it a 12-ft. promenade. The building is lighted with twenty-four Nernst lamps. The electric theater on the east side of the avenue has a seating capacity of 250. A band stand near the south end, 25 ft. in diameter, has a sub-structure and floor of concrete. The two other buildings already erected on the avenue are a combination amusement building and a laughing gallery. Before the opening of the coming season, however, there will be erected, facing the amusement avenue, a theater seating 1200 people, and buildings for a merry-go-round and a house of nonsense. The plans for the theater provide for a building 146 ft. long and 87 ft. wide. The proscenium arch will be 21 ft. wide and 20 ft. high. The stage will measure 34 ft. 6 ins. x 60 ft., and will have eight dressing rooms built on either side of it. The foundation will be of concrete and the upper portion of the building will be finished in stucco. The scenic railway station near the south end of the amusement avenue is a substantial shelter so built that the cars can be entered without the necessity of climbing stairways. The

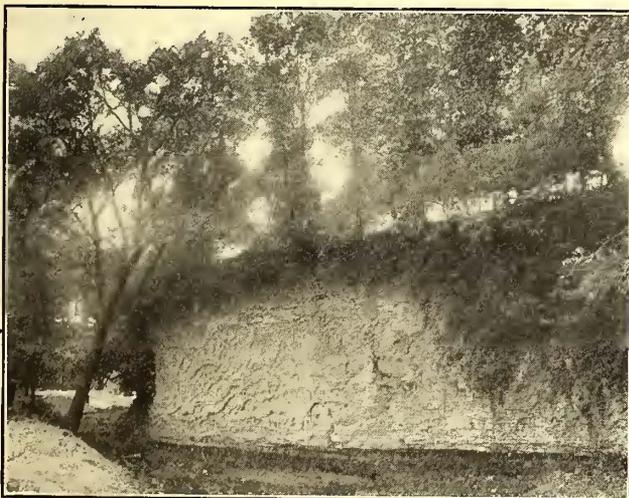
which the cars are pulled just after they leave the station and which is driven by a 10-hp, single-phase, 220-volt motor.

The largest structure in the Chautauqua grounds is a steel auditorium building with a seating capacity of 3500, which was erected particularly for Chautauqua assembly meetings. The building, which was designed and constructed by the Joliet Steel Construction Company, is 150 ft. in diameter and consists of a steel roof framing supported by one center steel column and by about twenty steel columns at the periphery of the frame. On one side of the frame, which



THE DELLWOOD PARK DANCING PAVILION

is covered with a tile roof, is built a stage provided with a music shell having a 40-ft. proscenium arch. Dressing rooms and reception rooms flank the stage on either side. The structure is erected on a bowl-shaped plot of ground sloping toward the stage, so that all of the seats at an equal distance



THE CLIFFS, DELLWOOD PARK

railway well deserves the name as, unlike most others, it is surrounded by natural scenery. It traverses the wooded parts of the grounds, crosses the ravine over the upper dam, passes under the larger of the two concrete bridges, and recrosses the ravine at a point where the bluffs on either side are almost 30 ft. high. It then skirts the rock walls of the ravine to a point 200 ft. from the starting point, where the cars are carried up an incline by an endless chain hoist to the station. The railway has a total length of 200 ft. In addition to the main hoist, which is driven by a 30-hp, three-phase, 2300-volt motor, there is a smaller hoist up



EXIT OF SUBWAY INTO DELLWOOD PARK

from the stage have the same level. The athletic ground is provided with a baseball diamond and a one-quarter-mile cinder running track. Fronting on these is a steel-frame grand stand with tile roof having a seating capacity of 1000 and the bleachers 700 people.

The park is lighted by 80 General Electric magnetite arc lamps, about 60 Nernst lamps and about 5000 incandescent lamps. Current for these and for the motors in the park as well is supplied at 2300 volts and 60 cycles to a sub-station outside the park enclosure and opposite the lower railway station. The sub-station, which measures 16 ft. x 20 ft. and

is constructed with buff pressed brick and tile roof, contains two 50-light General Electric mercury arc rectifiers and a switchboard consisting of three panels. All of the wiring in the park except that through the wooded portions is carried in underground ducts consisting of bituminized fiber conduits laid in cement. The magnetite lamps are employed in lighting the amusement avenue and the walks leading to it. These lamps are suspended on iron poles having ornamental iron brackets.

Complete water, gas and sewer systems are provided throughout the grounds. Eight-inch water mains extend



AUDITORIUM, CHAUTAUQUA GROUNDS

through those portions of the grounds on which buildings are located, and to these are connected fire hydrants and drinking fountains at frequent intervals and all of the refreshment stands and toilet rooms. From an artesian well equipped with a motor-driven deep-well pump having a capacity of 200 gallons per minute, water for the system is pumped into a wooden tank of 50,000 gallons capacity. This is supported on a steel tower 75 ft. high which, as has already been stated, is located at the center of the amusement



STATION OF THE SCENIC RAILWAY

avenue. The sewerage system, which has connections with the theater building, refreshment stands and toilet rooms, extends through the park and empties into the Illinois and Michigan Canal.

The entire park is enclosed with a 72-in. wire fence having reinforced concrete posts. In all 1500 posts were used, to which number two-thirds are 9 ft. and the remainder 7 ft. long. The longer ones were made at a total cost of about 65 cents each.

An idea of the extent of the work put upon the grounds may be obtained from the fact that about 5000 cu. yds. of concrete have already been used in the construction of the subway, the buildings, the bridges and the dams, and that

the cost of the park when present plans are completed will be in the neighborhood of \$250,000. The park was constructed by the Dellwood Park Company, a separate organization from the Chicago & Joliet Electric Railway Company, but closely identified with it. General Manager Blackhall of the railway company is also general manager of the park company, and under his supervision work on the park has been pushed rapidly. Construction work was begun in March, 1906, and at the close of the year the park was practically completed. The engineering features of the park were under the direction of A. S. Kibbe, chief engineer of the American Railways Company, of Philadelphia. During the design and construction of the work J. R. Lotz, as resident engineer, had immediate charge of the engineering and concrete work.

### OLYMPIA PARK FOR 1907

Olympia Park will be operated by the owners, the West Penn Railways Company, of Connellsville, Pa., the coming season. O. C. Hartley, of Pittsburg, an experienced park man, has been retained as manager. The park will be put in first-class shape for the coming season, and already dates are being selected by schools, lodges, etc., for their annual meetings. The amusements will be closed on Sundays.

Arrangements have been made for thorough policing of the grounds. Objectionable characters will be excluded and disorder of any sort will be promptly discouraged. Many organizations from distant points are going to spend a day at shady Olympia, coming via the steam railroads.

In the theater will be presented good, up-to-date New York vaudeville attractions with an occasional week of musical comedy or minstrels.

The figure-eight roller coaster, the carrousel and swings will all be there to provide amusement, together with some new features, among which will be a roller skating rink and other attractions not yet settled upon.

### A NEW JERSEY PARK TO BE BETTERED

W. Meredith Dickinson, of Trenton, N. J., and C. H. Oberheide, of New York and Chicago, operating under the name of the Trenton Construction & Amusement Company, have secured the lease on Spring Lake Park, Trenton, from Manager Peter E. Hurley and President John A. Rigg, of the Trenton Street Railway Company, and Peter E. Wurflein, the present lessee, and plans are being prepared for the company which will entail an expenditure of about \$200,000 and result in making Spring Lake very attractive. These plans include the transformation of the lake into a place fit for all kinds of aquatic sports and pastimes. Beautiful boats and launches will be put in the water; the driveway around the lake will be remodeled and thousands of electric lights will be placed around the lake for illuminative and decorative purposes. Mr. Oberheide, under whose direction the new park is to be built, has been connected with a number of the leading parks of the country and still has large interests in several summer resorts. He has gathered ideas from these numerous parks which he intends to use in the new "white city" at Spring Lake. There is to be the largest and best dance pavilion in the State, a fine roller skating rink, scenic railways, vaudeville theater, band stand, shoot the chutes, carrousels, miniature railway and all the other amusement devices popular in the best electric parks in the country. Another feature of the park will be the landscape work.

## THE AMUSEMENT RESORTS OF THE TWIN CITIES— MINNEAPOLIS AND ST. PAUL

BY A. W. WARNOCK

General Passenger Agent, Twin City Rapid Transit Company

The Twin Cities of Minnesota, with a population of about half a million, are not only wonderful cities from a commercial standpoint, but nature has been so generous with her gifts to them as really to entitle them to the name of "The Park Cities of the Northwest."

Minneapolis, "the Flour City," has a cluster of glistening lakes within its limits, and St. Paul, "the City of Seven Hills," is enthroned on the high, rocky cliffs of the deep-gorged Mississippi, which binds the two with its ever-flow-

### ST. PAUL PARKS

Undoubtedly Como Park is the most beautiful city park in the Twin Cities. It embraces 400 acres and is the largest park in the Northwest. In the restful rural loveliness of its natural landscape, with its hills and dales, groves and meadows, and its shining lake nestling in the encircling arms of its tree-clad hills, it has few peers among the parks of America. Here will be found pretty fountains, grassy lawns and flower beds; a curiosity in the shape of a lily pond and a Japanese garden, containing dwarfed trees over 300 years old, as well as rare Japanese plants and shrubs. A large, handsome concrete pavilion affords many entertainment features and band concerts. Como Lake offers delightful boating as well as drives around its winding shores. Como Park is reached from the heart of St. Paul in about



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THE JAPANESE GARDEN AT COMO PARK, ST. PAUL

ing waters. And in and around them there is a great land of Out-of-Doors, of fertile plains, busy villages, rugged ridges, cool forest, sparkling streams and falls, shimmering lakes, pretty country homes, broad farms and spots where Nature is seen in her virginal wildness, all forming scenery of unsurpassed beauty. Such, briefly, is the inadequate description of two cities which appeal to every visitor, whether on business or pleasure bent.

The Twin City Rapid Transit Company operates over 354 miles of high-class up-to-date track in and around Minneapolis, St. Paul and Stillwater, and reaches every lake resort, park and point of interest about the Twin Cities. It has been largely instrumental in building up the parks into the beautiful spots they are to-day. Perhaps a word or two about the different Twin City parks may be interesting to the readers of the *STREET RAILWAY JOURNAL*.

twenty minutes, fare 5 cents, and thousands and thousands of St. Paul people, young and old, journey to it every day during the summer season. It is also well patronized by Minneapolis people.

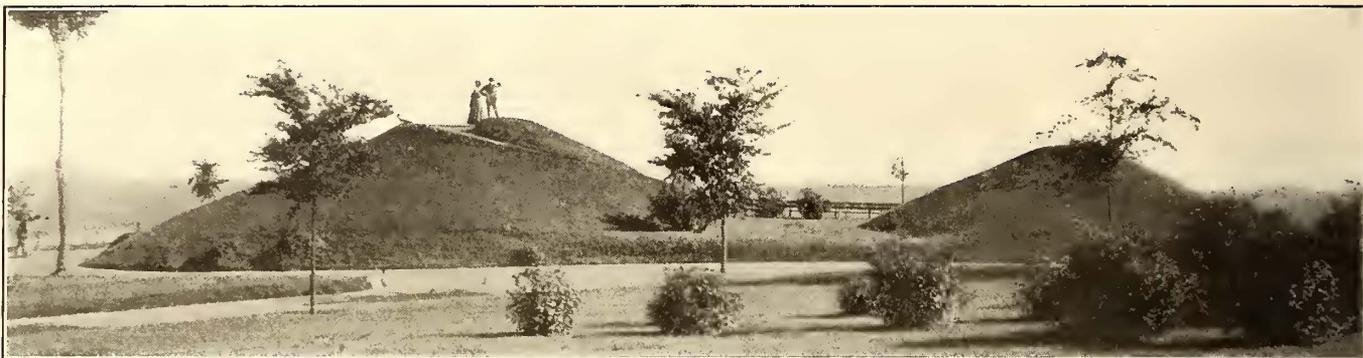
### ST. PAUL'S INDIAN MOUNDS

Occupying 135 acres on the margin and slopes of the lofty bluff at the apex of the elbow of the Mississippi River, the Indian Mounds command far-reaching prospects of the hill-bound valleys of the Mississippi and Minnesota Rivers which are hardly equaled in America in their extent and magnificence. It is without doubt the "Prospect Park" of America. The edge of the bluff, which takes in this wide sweep of view and makes it a portion of the park itself, is crowned with five superb cone-shaped Indian mounds. The Indians visited the mounds every spring, conveying thence

their dead chieftains to inter them in the mounds. At the same time they held their annual grand councils. No attractions of any kind are provided at Indian Mounds except a pavilion for refreshments, but as the fare is only 5 cents from St. Paul, it is a great resort to attract residents as well as strangers. The interesting State Fish Hatchery is adjacent to these mounds.

#### PHALEN PARK AND LAKE

Directly north of Indian Mounds, in another part of St. Paul, is Phalen Park and Lake. Phalen Park is distinctly



INDIAN MOUNDS AT ST. PAUL

an aquatic park, although it might also be called a forest park, for the primeval woods which clothe its western border form one of the most characteristic features and are inviting for picnic parties. There is music and entertainment in the pavilion as well as a collection of Midway entertainments on the island, and the phrase, "Meet me on the



THE PAVILION AT LAKE HARRIET

Island," has come to mean "Meet me for a good time." The fare to Phalen Park from St. Paul is 5 cents.

#### BEAUTIFUL WILDWOOD ON WHITE BEAR LAKE

The trip from St. Paul to beautiful Wildwood, on White Bear Lake, is a charming one. The fare to Wildwood, each way, is 15 cents; time, forty minutes; distance, 15 miles. The trolley trip is through rural scenes whose beauty is the constant wonder of the thousands who travel this highway. You get fine distant views of the Twin Cities as the car rolls along over the broad, panoramic country. The line runs through North St. Paul and past Silver Lake, with pretty farms and ever-changing, verdant pictures on all

sides, and then into Wildwood the Beautiful on the shore of White Bear Lake, where one may find rest, comfort, coolness, and kindred delights of the good, old, care-free summer time. Wildwood is on the south shore of White Bear Lake, and is, as its name signifies, a gem set in the wild wood. It is one of the loveliest spots in the Northwest, and combines all the features of a park, lake and summer resort, offering everything in the way of entertainment to make you forget your troubles. There are fine facilities for bathing, boating, dancing, and last year it had a "Tour of the World" as well as a "Fire Show." Fireworks, band concerts and

other special entertainments are liberally provided, and it is the Mecca for many picnics and excursions from St. Paul as well as Stillwater, which is 8 miles beyond.

#### THE PARKS OF MINNEAPOLIS

The city parks of Minneapolis in point of importance are



MINNEHAHA FALLS AT MINNEAPOLIS

Big Island Park, in Lake Minnetonka; Minnehaha Falls Park and Lake Harriet.

#### BIG ISLAND PARK ON LAKE MINNETONKA

While Big Island Park was opened for two weeks during the season of 1906 and high-class band concerts offered, it was principally as an introductory bow to the public, as the park will not be finished and formally opened until Decoration Day, 1907. When it is completed it will be the most beautiful and up-to-date amusement resort in all America. This is superlative praise, but the facts warrant the statement.

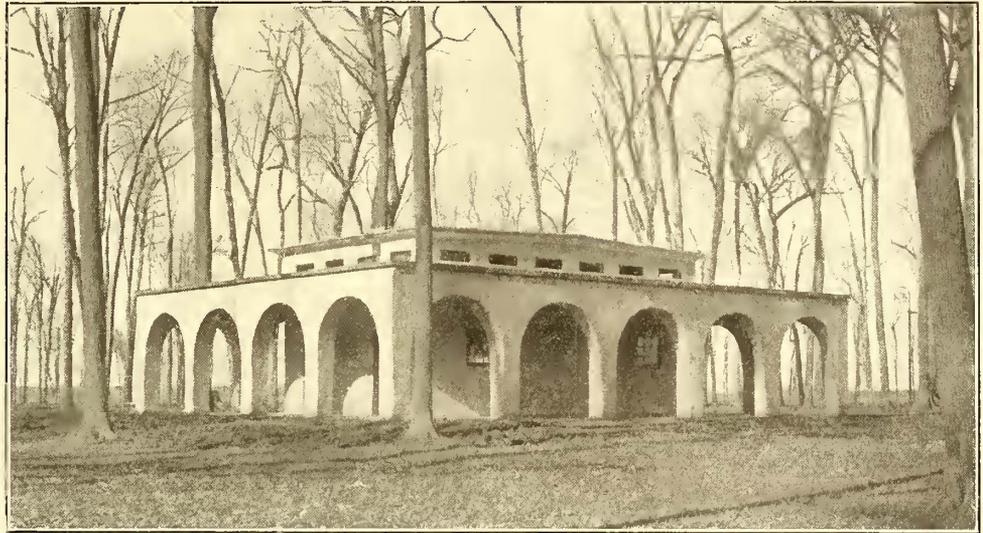
In 1905 the Twin City Rapid Transit Company's lines

were extended from Lake Harriet to Excelsior a distance of 14 miles, through a meadow, lake and hill country. This line was built as good as money and brains could make it. Double tracks of 80-lb. rails are laid on a perfectly graded and ballasted, straight, private right of way, enabling the 300-hp in motors per car to clip off the distance with ease at a mile-a-minute rate. The line ends at Excelsior, on Lake Minnetonka, one of the finest lakes in the Northwest, and which has a shore line of something like 300 miles in extent, lined with handsome homes, pretty bays, inlets and islands, all forming a scene of surpassing beauty. Through cars from the heart of Minneapolis make the run of 18 miles to Excelsior in forty-five minutes, passing Lakes Calhoun and Harriet as well as any number of lakes and ponds between Lake Harriet and Excelsior. A second "Cottage Line" branches off from Hopkins to Deephaven, another point on the lake.

Passengers from Minneapolis on electric cars on arriving at Excelsior disembark at a most attractive dock station, which not only includes a pleasant lunch room and resting gallery, but combines all the good features of a first-class waiting station. These docks are the center of life in Excelsior, and accommodate the Twin City fleet of twelve up-to-date steamboats.

The three large double-end, double-deck ferries, Minne-

resorts on the lake. The capacity of the entire fleet will aggregate over 5000 passengers, and by a system of unusually low fares the Twin City expects to make steamboat riding on Lake Minnetonka an unusually attractive proposition next summer. You can travel between any two points on any one express boat for 10 cents, and the round trip from Excelsior to Big Island Park and return, including ad-



PICNIC KITCHEN, BIG ISLAND PARK (LEFT OF WATER TOWER)

mission to the park, is 10 cents. The rate from any point in Minneapolis by transfer to Big Island Park, including a 2-mile steamboat trip and admission to the park, is 25 cents each way, a distance of 20 to 26 miles.

Boarding the ferries and making a delightful 2-mile trip over to Big Island Park, people will be amazed to see what



STROLLING IN THE WOODS OF BIG ISLAND PARK

apolis, St. Paul and Minnetonka, will be ready for service in the spring, with a carrying capacity each of 1000 passengers. The large excursion steamers Excelsior, Puritan and Plymouth will offer round-trip tours on the lake at an unusually low rate over anything that has been quoted before, and will accommodate over 1300 passengers. The six fast Twin City Express boats, Como, Harriet, Hopkins, Minnehaha, Stillwater and White Bear will perform an express service between Excelsior and all principal cottage

money and genius have accomplished in the matter of transforming what was once a dense wooded island into one of the finest resorts in all America, if not in the world.

Big Island Park comprises approximately 65 acres, and under the magic wand of one of the best landscape artists will resemble a bit of fairyland. Delightfully situated in the center of a splendid inland lake, with an abundance of great trees, grass and inviting nooks, it will offer an ideal place for the tourist or "stay-at-home" to enjoy a few idle

hours, or a family picnic, which is always part of the summer season.

On landing at Big Island Park, visitors will find themselves at the beginning of "the long walk," laid out with flower beds, and leading directly to the electric water tower, from which the supply of water is furnished to the island. This tower is 200 ft. high, built of steel and covered with white cement. It will be studded with many electric lights, presenting a dazzling appearance by day as well as by night. Describing a circle from the dock to the water tower will be a peristyle composed of arches of concrete and tile, all in white and studded with electric lights. At the water tower will be a shelter house from which a fine view of the lake can be had.

Near by will be grouped the amusement features, consisting of an unusually fine coaster railway, enchanted river, penny theater, the merry maze and a number of other clean and inexpensive entertainments, which will delight the old as well as the young. Located conveniently on the trail around the island are also two absolutely fireproof dormitories, one for women and one for men, in which the help on the island will be housed. These dormitories are of the very best and latest construction.

There will also be four picnic kitchens, which will be provided with ranges, and the fires will be maintained by the company at its own expense for picnic purposes, where parties can make coffee and warm their lunches. These kitchens are real architectural triumphs in their way, being modeled after the old Spanish Missions, the same as all the other architecture on the island. By the amusement features will be a pavilion in which lunches and refreshments can be obtained at reasonable rates. Excellent toilet rooms will be located here and there on the island, fitted with the best plumbing.

But there will be two attractions which will appeal probably more thoroughly to the public, one of which is an excellent aquarium and aviary in which will be housed a collection of foreign and domestic fowls and fish, the only collection of the kind ever gathered in the Northwest. Most of the birds have just been purchased in Europe. They were selected by an expert bird fancier.

Near the aviary will be a music casino, built on the highest point of the island overlooking the lake. This casino will be built entirely of steel, concrete and glass, and will contain a splendid rostrum on which a band of sixty pieces may perform comfortably. The Twin City company has arranged for the appearance between June 16 and Sept. 1 of some of the best musical organizations playing in the United States. The auditorium will include a number of private boxes as well as 1500 opera chairs. With a system of curtains the auditorium can be closed up tightly in inclement weather and in fine weather the entire casino opened to the breezes of summer.

A novel feature of the island will be a Dancing Marquee. This will be located next to the casino and will afford a delightful place for those who wish to trip the "light fantastic toe." When it is considered that the music for the lively two-steps and waltzes will be furnished by the famous

organizations playing in the casino, it can well be said that those who love dancing will have such inspiration as has never been offered before in the Northwest.

The Twin City company will make Big Island Park as accessible to St. Paul as to Minneapolis, showing in this way that Big Island Park is strictly a Twin City proposition intended for the enjoyment of St. Paul people as well as those of the nearer city of Minneapolis.

During 1906, the first summer of the Twin City Service on Minnetonka, there were any number of private and public excursions and picnic parties that journeyed to the lake by electric cars and enjoyed the steamboat service. Heretofore the rates on Lake Minnetonka were almost prohibitive, the round trip of the lake being 50 cents, whereas the Twin City company has cut the rate to 25 cents.

Experts who have traveled the world over concede that the Twin City company has the most wonderful proposition they have ever seen. It is not the intention to make Big Island Park a noisy Coney Island, but a delightful place



MAIN DECK OF EXPRESS BOAT, LOOKING AFT

for those who love beautiful trees and coolness, yet with enough entertainment given them to help while away the summer days. Everything connected with Big Island Park will be operated on the highest plane possible.

#### MINNEHAHA FALLS AND PARK

Minnehaha Falls, immortalized by Longfellow, is truly a gem that is unapproached. No cascade has ever been so celebrated in American poetry, and none claims a surer charm for the visitor. The falls are about 40 ft. high, and the whole region about them has been made accessible by rustic paths and bridges. The falls are maintained in their original beauty in the heart of the largest park of Minneapolis, consisting of over 100 acres of hill and dale. Below the pretty falls, which "laugh and leap into the valley," the creek flows through a deep glen for half a mile to the Mississippi. At Minnehaha Falls is the old Stevens house, the first erected on the west side of Minneapolis, in 1850. On the other side of the glen is the pavilion and a good collection of wild animals, always interesting to young and old. Flowers, foliage, shrubs and velvety lawns make Minnehaha Park most beautiful and at-

tractive. The trip from Minneapolis to Fort Snelling and Minnehaha Falls is a pleasant one and the rate of fare is 5 cents. Minnehaha Falls is generally made the stopping off point for visitors en route to Fort Snelling, which is 3 miles below and reached by electric cars.

Fort Snelling is beautifully located at the junction of the Mississippi and Minnesota Rivers, and while there is no through line from St. Paul to Minneapolis at the present time via Fort Snelling, the line from Minneapolis ends at Fort Snelling on one side of the river and the line from St. Paul ends on the other side of the river, so that there is only a short distance to walk between the two lines, practically offering a fourth interurban line between St. Paul and Minneapolis.

#### LAKE HARRIET

Lake Harriet is on the main Minnetonka line between Minneapolis and Excelsior and Deephaven, and is a most picturesque resort, offering plenty of entertainment, boating,



EXPRESS BOAT "HOPKINS" FOR TWIN CITY PARK SERVICE

bathing, electric launch trips and band concerts. There are many places in the woods in which to enjoy a picnic or a few lazy, pleasant hours, and the beautiful parkways and terraced drives around the lake show a constantly changing picture of life. It is one of the best scenic gems of which any city may boast.

#### GENERAL PLANS FOR DEVELOPING BUSINESS

It can thus be seen that the "Twin City Lines" have an unusual opportunity in the way of resorts for patrons, and the general policy followed is to bring business from the logical centers. That is to say, there is a certain class of business in St. Paul that wishes to be moved only to St. Paul local parks, Como, Indian Mounds and Phalen. There is another class of business that prefers another trip from St. Paul, and Wildwood is their ultimate destination. In Minneapolis, there is a certain class of business that naturally gravitates to Lake Harriet, and every day there is a constant stream of travel to Minnehaha Falls, which is probably the most popular resort in the Twin Cities. The advertising, if the term may be used, given it by the late

Mr. Longfellow, certainly makes it the one place visitors to the Twin Cities want to see first of all.

Big Island Park, of course, is a brand new proposition, and at this time I am unable to make a prophecy for it other than one of success. It has all the elements, but of course, as the rate of fare is somewhat higher than to the city parks, it will be a matter of persistent advertising and education to bring the volume of business to it.

We will maintain a handsome city ticket office in Minneapolis, from which our Minnetonka cars depart, and which will also be an information bureau where passengers can secure folders, time tables and other information.

In the matter of publications this year, we will issue two very elaborate folders. A new edition of "Twin City Trolley Trips," a 48-page folder, printed on the finest kind of paper, containing a color map in the center, of our entire system and replated with handsome engravings of scenes along our lines will be one. Last fall we had all the principal points of interest on our entire system photographed, and we have now a collection of 200 of most beautiful electric car pictures. My theory has been that an electric car view should contain either a piece of track or a car somewhere in the picture. Suppose we have a picture of a pretty lake, and put in small print under it "Silver Lake on the Twin City Lines." The general idea is that the lake may be on the line or it may be some distance from the line, but my theory has been that if you can show at a glance that this lake can be seen from the car window it makes it doubly attractive. Accordingly, every one of our pictures has cars or bits of track in some parts of its makeup.

Our Twin City Trolley Trips folders educate people to travel over our entire system, and by means of little charts we believe we are developing the trolley instinct in residents as well as strangers. Last year we distributed vast quantities of these folders, a great many being mailed to all parts of the United States, which, of course, makes good advertising.

Another folder we will issue this year will be a 20-page folder entitled: "Airship View of Beautiful Big Island Park and Lake Minnetonka." Besides an attractive assortment of pictures of our steamboats and Big Island Park, one side of the folder will contain a large map 31 ins. wide and 9 ins. deep, being a panoramic map of Lake Minnetonka and Big Island Park, taken approximately from a point 1000 ft. above the Dock Station at Excelsior. We have had this prepared with the utmost care, and it will be a very attractive relief map, showing at a glance how people from the Twin Cities can reach our docks at Excelsior, where they change to our boats for all principal places of interest around the lake. It is a stunning picture everybody is anxious to keep.

We also furnish time tables and have arranged to take large quantities of space of display advertising in all the daily papers in Minneapolis and St. Paul, in which we will be represented every day during the season of June 1 to Sept. 15. We have also found cards displayed in the side windows of our cars very effective advertising. These cards measure 24 ins. wide by 13¾ ins. deep and are printed on both sides, being read by passengers inside the car as well as outside the car. We have eight of these spaces in use in the summer time in each car, four on each side, and divide them among the various parks, with a change of copy frequently—about once every two weeks. During the past winter we have used tin signs hanging on our back vestibule, advising passengers where free skating is to be had, and as all our parks offer this pleasure we are thus giving

information that the public appreciates. We confine ourselves largely to these four forms of publicity, and returns show that the methods we have pursued will be very effective. Of course, what we will do in the future we are unable to say just now, but the fact remains that we will do what we consider the sane and sensible thing to promote business for the various resorts. There is naturally a stream of business to the city parks which will take care of itself, but to Wildwood and Big Island, where the fare is higher, there must naturally be made a great deal of special effort. We will devote great efforts to induce clubs, lodges and societies to go to Big Island Park, and by sending them folders, maps and other information about the island we hope to get the people to work up considerable enthusiasm to take their excursions and picnics to that resort.

As I said before, the future is all before Big Island Park, and I cannot tell you the extent of its wonderful success this coming year, but that it will be a wonderful success there is no room for argument. Our Minnetonka rail lines, boat lines and park represent a great investment, and with energy back of it all they spell only Success!

### WINTER PLEASURE TRAFFIC ON THE BOSTON & NORTHERN STREET RAILWAY

One of the reasonable objections urged against pleasure park business by street railway companies is the one based on the fact that in northern climates the park property is used for only a few months in the year, so if the returns are not very large in that short period the investment is un-

possible to use them for ice skating. By enclosing the dancing pavilions and similar structures and heating them, sufficient accommodations can be furnished to the winter visitors for rest and refreshment.

One effective way of securing traffic in cold weather is the building of toboggan slides. This idea has been taken up by the Boston & Northern and Old Colony Street Railway Companies under the direction of H. A. Faulkner, passenger

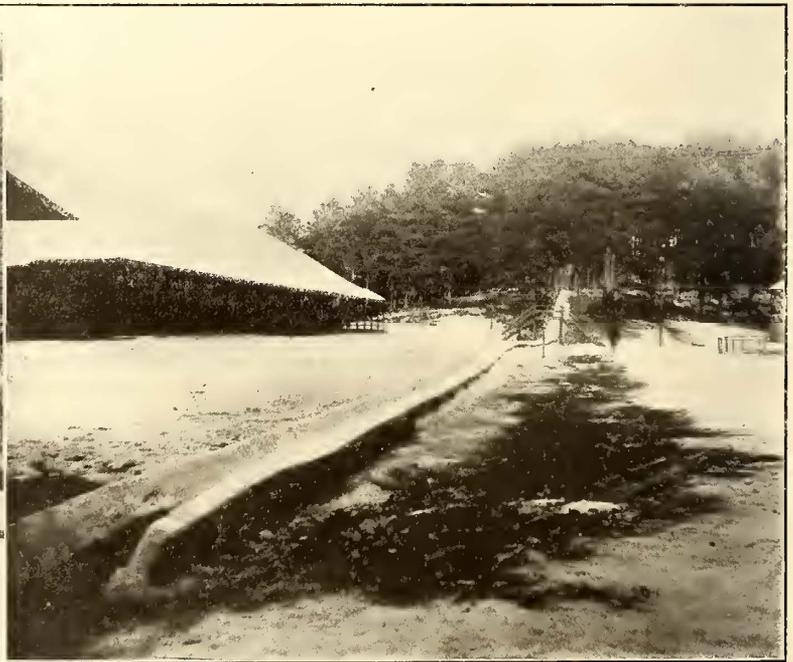


TOBOGGAN SHUTE AT HIGHLAND PARK, BROCKTON, MASS.

agent of the company. For this season the companies have built toboggan slides and skating places at Lakeview Park, Lowell; The Pines, near Haverhill; Highland Park, at Brockton, and Sabbatia Park, at Taunton. Three of these slides are shown in the accompanying illustrations. The



TOBOGGAN SHUTE AT LAKEVIEW PARK, LOWELL, MASS.



TOBOGGAN SLIDE AT THE PINES, HAVERHILL, MASS.

profitable. This of course applies also to the lines built to the parks, which often do not carry much traffic outside of the summer months. Within the last few seasons, however, a number of companies have devised several methods of making use of their parks during the winter, and several of them have met with very encouraging returns. Most cases these parks are furnished with lakes so that it is

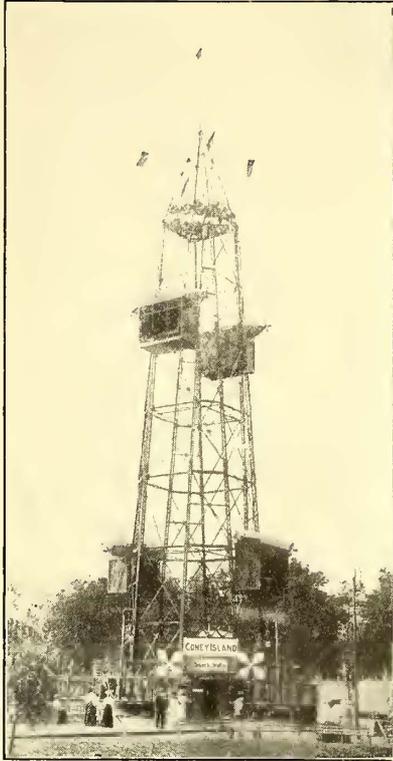
toboggan at The Pines is a particularly fine one, the slide being about 750 ft. long and covered in sixteen seconds.

The recent cold weather in New England has brought out great crowds to all of the parks mentioned, and no doubt the increased business will soon repay the initial outlay. Undoubtedly, increased familiarity with this exhilarating sport will bring out even larger numbers next winter.

## THE EQUIPMENT OF PLEASURE RESORTS

Many persons have deprecated the immense investment which is being made in street railway parks and the expenditure on them by the public as evidences of the loss of useful capital to the country. Viewed in the light that such parks were not common ten or fifteen years ago, they may be luxuries; considered more broadly, however, the modern street railway park is a direct benefit to the community in whose neighborhood it is. The crowded condition of the modern city, its stifling heat during the summer and the amount of nervous energy required in modern business make rest and recreation during the heated season a necessity, and a street railway park will many times return to the community at large in health the expenditure upon it. This does not imply that every city, regardless of its size, requires a Luna Park, a Dreamland or a White City. Their establishment depends upon the extent of the attendance possible. But practically every town or city, large enough to support an electric railway, can also support some kind of a picnic park, with attractions suitable to the number and habits of the people in the community. And as the question of transportation to such a park is naturally allied with the management of the park itself, the association of the railway and park interests have been brought about naturally.

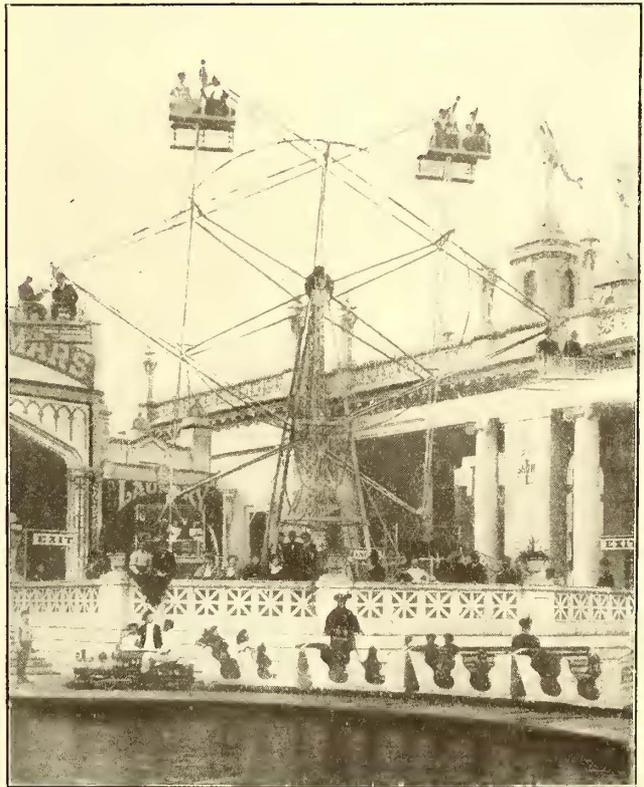
The proper attractions to install in a park are quite as important as any other portion of the problem. Some pastimes, like the carrousel in its various forms, seem to be always popular; others, like roller skating, which at the present is rapidly returning to favor, appear in the past to have followed waves of popular favor. In other cases it is only the latest and newest which will draw the crowds. A thorough discussion of park resorts would not be complete without an account of the new apparatus and devices which the manufacturers who cater to this class of trade are preparing to present this year to electric railway companies. Several of these forms of amusement are entirely novel, others are improvements of well-known and well-tried devices. In some cases, as in the circle swing, which is only two or three years old, the popularity of the idea has led to the construction of a variety of forms differing in various points. It is impossible to enumerate all of the attractions which will be presented at the various street railway parks during the year 1907, but an attempt has been made in the following pages to gather together some of those which have already been announced to the trade.



REVOLVING AIR-SHIP TOWER

## AERIAL AMUSEMENTS

Many novel attractions have been devised from time to time with the end in view of affording sensation by whirling people through space at a greater or less distance from the earth, and have proved eminently successful as amusement features, mainly, no doubt, because of the peculiar fascination which attaches to the subject of aerial navigation. In fact, some of these devices have been designed with the very idea in mind of affording the sensation of flying. One such device is the revolving airship tower, made by the Revolving Airship Tower Company, of Chicago, Ill. It is built of steel, 15 ft. or more in height, mounted on a revolving platform about 150 ft. in circumference, operating four imitation airships. Each ship is raised and lowered by means of four steel cables, three-quarters of an inch thick, each cable having a breaking strain of 20,000 lbs. As the ships are raised and lowered the tower slowly revolves, giving those who are riding therein a sensation of flying through the air, the occupants seeing none of the ropes, mechanism or tower by which the ships are operated. The illusion of riding in airships is further increased by equipping the back part of each car with a large mirror which reflects the landscape and the sky through the open front of the car, together with the revolving fan propellers, which make it appear as though the cars were double-sided and open, and also suspended from a cigar-shaped balloon. Each car will seat sixteen passengers, and it takes



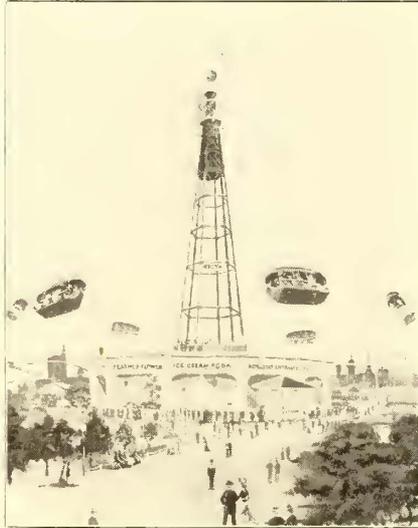
THE WHIRLING STAR

four minutes to complete the round trip. The tower in Sans Souci Park, Chicago, has been so successful that the park management is negotiating now for its purchase.

Another novel aerial amusement feature is the whirling star. The star itself revolves on a horizontal axis, supported by two A-frames, one at each end of the axle of the structure. These A-frames rest on a turntable platform and the circular platform and the turntable constantly revolve, so that passengers step on and off the rotating plat-

form while it is in motion. This does not necessitate shutting down the apparatus while the cars are being loaded and unloaded. Passengers turn around two ways in the air while going up and down; at the same time the cars are so arranged that the passengers have an unobstructed view of the surroundings. There are twelve cars in all, each carrying four persons. The average ride is about four minutes. At night, the six-pointed star revolving on two axes can be made especially attractive by suitable illumination by incandescent lamps. This machine is built by the National Concessions Company, of Chicago, which installed the first star in the White City, Chicago.

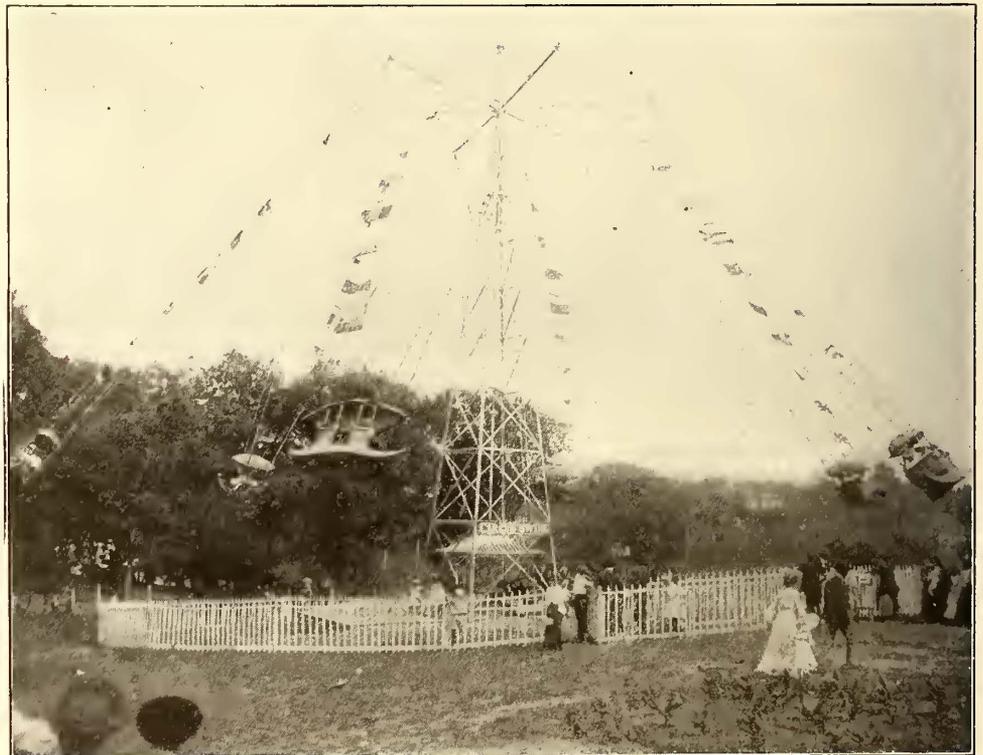
The aerostat, made by the Federal Construction Company, of Chicago, is a new type of circular swing built upon lines radically different from the swings of the customary type. The tower itself consists of a six-leg steel structure, gusset-plate bridge construction thoroughly braced and anchored to the foundation. Over the top of this structure is telescoped a six-armed cantilever steel-crown truss, in such a manner that the entire weight of the cars, passengers and crown truss is carried from the under side of top supports. The tower part of crown truss, to which the gear wheel is attached, is provided with anti-friction roller bearings to guide it while revolving. This crown truss, with its load, is supported on 154 one-in. steel balls traveling between two case-hardened ground-steel plates. Each ball, by the use of a special ball retainer, travels in its own individual path, reducing friction to a minimum. A  $7\frac{1}{2}$ -hp motor which is located in the top of the tower, directly under the crown truss, is used as motive power. The swing may be brought to full speed in less than sixty seconds, and brought from full speed to a dead stop without discomfort to the passengers in thirty seconds, although no brakes are used. The structure weighs  $11\frac{1}{2}$  tons. The telescoping of the crown truss over the tower prevents any possibility of accident, while the method of operation is so simple as to be practically fool-proof. The controlling and driving mechanism of the



THE AEROSTAT

swing is self-regulating to the extent that no careless act of an operator, in suddenly throwing on or off the current, would affect the safety of the passengers or structure in any manner. A thirty-six passenger swing is shown in the accompanying illustration. The Federal Construction Company, which is the manufacturer of the aerostat, has undertaken the task of introducing a new feature each year, its efforts resulting in such popular attractions as the Katzenjammer Castle, velvet coaster and "Elter," besides the aerostat. Last season the company originated and introduced the aquatic mystery, "Elter," which was put on at the "Chutes," June 9, and ran through the season, growing stronger each succeeding week. The general interest and the various theories advanced regarding this mystery prompted the Chicago "American" to offer a prize of \$150 for the best solution, and of a total of more than 8000 answers, less than 15 were eligible to competition. The company is now prepared to furnish plans, specifications and equipment at a very reasonable sum, for producing this act. As a distinctly new attraction for this year the company is building for Riverview Park, of Chicago, the largest water chute and velvet coaster ever constructed. This is a chute of new type that presents an unbroken surface of rippling water, which under the many incandescent lamps will glare with dazzling brilliance.

Another device that approximates in its operation aerial navigation is the circle swing flying machine or airship, made by the Travers Circle Swing Company, of New York. The device is in reality a stationary or captive airship, which provides the passenger with flight through the air at the rate of 25 to 30 m. p. h., and at an elevation of about 20 to



A TYPE OF CIRCLE SWING

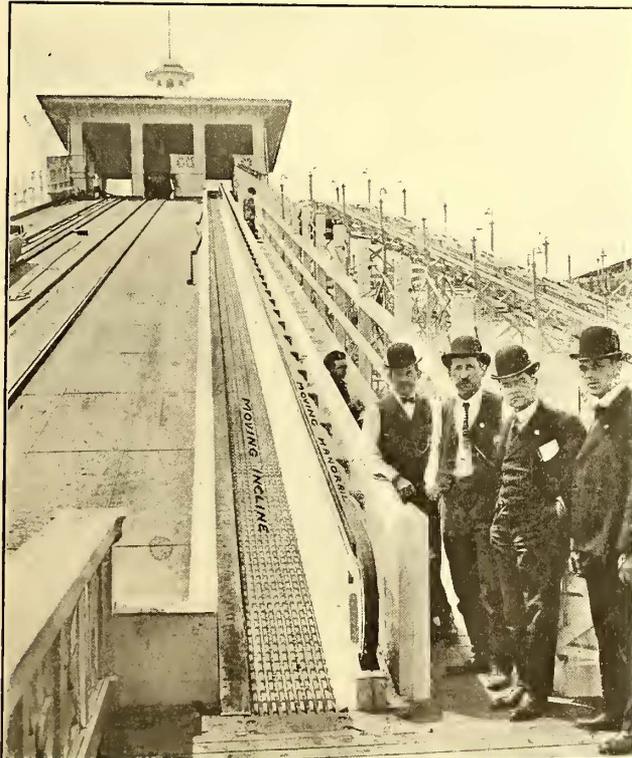
25 ft. from the ground. The swing is a steel structure, towering up 60 or 80 ft. in height, and has been tested to five or six times its full-load capacity. The structure is beautifully illuminated with from 500 to 1000 electric lamps, which, when revolving at night present the appearance of whirling rings of flame, and at a distance resemble an enormous sun-

burst. The 120 flags which are unfurled to the breeze during the day attract the attention and play upon the imagination and curiosity of all. The cars are built on the plan of an airship, the frame being of steel decorated with beautiful reed-work, which gives an artistic finish. They start from the ground level, revolving about the tower at an increasing rate of speed, and as they raise higher and higher an excellent view is given of the surrounding country and scenery. The Travers Company has built more than 120 of these swings, and in not a single instance has an accident been reported. Many of the swings in use in street railway parks are operated by the street railway company or by the Travers Company, which not only sells these devices but owns and operates twenty-five individual installations throughout the country.

Swings have also always been attractive. A company making a specialty of swings is A. Birch's Sons Company, of Elizabethtown, Pa. The company fits its swings with reclining chairs, thus affording extreme comfort. There are no shearing points in these swings and they are said to possess no element of danger.

THE MOVING STAIRWAY AND INCREASED EARNINGS

The moving stairway while not in itself an amusement device greatly augments the earning capacity of such attractions as chutes, scenic railways, etc., by increasing their capacity and removing the "rush" sometimes incident to the operation of park features. A moving stairway that has been developed with this service in mind and is now in use in a number of parks is made by the Reno Inclined Elevator



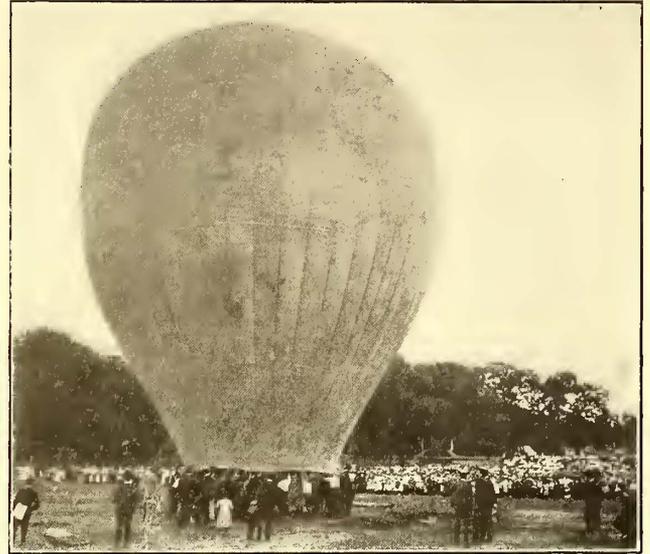
THE MOVING STAIRWAY

Company, of New York. As regards cost of operation, the manufacturer says actual tests set the figure at 1 cent to elevate 500 people to a height of 18 ft. The machines are built of various types, single file, carrying passengers either up or down, double file, carrying two lines of passengers either up or down, and "duplex," carrying passengers up and down simultaneously. The stairways can be installed in existing

structures as their weight is not abnormal. An important improvement lately added to these machines is a step-tread, which enables the passenger to stand upon the moving treads with greater ease and comfort than in the old style. Reno elevators have been in operation upwards of eight years, and it is stated have the extraordinary record of operating without a single personal accident to a passenger.

THEATRICALS

For the busy man whose park property does not permit of his having a regular park manager, and for the park man-



CROWDS WAITING FOR BALLOON TO ASCEND

ager who wishes to change the program of his attractions from time to time, so as to offer new and striking features to induce traffic, there are available a number of agencies furnishing attractions that offer an excellent opportunity for the selection of such attraction or attractions as will meet local requirements best. Arrangement can be made with some of these companies for special short-time engagement or for a change of bill weekly. In fact, the advantages of the system make it possible to meet almost any contingency that may arise. These companies by assuring continuous service to their employees are able to secure better features and a higher class of artist than is possible where the tenure of office of the employee is uncertain. An instance that this is true is furnished by the case of the Prudential Vaudeville Exchange, of New York, which controls more than 200 attractions, covering all the various phases of the entertainment business and including the best artists in their respective lines. Out of this great number of attractions those can be engaged which suit the individual requirements of the manager, governed by the people to whom he is catering for patronage.

One of the most perplexing problems that usually confront the park manager is booking a free attraction. There are many so-called death-defying acts to choose from, but few of them for some reason or another are available. An attraction of this kind, however, which is sufficiently spectacular when performed properly to attract and hold large crowds is the hot-air balloon and parachute leaping, which by the very simplicity of its equipment makes it really adaptable where other attractions would be impossible because of the outlay of installation. A balloon can be seen for miles, and the spectacular descent of the aeronaut dangling beneath a frail parachute never fails to attract atten-

tion. Though the performance in itself is old, many novelties have been added to it from time to time during the past ten years, and it is on the whole more popular than ever, especially because there attaches to each performance a seeming uncertainty as to the outcome. Accidents, however, are rare among experienced balloonists. Compared as to earning capacity with some costly foreign introductions of feats of daring, balloon ascensions are a much better business undertaking. As showing strikingly the interest that attaches to the balloon ascension is reproduced a photograph of J. Mack, of Trenton, N. J., who makes a specialty of ascensions, preparing to "go up."

#### THE ROLLER-SKATING RINK

From all accounts the roller skating rinks established last year, following the revival of this pastime, were very successful, and the demand this year promises to be greater than ever, the fad having been especially pronounced during the past winter in the large cities. To add to the attractiveness of the sport, and especially to establish it as a permanent institution, and therefore continuous source of revenue, the plan has been adopted of holding competitions for amateurs and professionals, and also of engaging as a special feature from time to time professional and amateur fancy skaters. In this way there are attracted to the park or rink many persons who, while not perhaps skaters themselves, swell the admission fees and become a source of revenue by patronizing other attractions. From the experience of the past seasons it would seem that park managers can often provide this entertainment to advantage. Where a building is not available that can be easily converted into a rink it may be found both feasible and profitable to erect a special building just as a number of companies did last year. Local conditions govern in each case, however, and the questions of admission and prices of skates must be decided by each manager for himself. Two instances are on record for last year where the charges were 25 cents for admission and skates and 10 cents for the use of skates and no admission fee. An element that should enter into any consideration of prices is the cost of transportation. Efficient management will result in the suppression of disorderly persons here just as it has so effectively in the case of the dance pavilion. Of those companies dealing in skates the Union Hardware Company, of Torrington, Conn., reports a large demand for its products, not only from street railway companies themselves, but from the trade in general. Among the companies it has supplied with skates may be mentioned the New Hampshire Electric Railways, the Lynn & Boston, the Consolidated Railway, Light & Power Company, of Wilmington, N. C., and a number of others. The company makes several different styles of skates for both men and women, with either hermacite or steel rolls as may be desired when ball-bearing models are used, and with hermacite or lignum-vitæ rolls when plain bearing skates are used.

M. C. Henley, of Richmond, Ind., who has been making skates twenty-eight years, also reports an immense business for this season. In fact, the Henley plant, which has a capacity of 2000 pair of skates a day, is working overtime to keep up with orders. Mr. Henley reports that among the shipments made recently were the following:

"The Stadium," Montreal, 1000 pair; Luna Park, City of Mexico, 250 pair; Latrobe Amusement Company, Latrobe and Blairsville, Pa., 1000 pair; Louisville, Ky., 3500 pair; Bishop Clay's Mammoth Rink, Lexington, Ky., 350 pair;

Victoria Rink, Toronto, 600 pair; Lakeside Park Rink, Dayton, 800 pair; two rinks, Johnstown, 1000 pair; Pittsburg, 100 pair; Meridian, Miss., 350 pair; Altoona, 500 pair; Jackson Rink, Jackson, Miss., 200 pair; Cataract Roller Rink and Riverway Rink, Niagara Falls, N. Y., 750 pair; Newark, 500 pair; twenty new rinks within a radius of 100 miles of Pittsburg, 10,000 pair. Shipments have also been made during the past sixty days to not less than two hundred other rinks requiring from 200 to 500 pair each, in addition to a large number of minor rinks all over the country. Although the season is advancing, Mr. Henley reports a rapidly increasing demand for skates.

The Samuel Winslow Skate Manufacturing Company, of Worcester, Mass., also reports a large demand for its various designs of skates. This company has a capacity of 15,000 pair of skates a day. Its product is in use throughout the United States and Canada and in practically every civilized country in the world.

#### THE MINIATURE RAILWAY

Ever since its introduction the miniature railway has been extremely popular, more especially where attractiveness has been added to the route of travel by tunnels and landscape features. An idea that has worked well in this connection is the distribution of improvised cities along the line, the scheme having been tried with success of representing a number of cities such as one would be likely to pass through, for instance, enroute between New York and San Francisco. Distinctive features of the cities, such as the stock yards of Chicago and the furnaces of Pittsburg, can be represented to lend zest to the entertainment. In the cases of parks or expositions covering a considerable area, the miniature railway has frequently been converted into a most handy means of transportation, as witnessed strikingly at the Louisiana Purchase Exposition. The road there was built by Cagney Bros., of New York, who also operate in a number of street railway parks and at Coney Island, Rockaway and other popular resorts. Cagney Bros. make several standard types of apparatus, the rolling stock being usually built for either 15-in. or 22-in. gage. The firm is, however, prepared to contract for equipment for any gages between those mentioned. Cagney Bros. have recently secured the concession for building a line to traverse the Jamestown Exposition grounds, which completes for them the exclusive concessions to all the great expositions in this country. Views of this miniature railway have appeared in former issues.

#### TICKETS

A seemingly small but an important matter in connection with park and amusement features is the subject of tickets. The ideal ticket should be both cheap and legible, every bit as much so as the railroad ticket, which receives the really serious attention it deserves. To entrust the printing of amusement tickets to local printers is generally not a satisfactory way to do, for the plants are not equipped for this class of work, and they are seldom able to do a satisfactory job. Nearly all the ticket makers who cater to the railways have a department where just such work is handled as tickets for amusement attractions, their very organization placing them in a position to meet promptly the requirements of park managers and also to act in emergencies. Then, too, such companies are a valuable asset in a consulting capacity, oftentimes suggesting means for overcoming difficulties in design, etc., as does the Keller Printing Company, of New York, whose organization is such that it can meet most any emergency.

The Rees Printing Company, of Omaha, Neb., also makes roll tickets for amusement parks.

WATER ATTRACTIONS

It is a recognized fact that many of the most successful parks are made attractive by a body of water. There are so many types of amusements which can there be exploited that it would be difficult to list them all, but one feature that is absolutely essential is boating. The canoe and rowboat appeal to certain classes, but there is a goodly number who consider that the labor involved is not in consonance with recreation and pleasure. As for women and children, who after all make up a very large part of park patronage, especially during the morning and early afternoon hours, the canoe and rowboat are not available for them. As the electric launch, in many respects, is best suited for electric railway parks, some particulars of the latest model of the Electric Launch Company, of Bayonne, N. J., will be of interest.

The motor is water tight and constructed to assume the thrust along the armature shaft produced by the propeller. Lubrication is simplified by the use of special metaline bearings. The controller, mounted on the same shaft as the steering wheel, is carefully protected under the forward deck. It is similar to the ordinary street-car type and has five speeds ahead and two astern. The batteries, which have been recently improved, are of a new light-weight type, and are placed under the floor of the launch on special insulated racks, and thus increase the stability of the boat. The mileage and speed of a boat, of course, depend on the number and size of the batteries. The batteries can be charged economically from the trolley circuit, if desired, at a time when the load is light and few cars moving. The operator or pilot of an electric passenger launch need not be more skilled than a motorman, as there is absolutely nothing more to do in the care of the motor than to keep the parts clean and batteries properly charged.



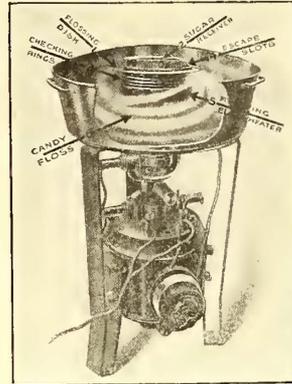
ELECTRIC LAUNCH FOR EXCURSION USE

Operating expenses, of course, cease when the boat is not in service, for there is no loss of energy. The other advantages are absence of odor, smoke, heat and noise. These launches are furnished in sizes from 18 ft. to 65 ft., and a large number are in use.

CANDY AS AN ATTRACTION AND SOURCE OF REVENUE

To appeal to the sweet tooth of the public the candy product must be both pure and attractive. That this is true is instanced in the large sales of candy made to resemble meats

and sold for several seasons now at large attractions, such as Luna Park, Coney Island, at special booths made to resemble butcher's stores. If to the product to be sold can be added some feature of the method of production, then a valuable asset in the shape of a drawing card has been gained. Ordinary taffy-pulling machines may be rigged up



CANDY FLOSS MACHINE

to operate in any one of a great many ways, none of which is without worth as a live exhibit. A device of this kind which is especially attractive is the candy floss machine. The Shaffer Manufacturing Company, of New York, says that with one of its machines 1 lb. of sugar, costing 6 cents, will make twenty bags of candy floss any color or flavor, which sold at 5 cents a bag returns \$1.00. These candy-making machines can be

driven by electric motor or by hand, the hand-power machines being supplied with a gasoline burner. The electric machine needs only to be connected to the electric railway circuit. Material to be used to make candy floss can be varied to suit the taste.

TOBOGGANS, SCENIC RAILWAYS, ETC.

The T. M. Horton Company, of Pittsburg, Pa., builds and operates figure-eight toboggan slides, carrouzels, scenic railways, etc., and does a general contracting business in park equipment. The company has been engaged in the business for fifteen years. Its experience has fully demonstrated that "the better the machine, the better the results." A slight increase in the initial cost usually insures stability

and removes the danger of breakdowns, and by making the amusement more artistic the patronage is increased. The carrouzels made by the T. M. Horton Company are decorated by expert artists and are built to withstand the hardest kind of usage, and the figure-eight toboggan slides and scenic railways are equipped with the latest improvements to insure safety and speed and increase the earning capacity. The pavilions are especially designed to harmonize with the surroundings.

The Ferris wheel is another attractive, inexpensive and neat riding device. It is not expensive to operate and appeals to both old and young. Coming to the notice of park managers a few years ago and recognized as a great money-maker, it has found its way into a great many of the leading parks of this country and abroad. It also affords the same opportunity for lighting effect as some of the more pretentious attractions. A type of wheel extensively in use is the Conderman, built by J. G. Conderman, of Troy, Pa. Mr. Conderman has a number of standard models, but will vary his designs to suit individual requirements.

## EQUIPMENT FOR ARCADES

The new Model "E" mutoscope, manufactured by the American Mutoscope & Biograph Company, of New York, embodies several new features compared with previous models. It has a new iron cabinet finished in silver aluminum, and is much handsomer and more artistic than heretofore. Among other improvements the base of the pedestal has been raised considerably above the floor, giving ample opportunity for cleaning beneath, while there are no rests for children to climb up on and deface. The joining of the cabinet is accomplished in a new manner so that additional rigidity is secured, with considerable saving in weight. Changes have also been made in the upper cabinet. The old style safe, which necessitated opening the cabinet door to collect the cash, has been done away with, and the money now falls direct into a cash drawer at the top of the pedestal, from which it may be readily collected. By means of this improvement the attendant, while able to change the pictures and get at any part of the mechanism to make repairs, has no access to the money. The slot device, whereby the penny first struck an anvil and then bounded to its position, has been changed to a direct contact. The entire mechanism is greatly strengthened; the driving gear is larger, and its contact with the work gear on main shaft wider, insuring greater power with less effort and variation of speed. The friction discs have also been improved, giving greater bearing surface. The coin register, which is supplied when desired, is located at the top of the upper cabinet, in clear view, easily read by electric lamp in the machine.

The automatic weighing machine also is an important acquisition to the arcade and for judicious distribution about the grounds. A company that makes a specialty of this device and other coin-controlled machines is the National Novelty Company, of Minneapolis, Minn. The company reports that perhaps the largest order ever given for automatic weighing machines in the United States has recently been placed with it. This order is for 765 machines for an Eastern company which operates in the railway stations of some of the principal Eastern railways.

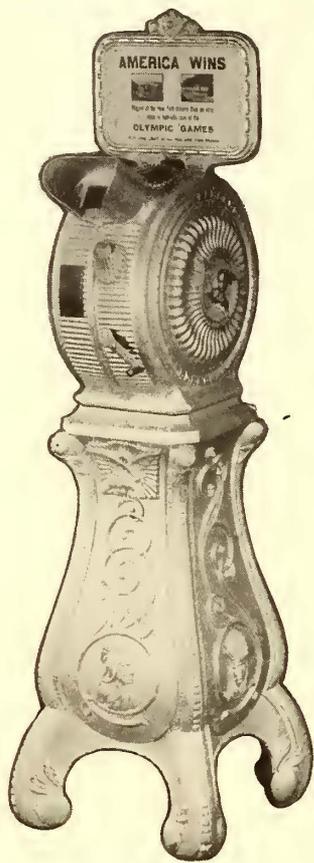
## MOVING PICTURE MACHINES

A moving picture service is exceedingly valuable as a traffic inducer, especially as the cost to install and maintain the necessary equipment is only nominal. It is possible to announce through the daily newspapers, folders distributed from racks on the cars and bulletins in stations that a free moving picture service is being conducted for the special benefit of women and children so as to induce traffic by day,

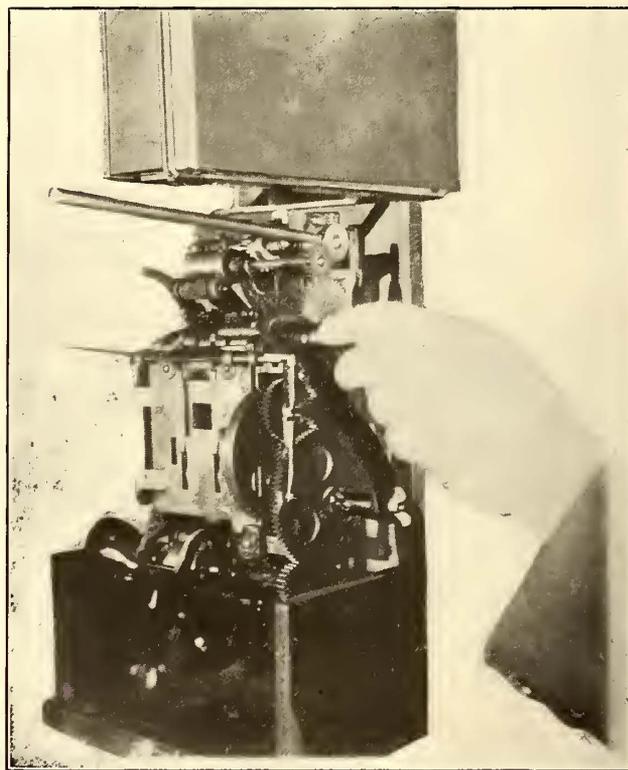
and also to lay stress upon the point that conductors will see to the safety and comfort of both the women and children en route. Week-day evening travel can be worked up in the same way by arranging an attractive program. This is especially true in the case of men, for whom from time to time special concerts could be arranged to include athletic games, boxing bouts, etc., and other subjects that appeal especially to the masculine mind. It must be remembered, too, that the pictures can be shown out of doors. Of course, where the pictures are shown indoors a small admission can be charged, which of itself would result in making the picture entertainment self-supporting and give a small profit besides. Miles Brothers, of New York and San Francisco, conduct a film rental bureau which makes available to subscribers at a small rental practically any subject. In addition, they originate films themselves for the exclusive use of their circuit.

A new automatic shutter is being placed on the Edison exhibition moving picture machine by Harston & Company, New York. This automatic shutter is very simple, and it is claimed that it is an absolute preventive of fire. Every one conversant with moving pictures understands that fires are caused primarily by the operator stopping his film and letting the light rest on it too long. As long as the film is moving, it will not ignite.

The minute the operator releases the handle of a machine equipped with the new shutter, the shutter immediately falls down and covers the aperture through which the film is



THE MUTOSCOPE



PICTURE MACHINE WITH SHUTTER OPEN

passing. There is an air space of about an inch between the shutter and the film which makes it absolutely impossible for the film to become heated. The first turn of the handle raises the shutter, as shown in the accompanying illustration. Harston & Company's film rental service this coming season for parks will be very complete. They are sending at the present time to every park manager lists of the latest films as fast as they are issued, from which selection can be made.

## ELECTRIC SIGNS AND LAMPS

For directing attention to amusement enterprises the electric sign is a most effective medium, its value in this line probably exceeding its effectiveness as an advertising medium for exploiting commercial articles, because of the opportunities which are afforded in parks for cooperation and harmonious use of lighting effects. For instance, signs



A THEATER SIGN

may be standardized, a distinctive color scheme being adopted for the park and others for individual exhibitors, where concessions are granted. That a striking sign impresses people who ordinarily are given to discounting the personal appeal of a representative of an attraction there is no doubt. Another advantage that it possesses is that it is constantly in service, a most important consideration. A company that has made a specialty of signs for this class of work is the Haller Machine Company, of Chicago, which announces this year new attractions in the shape of two 5-cent theater signs, one with a lightning flash and the other with a fire-wheel revolving around the 5-cent panel. This sign, which can be modified to suit any conditions, is especially advantageous, because it performs the double service of calling attention to the attraction and making plain the price of admission.

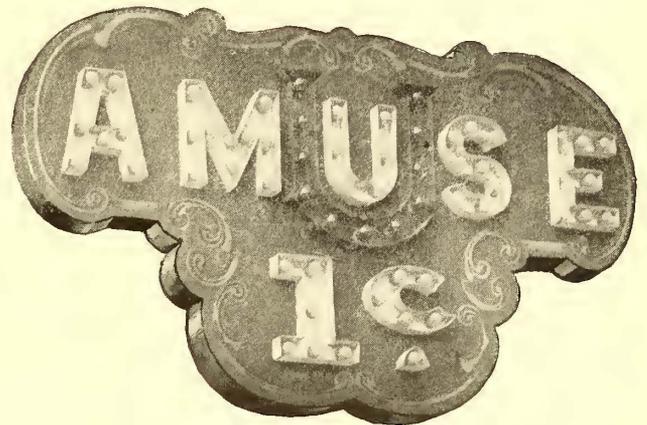
Effective illumination, however, is dependent very largely on lamp efficiency. Efficient lamps mean small renewals and low operating cost. Where dependence is had upon street railway circuits for power, fluctuations are violent, and the life of the lamps likely to be seriously lessened unless precautions are taken in selecting the type of lamp. A company that caters especially to the street railway trade is the Buckeye Electric Company, of Cleveland, which has designed a special 4-watt 16-cp series railway lamp expressly for street railway work, and which is in service on the largest street railway systems in the United States, among them the Lehigh Valley Traction Company, the United Railroads of San Francisco, the Memphis Street Railway and many others. The company also gives special attention to the summer park business, its lamps being in use at Pittsburgh Luna Park, Cleveland Luna Park, the Ingersoll Parks, American Amusement Company's enterprises and many others.

The A. & W. Electric Sign Company, of Cleveland, is a firm that has supplied a large number of amusement parks with up-to-date and attractive display signs. All of its work is guaranteed for a term of two years. The company says its special method of groove construction makes it possible to operate with about 50 per cent less current than ordinarily, and with better results than when projecting lamp letters are used. Among other things the company says that its method makes possible especially soft and pretty effects which do not confuse or tire the eye; that the confining of the light to the groove sharpens the outline of the letter; that the prettiest colored letters imaginable are produced by its lamps with frosted capping. The company also has special facilities for reproducing any trade mark.

## THE DISTINCTLY SPECTACULAR SCENE

Purely spectacular amusements which have for their basis legend some notable public occurrence, some impressive scene from nature or some catastrophe have a peculiar fascination, as strikingly instanced in the phenomenal successes typifying the extremes in this feature, "Creation," or the story of the beginning of the world, and the "Johnstown Flood," a distressing calamity, both of which after their introduction at great expositions had several successful seasons at Coney Island. For the coming season a distinctly new departure in this line is announced by the Cascade Amusement Company, to be presented at the new Electric Park in Kansas City, Mo. It is to be a reproduction of the spectacle of Niagara. The bluffs on either side will be fashioned after famous caves, mines, etc., and will have other entertaining features. The falls will be 50 ft. long and 25 ft. high, and have a discharge of from 5000 to 8000 gals. of water per minute. On either side in crevices in bluffs automatic colored lights will play on the falling water in the evening, and will add attractiveness to the apparatus with other electrical effects. The walks will extend through a tunnel on a lower rocky ledge under or back of the falling water, through the caves, etc., on the far side and back through the other bluff and caves and exit. There is no limit to the capacity of this device, and the outer attractiveness will no doubt draw the crowds, as the electrical effects on the falling water can be easily imagined.

An amusement that will be both attractive and educational is proposed by the Daniels Scenic Studios, of Chicago, which offers an electrical wonder house. The exterior of the building will be strikingly illuminated in about fifteen different ways, flaming arc, Nernst, Moore and other



A GENERAL AMUSEMENT SIGN

lamps all being used to attain striking effects. In addition there will be a slate rigged for high-tension discharges to attract and hold attention. As the amusement features there will be offered demonstrations of the wireless telegraph, the wireless telephone, the electric furnace and a number of other purely commercial applications of electricity, to which there attaches among the general public the feeling of something peculiarly mysterious. These processes it is proposed briefly to explain. As a finale there will be introduced a dueling scene in which electricity will be made to play an important part.

The White & Langever "Steamboat Tours of the World" is another scenic amusement. It is essentially a gigantic marine illusion apparatus, covering a space 75 ft. x 200 ft. and costing about \$6,000 to construct. The front is a full-size reproduction of a steamboat, with pilot house, smokestacks, bells, searchlight and caliope or band. The boat

floats through a cement tank, forming a canal, to its destination, where the passengers are invited into the cabin and so onto the rear boat (enclosed in a large building). This rear boat also sets in a tank of water and rocks sideways and endways. Paddles beat the water underneath, breezes are made to blow, and the illusion completed with the aid of moving pictures. The "exits" are on the sides. One of the devices is now being erected by H. A. Dorsey at the Dominion Park Company's Park at Toronto, Can., and White & Langever, of Ft. Worth, Tex., the patentees, are building another at Pine Beach, Va., to be a leading feature there during the exposition at Jamestown.

#### BANDS

On tour this season under the management of Harry C. Head, of New York, are Restorff and his band. Mr. Restorff has filled engagements at the principal theaters in Kiel, Munich, Hamburg, Cologne and other large European cities. In 1880 Mr. Restorff was appointed oboe player in Gilmore's famous band, and since then he has been associated with such bands as Theodore Thomas' Orchestra, Innes' Band, Liberati's and Brooks' Chicago Marine Band. He is a soloist on different instruments, an excellent conductor, and has composed many stirring marches and other characteristic pieces. Before the opening of the Louisiana Purchase Exposition at St. Louis, Mo., Mr. Restorff was elected bandmaster of the Transvaal State Concert Band, connected with the great Boer War spectacle. This band, under the leadership of Prof. Henry Restorff, was one of the few bands that played the entire season—May to December, 1904—at the Fair.

The Pythian Concert Band, of Indianapolis, Ind., is another musical organization open to engagements. It is under the direction of John W. Sleight. As an added attraction Mr. Sleight has engaged Lillian May Monroe as soprano soloist.

#### A NEW RESORT FOR JERSEY

The Frank Melville Amusement Company, of New York, has in course of construction Melville Park, Boulevard and Fifty-First Street, Bayonne, N. J., spending \$150,000 on improvements. There will be a fine park hotel, with 400 ft. of bathing beach; bath houses, large dancing pavilion, scenic railway, carrousel, figure-eight toboggan, a Traver circle swing, and large open-air vaudeville platform. There will also be a large picnic ground. The property takes up about two blocks frontage and is about 750 ft. deep. The resort will draw upon Jersey City, Newark, Bayonne and Staten Island points. The Public Service Corporation will build a loop direct to the park and will build a pier. There will also be facilities for landing boats from Newark. A unique feature of the plan is to keep the park open all year. The opening day is set for May 25. Twenty-five picnics have already been booked.

#### THE STREET RAILWAY AND PUBLICITY AS INSTANCED IN THE CASE OF THE BOSTON COMPANY

In his address at the recent meeting of the Massachusetts Street Railway Association, held at Young's Hotel, Boston, Mr. Thomas F. Anderson, manager of the Boston Publicity and Information Bureau, in discussing the general subject of publicity, gave some very interesting facts about the publicity bureau of the Boston Elevated Railway Company, under the management of J. Harvey White. However, be-

fore dealing with this specific case and the results obtained, Mr. Anderson made some terse remarks about publicity work in general. He said briefly that it is a mistake for any transportation company or public service corporation to try to keep the newspapers and the public in the dark concerning its doings. Mr. Anderson, who for twenty years was a reporter and editorial writer, said that conditions were improving, and that a vast change was taking place at the present time in publicity work, which promised materially to benefit companies in the future. He said he wished distinctly to be understood as speaking of those roads that have established publicity bureaus for the purpose of serving as an official medium of news and new suggestions between the public and the newspapers, and not departments established for the special purpose of advertising the facilities and attractions of roads, such as the bureaus conducted by the steam roads. Referring specifically to the work of the Boston Elevated, Mr. Anderson said:

"The Elevated Company's publicity department was established in 1897, and it grew out of President Gaston's conviction that the public, which furnished the patronage and the dividends of the company, really had some rights in addition to that of riding a certain distance for 5 cents.

"Another important consideration was that the time of the president was too valuable to be infringed upon very extensively even by newspaper men, and this was probably the determining reason for establishing the bureau.

"At first, Mr. White devoted only a part of his time to this work, but, with the growth of the system and the increasing popularity of the bureau itself with the newspapers, he was soon obliged to give all his time to the duties. Just now that comes pretty nearly meaning twenty-four hours a day, for he is practically 'on call' at all hours.

"Mr. White has an office of his own in the Elevated Company's building, and has a stenographer and an assistant. His mission in life is not to advertise the company, except as that may come in incidentally to his regular work, but to save the time of President Bancroft—one of the busiest men in New England—and to aid the newspapers in getting authentic news reports about the company, be it changes in policy, accidents, appointments of officials, additions of new rolling stock, or what not.

"His time is given up largely to receiving and talking with reporters who come with every conceivable sort of inquiry, all of which Mr. White is supposed to be in a position to answer off-hand, and when he is not doing this he is preparing special matter to be sent out by himself in the shape of news items or 'special articles.'

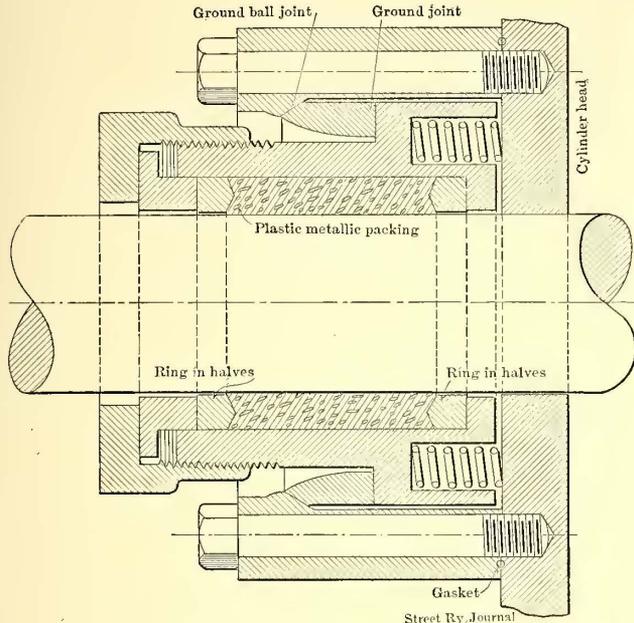
"It is the policy of the Elevated Company—in contrast to the secretive methods of many of the old-time street railways—to give out everything of a news nature that can possibly be construed as legitimate public property, and in the case of accidents everything except the names of those who are injured or claim to be injured.

"This latter reservation is made for the protection of the company, and to circumvent the enterprising 'ambulance attorneys,' who are always around in times of such trouble, and some of whom do not scruple to engineer legal conspiracies against the company. The Elevated Company, like most others, also has a rule forbidding its employees to give to reporters or others any information as to accidents.

"From the results of his ten years' experience as head of the publicity department, Mr. White is fully satisfied that the idea has worked splendidly for both the company and the newspapers, and incidentally for the public. It certainly has saved a great deal of the president's time, which is one of its most important functions."

**AN AUTOMATIC VIBRATING STUFFING BOX**

A vibrating stuffing box which automatically adjusts itself to any out-of-line movement of the piston rod or stem has recently been perfected by the Steel Mill Packing Company, of Detroit, and is illustrated in the accompanying engraving. It will be observed that the stuffing box is arranged with a casing, and is held against the ground ball joint ring by means of springs, assisted by the steam pressure from the cylinder, keeping the joints tight and preventing leakage. A clearance is provided between the stuffing box and in-



SECTION OF STUFFING BOX

terior of the casing, and between the rear surface of the stuffing box and the cylinder head. This permits the stuffing box to move laterally relative to the casing, to compensate for out-of-line movement of the rod or stem, and to rock on the curved face, or ball joint, to adapt itself to any angular movement of the rod. The spacing rings at each end of the packing work in connection with the packing, holding the stuffing box out of contact with the moving parts, thus preventing wear.

On Dec. 1, 1906, one of these stuffing boxes was placed on the main piston rod of a 100-hp engine in the Butterfield Power Building, Detroit. When the stuffing box was applied the piston rod was placed out of line so as to have an angular, as well as a lateral, movement of more than 1-16 in., and it has been found that the stuffing box "floats with the rod" without resistance, performing perfect work. In this instance the stuffing box is packed with the Steel Mill Company's "Safety" plastic metallic packing, but any suitable packing can be used. The company is now equipping its factory with special machinery for manufacturing these vibrating stuffing boxes under the supervision of its home force.

The Cincinnati Traction Company is preparing to equip its cars with closed and heated vestibules.

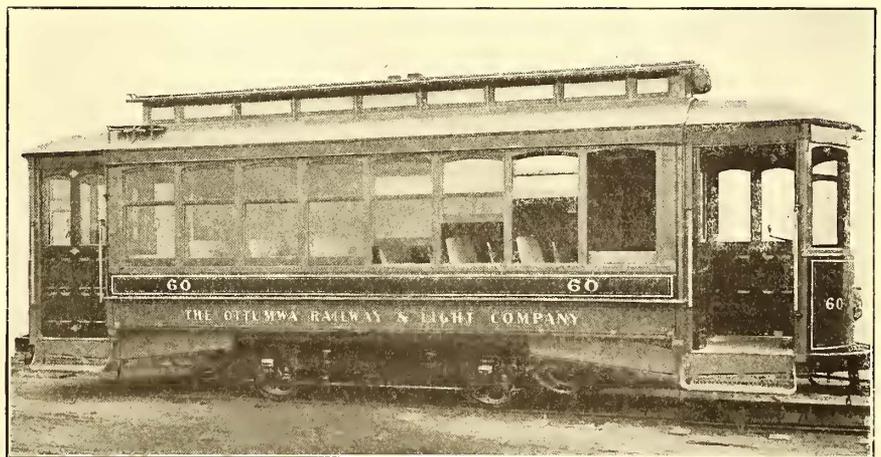
**NEW ROLLING STOCK IN OTTUMWA, IOWA**

A year ago the Ottumwa Railway & Light Company, of Ottumwa, Ia., was reorganized and the reconstruction of the entire property put in charge of H. M. Byllesby & Company, of Chicago, who are now the engineers and managers. Under their supervision a new power house has been built, equipped with the latest type of machinery; new car houses have been erected and the tracks have been relaid. Other improvements consisted in the reconstruction of the overhead system and light system. The office building now



INTERIOR OF OTTUMWA CAR

occupied by the company has been an added convenience. In the early spring it is probable that extensions and improvements will be made in South Ottumwa, which lies across the Des Moines River. Extensions lately completed total 2 miles of track, and in the way of rolling stock five open cars built by the American Car Company were among the new cars added to the lines last summer. The same builders have just shipped three cars of the Brill grooveless-post semi-convertible type to Ottumwa for operation on the Court Hill and Jefferson lines. These routes have exceedingly steep grades, and for this reason the cars have special safety brakes in addition to the regular hand brakes. The chief dimensions of the new semi-convertibles are as follows: Length over end panels, 20 ft. 8 ins.; over vestibules,



EXTERIOR OF OTTUMWA CAR

30 ft. 8 ins.; width over sills, including sheathing, 7 ft. 9½ ins.; over posts at belt, 8 ft. 2 ins.; size of side sills, 5 ins. x 3¾ ins.; center sills, 3¼ ins. x 4¾ ins.; end sills, 3½ ins. x 8½ ins. Interiors are of cherry; ceilings of birch. Push buttons are provided. The truck employed is the No. 21-E.

## FINANCIAL INTELLIGENCE

WALL STREET, Feb. 20, 1907.

### The Money Market

There has been no material improvement in the monetary situation during the past week. The demand for money in connection with stock speculation has been less urgent, despite the advancing prices in the securities market, but the borrowings by corporations have been rather heavy, and have served to maintain rates for practically all classes of accommodation at last week's level. Money on call has been in good supply, at from 6 per cent to 3 per cent, while money for sixty days commanded  $5\frac{1}{4}$  per cent. For the longer maturities, extending from ninety days to six months, lenders generally maintained the market at  $5\frac{1}{2}$  per cent, while in some instances  $5\frac{3}{4}$  per cent was paid. It is not expected, however, that any material change in rates will be made in the near future. It is pointed out that any decided hardening in interest charges would doubtless be followed by the importation of gold from Europe. For several weeks past the rates of exchange have been at a point which permits the importation of the yellow metal, but so far our bankers have succeeded in securing only \$1,000,000 gold in the open market at London. These small engagements are accounted for by the fact that the gold is not needed at this center at present, and there is no disposition on the part of local bankers to needlessly disturb the European money market. Should the local situation become such as to require relief from outside sources our bankers would doubtless be able to secure substantial amounts of gold in Europe for import to New York. In the meantime the Bank of England continues to strengthen its position by absorbing practically all of the gold arriving from South Africa in the London market, but so long as New York bankers continue in the market for gold the governors of the Bank of England are not likely to make any change in the official discount rate.

An important feature of the week has been the heavy demands for new capital by the railroads and other corporations. The New York, New Haven & Hartford Railroad has placed an issue of \$29,000,000 4 per cent fifteen-year debentures in Paris, while the Interborough Rapid Transit Company and the Lackawanna Steel Company have placed \$10,000,000 and \$5,000,000 respectively in short-time notes. While the two latter loans were negotiated here it is understood that a considerable part of both issues will be placed in London and on the Continent. In addition to the above transactions the Pennsylvania Railroad will soon be in the market for \$60,000,000, practically all of which will be used for refunding purposes. It is expected that a large part of it will be placed abroad, while the balance will be provided for in such a way as not to cause any serious disturbance in the local money market. So far as known the offer of Secretary Shaw to purchase \$25,000,000 of Government 4 per cent bonds maturing this year has not met with much success, there being a general disposition on the part of the holders of those bonds to await their maturity on July 1 next. The national banks have about completed the repayment of the \$12,000,000 special deposits made by the Secretary of the Treasury during the closing months of 1906, to relieve the stringency prevailing in the local market at that time. The bank statement published on last Saturday was about as expected. Loans decreased \$7,295,400. The loss in cash amounted to \$918,900, but as deposits decreased \$8,016,300, the reserve required was smaller by \$2,004,075. The surplus, therefore, was increased \$1,085,175, to \$4,431,050, which compares with a surplus of \$3,345,875 in the previous week, and \$5,789,925 in the corresponding week of last year.

### The Stock Market

There has been a further decided improvement in the securities market during the past week. Trading was in smaller volume, but it was accompanied by a general rise in values. The market was entirely professional, and while London bought moderately there were no indications of a growing interest in the specula-

tion on the part of the outside public. There was, however, several developments which served to impart a more cheerful sentiment. Chief of these was the growing belief that the proposed amendment to the currency laws would be passed at this session of Congress. Less concern was felt regarding the immediate future of the money market, and while flurries in call money are to be expected from time to time, there is nothing in the situation to warrant any material hardening of interest charges. The depository banks have about completed the repayment of the \$12,000,000 special deposits into the Federal Treasury and barring the usual demands for money at the interior in connection with spring trade, the local institutions are not likely to be called upon to meet any extraordinary demand for funds. Several of the leading railroads who were understood to be contemplating the raising of new capital have abandoned their plans, and have announced a policy of retrenchment. While other railroad loans may be announced from time to time, it is believed that the bulk of corporate borrowings have been completed, at least for the present. Another important factor has been the eagerness on the part of foreign investors to invest in American securities, especially in the short-time notes now being offered by railroads and other corporations. In fact, a very considerable part of the loans announced during the week have been placed in Europe, and it is probable that local bankers will succeed in placing substantial amounts of the contemplated issues abroad. The placing of these issues in European markets not only relieves the local money market but opens up new markets for American securities and greatly increases our credit abroad. More than ordinary interest centered in the meetings of the Union and Southern Pacific directors, at which the semi-annual dividends of 5 per cent on the first-named stock, and  $2\frac{1}{2}$  per cent on the latter stock were declared. In some quarters it was believed that the distribution on Southern Pacific would be increased. However, as the company is earning considerably more than the present rate of dividends it is considered only a short question of time when the dividend on the stock will be enlarged. At the close of the week there were general recessions in prices as the result of profit-taking sales, but the undertone of the market was very firm.

The local traction stocks moved in sympathy with the general market. Interborough rapid transit ran off on the announcement that the company had sold an issue of \$10,000,000 5 per cent notes, maturing in three years from March 1 next. This increases the total note issue of the company to \$25,000,000. It is understood that the proceeds of the new loan will be used for further construction of the Brooklyn extension and for the development of trolley lines on Long Island already owned by the company.

### Philadelphia

Trading in the local market for traction shares was extremely quiet during the week, but prices generally displayed firmness. Philadelphia Rapid Transit was about the only issue to develop any degree of activity, upwards of 8000 shares changing hands at from  $21\frac{1}{8}$  to 22. Philadelphia Company common held all of last week's gain, all sales taking place at 47. Philadelphia Traction was somewhat easier, the price declining  $\frac{3}{8}$  to 94. Other sales included American Railways at  $50\frac{7}{8}$  and 51, Philadelphia Company preferred at  $46\frac{3}{8}$ , Union Traction at  $57\frac{1}{2}$  and  $57\frac{3}{4}$ , United Companies of New Jersey at  $253\frac{1}{2}$ , and Consolidated Traction of New Jersey at 75.

### Baltimore

Extreme dullness prevailed in the traction issues at Baltimore, but prices generally ruled firm. United Railway issues, which have been the active features of the trading for weeks past, were practically at a standstill. The 4 per cent bonds sold at  $89\frac{7}{8}$  and 90, while the incomes brought 57 for small amounts. United Railway free stock was an exception to the general rule, transactions in it aggregating nearly 900 shares, all at 13. City & Suburban 5s sold at  $108\frac{1}{8}$  and  $108\frac{1}{4}$ , and Knoxville Traction 5s brought 107.

**Other Traction Securities**

The market for traction stocks in Boston was quiet and very irregular. Boston & Worcester common, after selling at 27, broke to 25½. The preferred stock was steady at 76. Boston & Suburban declined a full point to 14 in the early dealings, but later recovered all the loss. Massachusetts Electric common declined from 19½ to 18, but subsequently recovered a point, but the preferred on light transactions declined from 69 to 67. Boston Elevated sold at 149, West End common 93½ and 93 and the preferred at 109. In the Chicago market dealings in street railway issues were practically at a standstill, the only transactions reported consisting of small lots of Chicago & Oak Park Elevated common and preferred at 4 and 13, respectively, and South Side Elevated at 85.

Aurora, Elgin & Chicago and Cleveland & Southwestern common were the factors on the Cleveland Stock Exchange the past week. Brokers were rather surprised at the turn of events, as these securities were not especially prominent until a little over a week ago, when a demand sprang up for Aurora, Elgin & Chicago. In all, about 1200 shares of Cleveland & Southwestern changed hands. Cleveland Electric has been steady, and of late there has been some demand for Cincinnati, Dayton & Toledo stock.

**Security Quotations**

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

	Feb. 14	Feb. 20
American Railways .....	50¾	50¾
Boston Elevated .....	149	148
Brooklyn Rapid Transit .....	75	73¾
Chicago City .....	150	160
Chicago Union Traction (common).....	5¼	5
Chicago Union Traction (preferred) .....	16¾	15½
Cleveland Electric .....	62	62
Consolidated Traction of New Jersey .....	75¼	75
Detroit United .....	80¼	78
Interborough-Metropolitan .....	35¾	34
Interborough-Metropolitan (preferred) .....	71½	70¾
International Traction (common) .....	56	55
International Traction (preferred), 4s.....	80	80
Manhattan Railway .....	145	143½
Massachusetts Electric Cos. (common) .....	19	19
Massachusetts Electric Cos. (preferred) .....	69	68
Metropolitan Elevated, Chicago (common).....	25	25
Metropolitan Elevated, Chicago (preferred).....	68	68
Metropolitan Street .....	—	104
North American .....	82	81
North Jersey Street Railway .....	40	40
Philadelphia Company (common) .....	46¼	46½
Philadelphia Rapid Transit .....	21½	21½
Philadelphia Traction .....	94½	94
Public Service Corporation certificates .....	68	68
Public Service Corporation 5 per cent notes.....	96½	96½
South Side Elevated (Chicago) .....	84½	83
Third Avenue .....	119	117½
Twin City, Minneapolis (common) .....	103	103
Union Traction (Philadelphia) .....	57¾	57¾

**Metals**

The "Iron Age" says that the pig iron markets throughout the country have been quiet, and in some quarters show some easing off. Basic iron has been offered, but not pressed, in Eastern Pennsylvania by Shenango and Mahoning Valley furnaces, and some calls have been made, there being quite a demand for prompt basic. Reports from the finished iron and steel trade are uniformly cheerful, and in some branches, notably in bars and in plates, the pressure for deliveries is enormous. Cast iron pipe manufacturers report a continuance of heavy business at a comparatively early period of the year.

Copper metal continues strong but without change in price. Quotations follow: Lake, 25 and 25¼ c.; electrolytic, 24× and 25c.; Castings, at 24¼ and 24¾c.

**DATE SET FOR SOUTHWESTERN ASSOCIATION MEETING**

It has been decided by the executive committee of the Southwestern Electrical and Gas Association to hold the next annual convention at San Antonio, Tex., May 14, 15 and 16. The details have not as yet been arranged.

**INDIANA LEGISLATURE PASSES A 2-CENT RAILWAY FARE LAW**

The bill providing for a 2-cent rate on Indiana railroads awaits the Governor's signature to become a law. The Legislature, however, added a penalty of ½ cent on passengers who neglect to purchase tickets before entering the train. The conductor, however, must give a rebate voucher for the excess fare which will be cashed by any agent. It was shown by Ohio conductors who appeared before the committee, that designing passengers in groups of three or five would board a train, and each individual tender a large bill in payment of a small fare.

**BRITISH TRAMWAY STATISTICS**

The annual volume issued by the railway department of the Board of Trade, giving the statistics of the tramways in Great Britain, has just been published. They are for the year ending March 31, 1906, and include the following: Capital stock issued, £16,447,845; bonded indebtedness issued, including municipal tramway loans, £41,490,572; length of route, 2240 miles; number of cars, electric, 9276; number of cars, non-electric, 1614; passengers carried, 2,236,012,777; kilowatt-hours output, 316,134,816; gross receipts, £10,643,178; operating expenses, £6,835,763; net receipts, £3,807,415.

The division of operating expenses is as follows: Maintenance of permanent way, £377,527; maintenance of electrical equipment, £112,226; maintenance of engines or horses, £66,344; maintenance of cars and other rolling stock, £573,997; maintenance of buildings, fixtures, tools and miscellaneous equipment, £87,769; cost of tractive power, £1,747,509; traffic expenses, £2,775,754; rent of offices, etc., £93,695; rates and taxes, £384,288; injuries and damages, £164,342; miscellaneous, £452,312; total, £6,835,763.

Of the total 312 undertakings, 175 belong to local authorities and 137 to companies or private individuals. The municipal plants represent 1491 miles of total route, or 2499 miles measured as single-track line; the private systems have a route mileage of 748, or a total mileage measured as single track of 1092. Of the entire 2240 miles, 1993 were operated by electricity, 72 miles by steam, 26 miles by cable, 4 miles by gas engines and 145 miles by horses at the time the figures were compiled.

**NEW YORK CITY RAILWAY REPORT**

The New York City Railway Company's report for the quarter and twelve months ended Dec. 31, 1906, compare as follows: Oct. 1 to Dec. 31—

	1906	1905
Gross .....	\$4,552,656	\$4,453,875
Expenses .....	2,559,657	2,471,462
Net .....	\$1,992,999	\$1,982,413
Other income .....	271,086	313,956
Total income .....	\$2,264,085	\$2,296,369
Charges .....	2,871,807	2,812,000
Deficit .....	\$607,722	\$515,631
Jan. 1 to Dec. 31—		
Gross .....	\$17,636,707	\$17,020,033
Expenses .....	9,558,287	9,651,324
Net .....	\$8,078,420	\$7,368,709
Other income .....	1,172,264	1,261,681
Total income .....	\$9,250,684	\$8,630,390
Charges .....	11,347,788	11,185,658
Deficit .....	\$2,097,104	\$2,555,268

The gross earnings and operating expenses for 1906 include the operations over the tracks of the Thirty-Fourth Street Crosstown Railroad Company, Fulton Street Railroad Company and Twenty-Eighth and Twenty-Ninth Streets Crosstown Railroad Company, and the interest on funded debt, and taxes include the accrued interest and taxes of these companies. These amounts in 1905 were shown net as income from other sources. The income for 1906 also includes the operations over the tracks of the Kingsbridge Railway Company.

**ANNUAL REPORT OF THE CHICAGO CITY COMPANY**

The Chicago City Railway Company has issued its annual report for the year ended Dec. 31, 1906. The income account compares as follows:

	1906	1905
Gross .....	\$7,871,126	\$7,322,080
Expenses, taxes, depreciation and int. ....	6,146,304	5,642,606
Net .....	*\$1,724,822	1,679,474
Dividends .....	1,620,000	1,620,000
Surplus .....	\$104,822	\$59,474

\* Equal to 9.50 per cent on the \$18,000,000 capital stock.

The percentage of expenses to gross earnings was 78.08 per cent. Passenger receipts per day amounted to \$21,297. Fare passengers for the year aggregated 156,177,363. Transfer passengers 94,623,106. The percentage of transfer to fare passengers was 60.59 per cent.

President Mitten says: "With an increase of 7.34 per cent in the passengers paying fare, there was but 60.59 per cent of fare-paying passengers taking transfers as against figures of 60.42 per cent for the preceding year. The average fare being same as last year, 3.1 cents.

"The increase of 8.92 per cent in expenses was due largely to increased volume of business, necessitating more cars and labor to handle the same, to which must be added heavy truck repair account and increased interest charges on borrowed money, due to large sums being expended for new cars and construction of power plants and other buildings.

"The 200 cars purchased during 1905 having proved satisfactory, 100 additional cars of same type were purchased and placed in service. The use of cable lines and horse cars has been discontinued and all lines are now operated electrically.

"To meet the demand for increased power, marked additions have been made to sub-station power plants, the rated capacity of generating plants and sub-stations combined now being approximately 35,000 hp, an increase of 10,000 hp.

"A new paint shop with a capacity of 150 cars has been completed at Seventy-Seventh Street, adjacent to general repair shops. A modern office building for use as divisional headquarters has also been completed at same location. Two new car stations of large capacity and modern equipment are in course of erection. Portions of track on Twenty-Sixth Street, Thirty-First Street, Forty-Third Street, Forty-Seventh Street, Fifty-First Street, Sixty-Third Street, Ashland Avenue, Halsted Street and Center Avenue have been reconstructed.

"The elimination of grade crossings still continues. The expense to company during year as result of track elevation approximated \$100,000. This expenditure will be reflected later in decreased operating expenses, as faster schedules can be maintained and abolition of grade crossing accidents will result.

"Material improvements in fire risk at power houses and other buildings materially decreased rate of insurance for current year."

**QUARTERLY STATEMENTS OF MANHATTAN ELEVATED AND SUBWAY DIVISIONS OF THE INTERBOROUGH COMPANY**

The quarterly statement of earnings for the three months ended Dec. 31, 1906, of the Manhattan Elevated and Subway divisions, showing the amounts contributed by each to the total earnings of the Interborough Rapid Transit Company, follows:

**MANHATTAN RAILWAY**

	1906	1905
Oct. 1 to Dec. 31—		
Gross .....	\$3,612,746	\$3,294,284
Expenses .....	1,399,934	1,392,377
Net .....	\$2,212,812	\$1,901,907
Other income .....	98,128	114,717
Total income .....	\$2,310,940	\$2,016,624
Charges .....	1,860,241	1,857,022
Surplus .....	\$450,699	\$159,602

	1906	1905
July 1 to Dec. 31—		
Gross .....	\$6,727,103	\$6,097,760
Expenses .....	2,719,273	2,707,222
Net .....	\$4,007,830	\$3,390,538
Other income .....	189,280	186,017
Total income .....	\$4,197,110	\$3,576,555
Charges .....	3,557,941	3,534,694
Surplus .....	\$639,169	\$41,861

**SUBWAY DIVISION**

	1906	1905
Oct. 1 to Dec. 31—		
Gross .....	\$2,202,485	\$1,887,317
Expenses .....	965,231	744,977
Net .....	\$1,237,254	\$1,142,340
Other income .....	96,529	111,975
Total income .....	\$1,333,783	\$1,253,415
Charges .....	612,665	449,737
Surplus .....	\$721,118	\$803,678
July 1 to Dec. 31—		
Gross .....	\$3,580,148	\$2,988,937
Expenses .....	1,778,190	1,397,579
Net .....	\$1,801,958	\$1,591,358
Other income .....	154,449	199,616
Total income .....	\$1,956,407	\$1,790,974
Charges .....	1,146,174	759,736
Surplus .....	\$810,233	\$1,031,238

The total of both divisions for the quarter and six months ended Dec. 31, 1906, is as follows:

	Manhattan Division	Subway Division
Oct. 1 to Dec. 31, 1906—		
Gross .....	\$3,612,746	\$2,202,485
Expenses .....	1,399,934	965,231
Net .....	\$2,212,812	\$1,237,254
Other income .....	98,128	96,529
Total income .....	\$2,310,940	\$1,333,783
Charges .....	1,860,241	612,665
Surplus .....	\$450,699	\$721,118
July 1 to Dec. 31, 1906—		
Gross .....	\$6,927,103	\$3,580,148
Expenses .....	2,719,273	1,778,190
Net .....	\$4,007,830	\$1,801,958
Other income .....	189,280	154,449
Total income .....	\$4,197,110	\$1,956,407
Charges .....	3,557,941	1,146,174
Surplus .....	\$630,169	\$810,233

The earnings of the Interborough for the entire twelve months of 1906 and of 1905 with actual and percentage increases compare as follows:

	1906	1905
Gross earnings .....	\$20,916,145	\$18,218,265
Expenses .....	8,793,486	8,245,006
Net earnings .....	\$12,122,659	\$9,973,259
Other income .....	673,597	701,662
Total income .....	\$12,796,256	\$10,674,921
Charges .....	*9,251,066	*8,170,780
Surplus .....	\$3,545,190	\$2,504,141

\* Includes dividend on Manhattan Railway Company stock.

## THE SITUATION IN CLEVELAND

The presidents of the two street railway companies at Cleveland, Ohio, have been patiently considering the figures that have been gathered for them and are still some distance from the point at which a conclusion may be expected. The appraisal work is being done in a very thorough manner, and in some cases where figures have been turned in by city employees Mr. Du Pont has returned them and asked that expert appraisers be employed to give their opinions. It is said that this has been done several times. Mr. Du Pont seems to be eminently fair in the manner in which he is going at this work, and President Andrews, of the Cleveland Electric, is equally fair in getting at figures that will represent actual values.

J. G. W. Cowles, an expert on city real estate values, has been employed several times by the city to fix the worth of certain real estate. The two presidents feel that when they make their report they should have figures that will be satisfactory to both sides, and if they are not, they want to be fortified with the reasons. In other words, they will leave nothing to guess work, but will have appraised values and careful estimates for everything. Then, if there is a disagreement or dissatisfaction, the proof of the whole thing will be on paper.

Following the announcement that they had agreed upon the manner in which depreciation should be estimated, it is now stated that the depreciation in some of the lines has been arrived at. This work will be carried along as well as possible with the other things that come up from time to time.

Impatience has been shown over the length of time being taken in the work. Mr. Du Pont has stated several times that the work is formidable and filled with detail, requiring much time, and both he and Mr. Andrews may issue a joint statement, giving an outline of what is being done, in order to satisfy those who are in a hurry. Again, it has been charged that the Mayor is delaying the work, so that he may be able to make political capital out of it for his next campaign, but this is probably not true. In the past he has used the 3-cent issue for all it is worth, but the matter has now gone so far that it will hardly help him to have it delayed.

President Springborn, of the board of public service, is making complaints to the effect that the Cleveland Electric is not using all its cars during the rush hours morning and evening, and has threatened to appeal to the City Council. Manager Stanley denies that the company is holding up any of its cars that can be used.

## THE TREND OF AFFAIRS AT HARRISBURG

Legislative circles are considerably mystified concerning the real parties behind the four bills introduced at Harrisburg by Senator Campbell, who refuses to take his fellow legislators into his confidence. These bills were introduced in the shape of amendments to the street passenger railway act of 1889 and 1905. The railroad merger provides that "any street railway company, incorporated under the act, may acquire any or all of the stock of any railroad company, purchase the property of such railroad company and the right to purchase or lease the property, or by operating agreement, operate its cars over the property, right of way or tracks of any such railroad company." The operation of cars over the acquired property of such railroad company shall be under the laws applicable to street railway companies.

Any street railway company, under the laws relating to the merger of railroads, may merge itself into any railroad company, but the operation of the consolidated company shall also be subject to the laws applicable to street railway companies.

The right of eminent domain granted in the same bill to street railway companies authorizes them to take any interest of abutting owners in the highways or land necessary for the construction and operation of their roads, not exceeding, however, 60 ft. in width. Provision is made for just compensation for all property taken or injured. No place of worship or dwelling house or cemetery shall be taken.

Every street railway company may carry freight under such rules as to the kind of freight, the time and method of transportation, and the rate of payment therefor, as the board of directors may adopt. Such company shall carry freight within any city or borough without the consent of municipal authorities and under such regulations as they may prescribe.

The same bill permits the president and directors of a street railway company to borrow as much money as they please, to issue bonds for any amount and to pay any rate of interest, and pay the principal when they get ready.

The act of 1889 provides that the president and directors of any railway company shall have power to borrow money, "not exceeding the amount of capital stock subscribed," and issue bonds in such amounts as "shall not exceed double the amount actually paid up of the capital stock subscribed, the proceeds whereof shall be actually expended in the construction and equipment of the roads; these bonds to be payable at such times not exceeding thirty years after the date thereof at such rate of interest not exceeding 7 per centum."

The amended bill eliminates the parts quoted above. The object is to remove all restrictions in the amount they can borrow so that they may extend their branches to a distance proportionate to their borrowing capacity.

The second Campbell bill further amends the act of 1889 by authorizing a railway company to construct any branch or extension by resolution of its board of directors, instead of by resolution of its stockholders, and the proposed branch or extension need not be within "the general scope of its original charter."

Roads started after obtaining consent of municipal authorities must be completed within five years and used every day for the transportation of passengers. Otherwise the company shall be deemed to have abandoned the right to occupy and use streets, highways and bridges.

A section is stricken out of the act of 1889 which forbids street passenger railway companies to connect their tracks with the tracks of a railroad company.

The two bills amending the act of 1895 remove provisions that prevented any traction or motor power company or any street passenger railway company from leasing or acquiring any line or part of a line occupying any township, borough or country road.

This proviso, however, was inserted in the section allowing traction or motor companies to sell or lease their lines or passenger railway lines leased or controlled by them to each other.

"Provided, That nothing herein contained shall be construed as authorizing any traction or motor power company to acquire, lease or operate so much of the line of any other motor power company as occupies any township, borough or country road."

This is stricken out of the amended bill just introduced by Senator Campbell, as is also a similar provision in the 1905 act permitting street passenger railway companies to lease or sell their lines to traction or motor power companies, "not operating a line or lines of railway on township or country roads."

## REVIVAL OF OHIO AND INDIANA CONSOLIDATION RUMORS

Owing to a revival of the talk concerning the combination of all the traction properties of the Philadelphia syndicate under the control of W. Kelsey Schoepf and Hugh J. McGowan in Ohio and Indiana, a report was sent out that the merger had been completed. While this is not true in Ohio, it is known that the managers have been working to that end ever since they began to secure properties in the State, and if their plans come out right they will have an immense trunk line system in this territory within the next few years. The Indiana, Columbus & Eastern controls the old Appleyard lines, the roads between Columbus and Zanesville, the Lima & Toledo and the Columbus & Lake Michigan. When the gaps are filled in the company will have through lines from Dayton to Zanesville and Toledo, with connections for Cincinnati and Indianapolis and other Indiana cities. The other Ohio interests are the Ohio Traction Company, consisting of the Cincinnati Traction Company and the Cincinnati Car Company; the old Millcreek Valley lines, the Cincinnati, Dayton & Toledo and the Cincinnati Northern. The merger of the Indianapolis & Northwestern, Indianapolis & Western, Indianapolis Coal Traction, Indianapolis & Martinsville, Indianapolis & Eastern and the Richmond Street & Interurban Railway into one large system is a step toward the final consolidation. At this time the groups of properties in Ohio are not in shape for even such consolidation, but as soon as the various gaps are filled in and financial conditions are right the merger will no doubt be perfected.

## TROLLEY FREIGHT RIGHTS FOR BOSTON SUBURBAN LINES

The Massachusetts Railroad Commission has issued an order granting the privilege of carrying trolley freight and express matter to the street railways operating in Waltham, Newton and Lexington. Explosives and all other articles which may hereafter be prohibited by the Board are excluded in the order. Press reports state that there is a prospect that the Boston Elevated Railway Company may take up the freight handling problem, with a view toward facilitating the exchange of light freight and express packages between Boston and its environs. Baggage and freight rights have also been granted to the West-boro & Hopkinton Street Railway.

## NEW YORK TRANSIT MATTERS

The New York Rapid Transit Commission has given out the form of contract for the proposed subway loop connecting the Brooklyn and Williamsburg Bridges. There will be five separate contracts for the construction of the loop. The first will cover the portion between Pearl and Canal Streets, which, in the opinion of the engineers, will be the most difficult part of the work. The Commission expects that it will take at least twenty-one months to construct the Manhattan loop, and that is the time limit fixed in the contract. The construction of the Brooklyn loop also will take a considerable time; so it is probable that cars will not be running within three years. A public hearing on the contract will be given on Feb. 28.

In conference with representatives of the Pennsylvania Railroad, committees of the Rapid Transit Board and the Board of Estimate agreed upon the terms of a franchise for the New York Connecting Railroad, and the decision was submitted to the Transit Board for approval last week.

The final compensation which it is agreed that the company is to pay the city for the franchise is as follows: An annual sum of \$27,000 a year, the payments to begin when the company begins to operate the road. This is to be paid for the first ten years, and \$55,000 a year is to be paid for the next ten years. At the end of each twenty-five years the terms are to be readjusted by the Supreme Court.

## ACCIDENT ON THE ELECTRIFIED DIVISION OF THE NEW YORK CENTRAL

A serious accident occurred Feb. 16 at a curve near 205th Street, New York, on the Harlem division of the New York Central Railroad, with the White Plains and Brewster express, which left the Grand Central Station at 6:13 p. m. The train was made up of five wooden cars drawn by two standard electric locomotives of the New York Central Railroad. The last four cars were derailed while passing the curve at that point, turned over and were smashed. The casualty list totaled about twenty killed and 150 injured.

The Railroad Commissioners and the railroad company are now making an investigation to determine the cause of the accident. The evidence so far presented indicates that the rails became spread through a movement of the outer rail, but the exact speed of the train at the time of the accident had not been determined at the time of going to press. The official statement of the company, issued Feb. 18, follows:

The investigation carried on by officials of the company has not, thus far, disclosed the exact cause of the accident. There is evidence that a break in one of the wheels of the engine occurred at the point of derailment, as pieces of the broken wheel were found at that point. In almost the same place a rail broke, but it is impossible to say which of these caused the derailment or which resulted from it.

The rail was 100 lbs. to the yard, and the records show that it had been on the track less than a year. This is the heaviest weight of rail in general use in the country. The track was also well ballasted with stone, and was in perfect alignment and surface. The ties were in excellent condition, and the gage of the track was secured by the most approved form of tie-plates.

The electric motor was new, and had been thoroughly tested on an experimental track before being permitted to operate in service, and all wheels under the motor and equipment were of the standard steel-tire construction. In a matter of such grave importance it is not possible to determine definitely the cause of the accident in such a short period of time. Every effort, however, is being made to locate the cause.

## TERMS FIXED FOR THE SALE OF THE LANCASTER PROPERTIES

The committee recently appointed by the stockholders of the Lancaster County Railway & Light Company to arrange the terms of sale of the property to Bertron, Storrs & Griscom, of New York, reported at a meeting last week that the stockholders will receive \$100 per share in cash, and that 25 per cent will be paid on March 1 and 25 per cent each sixty days thereafter until it is all paid. All stockholders are requested to deposit their stock before March 1 with the Lancaster Trust Company or the People's Trust Company, as trustees for the stockholders.

The purchasers of this property have taken out incorporation papers under the name of the Susquehanna Railway, Light & Power Company, in New Jersey, with a capital stock of \$20,000,000, divided as follows: Preferred stock, cumulative, 5 to 7 per cent, authorized, \$10,000,000; to be issued, \$3,650,000. Common stock, full paid, authorized, \$10,000,000; to be issued, \$3,650,000. The stock to be issued at once is for the purchase of the common stock of the Lancaster County Railway & Light Company and of the United Gas & Electric Company. The stock reserved in the treasury is for extensions and improvements and for the purchase of additional properties. The preferred stock will be 5 per cent cumulative, but after 5 per cent has been paid on the common stock, the preferred stock will share equally with the common stock in non-cumulative dividends up to 7 per cent, all other dividends accruing to the common stock.

The Lancaster County Railway & Light Company was incorporated June 15, 1901, under the New Jersey laws, and owns practically all of the stock of the Conestoga Traction Company, the Edison Electric Illuminating Company, Lancaster Gas Light & Fuel Company, and Columbia Electric Light, Heat & Power Company; it operates all of the electric railways entering the city of Lancaster, and practically all in Lancaster County. It also does all the gas and electric lighting in the city of Lancaster and the electric lighting in Columbia. On this company there are: Collateral trust 5 per cent bonds, due 1901, \$1,000,000; preferred stock, 5 per cent cumulative, \$1,000,000; common stock, \$1,000,000. The collateral trust bonds are secured by all the stock in the above named companies which are owned by the Lancaster County Railway & Light Company.

The United Gas & Electric Company owns, controls and operates eleven gas and electric properties in different cities of the United States, as follows: Altoona, Pa. (gas company); Chicopee, Mass. (gas company); Colorado Springs, Col. (gas company); Terre Haute, Ind. (gas company); Hyde Park, Mass. (gas company); Elmira, N. Y. (gas, electric light, water and street railways; Hartford, Conn. (gas company); Leavenworth, Kan. (gas and electric); Lockport, N. Y. (gas and electric); Richmond, Ind. (gas and electric). The company has been in operation for five years, and is capitalized as follows: First mortgage 5 per cent bonds outstanding, due 1922, \$1,543,500; preferred stock, 5 per cent, \$1,022,170; common stock, \$1,649,320.

Several extensions and connections are intended to be made as soon as practicable to the Lancaster County Railway & Light Company's electric railway lines. Some of the extensions contemplated are: From Christiana to Parkesburg, connecting with the Philadelphia, Coatesville & Lancaster Railway, giving through connection with Philadelphia. From Mt. Joy to Middletown, providing for through service between Lancaster and Harrisburg, 40 miles. From Manheim to Lebanon, giving through service for the 30 miles between Lancaster and Lebanon. The present connection with Reading will be taken advantage of by a through and improved car service. The cost of these lines will be approximately \$1,500,000.

After setting forth the present and prospective earnings of the company, the prospectus, which is issued by Bertron, Storrs & Griscom, says that within the next eighteen months about 75,000 hp will be generated and available from the water-power electric generating plant at McCall's Ferry. It is estimated that at least 45,000 hp can be used in Lancaster and surrounding territory reached by the Lancaster County Railway & Light Company. It is intended that this amount of power shall be used for the benefit not only of the traction and electric lighting and power properties owned by this company, but shall be used also for the benefit of the manufacturing and other industries of the whole section. The Lancaster County Railway & Light Company is the natural distributing agent in Lancaster County for McCall's Ferry power.

## BOSTON AND NORTHERN BUYS POWER AT HAVERHILL

The Boston & Northern Street Railway Company has made arrangements with the Haverhill Electric Company for the supply of 250 kw at its Bradford sub-station, which is on the opposite side of the Merrimack River from Haverhill. A 2300-volt, 60-cycle three-phase armored cable 700 ft. long was laid on the river bottom last week in 5 hours, by cutting a slot 8 ins. wide across the river through 14 ins. of ice. The cable has an ultimate capacity of 600 kw, and was laid by being allowed to fall through the slot to the bottom by its own weight.

## COMMITTEE ON MUNICIPAL OWNERSHIP

The personnel of the committee on municipal ownership of the American Street and Interurban Railway Association was announced last week by President Beggs. It consists of the following:

C. D. Wyman (chairman), general manager, Stone & Webster, Boston, Mass.

John A. Beeler, general manager, Denver City Tramway Company, Denver, Col.

George F. Chapman, general manager, United Railroads of San Francisco, San Francisco, Cal.

H. M. Sloan, general manager, Calumet Electric Street Railway Company, Chicago, Ill.

J. J. Stanley, general manager, Cleveland Electric Railway Company, Cleveland, Ohio.

## MOTOR BUS LINE IN PHILADELPHIA

The Auto Transit Company, of Philadelphia, has asked City Councils for permission to operate electric omnibus lines. This concern proposes to install a service, starting June 1, on North Broad Street, the coaches to run on a regular schedule. The fare is to be 5 cents, and no passengers are to be taken on unless there are vacant seats for them. The company was incorporated last spring by local financiers and two Pittsburg capitalists, and applied to the Bureau of Highways for licenses to run its vehicles on the streets. Another company asked for an exclusive right from Councils. The matter has been pending for several months, but the favorable action taken by the highway sub-committee on a bill permitting any company to take out licenses for this class of vehicles is regarded as the virtual end of the controversy. The bill is said to be certain of passage in Councils.

## SAN FRANCISCO BOARD OF ARBITRATION DECISION

While no formal report has been made, the board of arbitration selected to adjust the differences between the carmen and the United Railroads of San Francisco is said to have arrived at a decision, that the United Railroads pay its employees an increase of 20 per cent in wages and that the hours of labor shall remain as at present—10 hours constituting a day's work. The question of "open shop" or "closed shop" did not enter into the controversy upon which the arbitrators passed. The board of arbitration, which is composed of Chief Justice of the Supreme Court William H. Beatty, Major Frank McLaughlin and Rev. Peter C. Yorke, was unanimous in its decision, so that the third member was not required to umpire a difference between the other two.

Says the San Francisco News Bureau: "The great victory for the people lies in the fact that the 'closed shop' is not insisted upon. This feature of unionism is abhorrent to every true American, and it is with the greatest satisfaction that the people of San Francisco note that no action was taken in this matter. Now that the labor question is settled, it behooves the United Railroads to see that arrangements are made at once to render a transportation service to this city in keeping with the privileges it enjoys."

## TROLLEY SLEEPER PLACED IN SERVICE

The first trolley car sleeper ever run in the State of Illinois left East St. Louis for Decatur, Ill., via Springfield, at midnight, Thursday, Feb. 14, with seven passengers on board. The car resembles very much a Pullman sleeper. It is nearly 72 ft. long and is divided into ten compartments, including a smoker. The car will pass only one coach on its way to Springfield, and that will be the sleeper eastbound.

## BOSTON TERMINUS OF CAMBRIDGE SUBWAY FIXED

The Boston Transit Commission has decided to terminate the Boston end of the new subway from Cambridge at Park Street. The decision involves the construction of a tunnel for two tracks adapted to the operation of elevated trains from a point near the Boston end of the new Cambridge Bridge under Beacon Hill to the present Park Street station. The tunnel is to be constructed and paid for under the same terms as the Washington Street subway, and the present entrances and exits from Park Street station may be enlarged by a maximum of one-third. The Boston Elevated Railway Company has the right of appeal from the decision for thirty days if it desires, but it is not anticipated that the company will raise objections to the Park Street route.

## NEW DEVELOPMENTS IN ORGANIZATION OF THE OHIO BRASS COMPANY

In order better to serve its rapidly increasing trade the Ohio Brass Company has recently made arrangements for the establishment of two new branch offices and has made several additions to the personnel of its home office. These new branch offices will be located at St. Louis, Mo., and Atlanta, Ga., and they will carry ample stock of standard materials for quick shipments, which will be selected to fulfill the requirements peculiar to their respective territories. The establishment of these offices will enable the company to take care of its trade in the Southwestern and Southeastern territories more efficiently than ever, and will greatly facilitate prompt filling of orders.

The St. Louis office will be located at No. 10 North Fourth Street, and will be ready for business on March 1. This date will mark the termination of the Ohio Brass Company's arrangements with the Watts & Uthoff Supply Company, who have acted as its sales agents in that territory for several years past. The new office will be under the management of E. C. Brown, who, for many years, has been actively identified with the electric railway trade and will be assisted in the office by N. W. Biggart, who has been transferred from the home office for that purpose. Traveling salesmen will be added to this office as soon as its organization has been completed, and customers in the St. Louis territory will now be even better served than heretofore.

The new branch office at Atlanta, Ga., will be ready for business March 15, and will be under the management of J. E. Slimp. R. I. Courtney will assist Mr. Slimp in the office and a staff of traveling salesmen will start to call upon the trade as soon as the office is formally opened. The Atlanta office will be located in room 308, Peters Building, corner of Wall and Peachtree Streets. The warehouses will be in the same building, and sufficient stock will be carried to fill all rush orders.

Several new acquisitions have recently been made to the home office force at Mansfield. These additions are made necessary by the rapidly increasing volume of business, consequent to the completion of the Ohio Brass Company's new factory buildings. These additions are as follows: J. F. Little is assistant in the line material division of the railway sales department. He was formerly connected with the sales department of the Western Electric Company, in Chicago. C. C. Beck has assumed the position of commercial engineer, having been previously assistant superintendent of the Ideal Electric Company. C. V. Marks is personal assistant to the secretary. H. C. Moran is assistant in the rail-bond department, having been previously connected with the Western Electric Company. A. W. Campbell is assistant in the office of the vice-president. H. W. Young, formerly with the Cutler-Hammer Manufacturing Company, of Milwaukee, Wis., is assistant in the advertising department.

## AMERICAN STREET AND INTERURBAN RAILWAY ACCOUNTANTS' ASSOCIATION

As announced in the STREET RAILWAY JOURNAL for Feb. 2, a sub-committee on interurban accounts has been appointed by President Tingley, of the American Street and Interurban Railway Accountants' Association, and consists of the following: William H. Forse, Jr., assistant treasurer, Indiana Union Traction Company, Anderson, Ind.; A. B. Bierck, auditor, Long Island Electric Companies, New York; A. C. Henry, auditor, Lake Shore Railway Company, Norwalk, Ohio. It will be supplemental to the committee on standard classification of accounts, the purpose of the supplemental committee being to formulate a classification of accounts suitable for the use of interurban electric railways. The committee is desirous of securing an expression from each member, and suggestions, gleaned from past experience, that will enable them to provide a classification which will meet the requirements of interurban construction and operation, and requests that the following questions be answered, supplemented with any criticisms or suggestions that will enable the committee to understand clearly the position of each member company on this proposition:

1. Do you use the standard system of electric railway accounting approved by this association?
2. In what respect do you modify same, if at all?
3. Do you think it advisable to add new accounts and what ones do you recommend?
4. Do you recommend any change in the position of accounts under the general headings?
5. Do you use subsidiary accounts?
6. Have you made any use of the classification prescribed by the Interstate Commerce Commission for the use of steam railways?
7. What is your interurban mileage?

It is requested that the questions be answered with respect to construction as well as operating accounts. If a printed or written classification is used the committee will appreciate a copy. Replies should be sent to William H. Forse, Jr., assistant treasurer, Indiana Union Traction Company, Anderson, Ind., not later than Feb. 25.

## MR. SHONTS ON THE SITUATION IN NEW YORK— PRESIDENT McCARTER ON NEW JERSEY

Theodore P. Shonts, president of the Interborough-Metropolitan Company, at the banquet of the Iowa Society in New York, Thursday evening, Feb. 14, said that some of the railroads of the country were largely responsible for part of the troubles that had been brought upon them by the attitude of some of the managements, that the roads were run for their own particular benefit. Speaking of the Interborough, he said: "The owners of New York's transit facilities have followed the rule which has governed transportation companies generally throughout the country, namely, enlarging their facilities by piecemeal, with the result that before one set of improvements has been finished the volume of traffic has exceeded its capacity. The first problem is to devise ways and means even though necessarily of a temporary character, which will give relief from the aggravations of the existing congestion. To this problem we shall give our instant and best attention. The second and broader problem is to prepare plans looking to the future, comprehensive enough to provide adequate facilities for the next fifty years of the city's growth, and a scale liberal enough to give it better transportation than is furnished the people of any other city in the world. The plans should safeguard the rights of the traveling public, the rights of the city and the rights of the stockholders. I hope within a reasonable time to submit to the proper authorities, for a free and fair and frank discussion, a proposition drawn on the lines I have indicated with the conviction that an agreement will be reached which will be satisfactory to the municipal authorities, to ourselves and to every fair-minded and thoughtful citizen."

Along similar lines were the remarks of President McCarter, of the Public Service Corporation of New Jersey, in Plainfield a few evenings ago. He said in part:

"The few years prior to 1903 had been formative or constructive years of the underlying companies. It was a strenuous undertaking, and undoubtedly shortened the lives of Vice-President Hobart and the late B. M. Shanley, of Newark. But from the present standpoint, it is clear that they made mistakes, in that they over-discounted the future and over-capitalized some of the great properties they constructed. In the course of a short period these securities became widely scattered in the hands of the investing public. While we all, I think, disapprove now of the extent to which this over-capitalization was carried on, we must remember that the theory on which it was based was justified at the time, both by law and public sentiment.

"By the winter of 1902-1903 it was evident that without new capital for necessary improvements and for the restoration of impaired credit, the railroads could not go on. Something had to be done, and that quickly, or a great financial panic stared New Jersey in the face. The railroads could not meet their accruing obligations. This was becoming generally known, and I knew it professionally. The policy of the constituent companies was shaped by a comparatively small number of men. To these gentlemen I suggested the formation of a new company, with a large cash capital, which should acquire, upon fair terms, all the constituent properties, good and bad, represented by them, the theory being that during the critical period the strong and prosperous should carry the financially and physically weak properties.

"Thus the Public Service was formed, with a cash capital of \$10,000,000, fully paid up, without one dollar of water. It shortly acquired all of its gas and many of its electric properties by lease. The stocks of the financially embarrassed railroads and of the United Electric Company of New Jersey, which was also in a struggling condition, were exchanged for the obligations—not the cash—of the new company, but in the doing of it approximately \$60,000,000 of stock obligation was transformed into approximately \$20,000,000 of new obligations. This transaction was certainly free from the injection of water."

## A NEW ENGINEERING FIRM

The firm of Mudge & Neefus has recently been organized by Chas. A. Mudge and H. V. H. Neefus, with headquarters at No. 20 Broad Street, New York City, as railway and electrical engineers. Mr. Mudge has been connected in an engineering capacity with a number of manufacturing firms, among them the Westinghouse, Bullock and Sprague Electric Companies. In 1900 he was engaged by the Allgemeine Elektrizitäts-Gesellschaft, of Berlin, Germany, to design a line of railway apparatus which was put on the market with great success by the company. He was also in charge of the engineering work of the 1903 Zossen high-speed tests, and has contributed several articles on the subject of this work to this journal and to technical societies. Since Mr. Mudge's return to this country he has been engineer of the railway department of the Electro-Dynamic Company, of New York City. Mr. Neefus, the other member of the firm, has been connected with general engineering and contracting work in different parts of the United States, and has been instrumental in the development and introduction of a number of mechanical devices. He was also identified with the Electro-Dynamic Company during the early years of that company. He was later appointed manager of the Von Zweigbergk Controller Company, and was recently elected secretary of the Suergard Sanitary Engineering Company.

In addition to the regular business of consulting railway and electrical engineers the firm is prepared to give advice on the design and construction of motors, generators, brakes, systems of control, etc., for railway service. It expects to devote special attention to engineering work in reference to consulting and superintending the installation of electric conveying machinery for railway and steamship terminals, also the installation of material conveying plants for factories, gas works and industrial plants, and also for coaling machinery. This field has grown to such enormous proportions that the services of independent consulting engineers along this line will be of great value to users of this class of apparatus.

The question of heavy electric railway traction in connection with trunk lines will also be a branch of the engineering work of this firm.

**REPORT OF TWIN CITY RAPID TRANSIT COMPANY  
FOR YEAR—REFERENCE TO AMUSEMENT EX-  
PENDITURES BY PRESIDENT LOWRY**

The gross earnings of the Twin City Rapid Transit Company for the year ended Dec. 31, 1906, amount to \$5,644,988, as compared with \$4,759,263 for 1905, an increase of 18.61 per cent, and net earnings of \$3,019,609, as compared with \$2,640,117 for 1905, an increase of 14.37 per cent. The difference between the gross and net increase is largely due to an increase of 10 per cent in employees' wages and the increased cost of all raw materials. The income account for the year ended Dec. 31, 1906, shows the following, with comparison with the two previous years:

	1906	1905
Gross earnings .....	\$5,644,988	\$4,759,262
Expenses .....	2,625,379	2,119,145
Net earnings .....	\$3,019,609	\$2,640,117
Interest and taxes.....	1,137,427	1,050,797
Surplus .....	*\$1,882,182	\$1,589,320
Dividends .....	1,162,500	1,091,387
Surplus .....	\$719,682	\$497,933
Appropriation for renewal funds....	482,000	340,000
Surplus .....	\$237,682	\$157,933

\* After deducting the full 7 per cent on the \$3,000,000 preferred stock, the balance, \$1,672,182, available for common stock, shows 8.32 per cent on the \$20,100,000 outstanding.

In his report President Lowry says: "During the year the management has paid particular attention to the matter of amusements along its lines, and more especially to its parks at the terminus at Excelsior, Lake Minnetonka. It has developed a large business in this connection by judicious advertising. The expenses incurred thereby largely account for the increase in the general expenses. During the year there were issued and sold \$1,000,000 consolidated 5 per cent bonds, due 1928, and \$2,100,000 common stock. The interest and dividends accruing on these issues, after deducting premiums received on the sale thereof, amounted to \$63,500. This amount was charged against income as in previous years, although these issues were made to defray the cost of new construction. During the boom of 1902 there was started outside of the city limits two villages for manufacturing purposes, St. Louis Park on the southwest, a distance of 6.1 miles from the city limits, and Robbinsdale on the northwest, a distance of 2.2 miles. Great pressure was brought to bear on our company to make extensions to these suburbs, but instead of doing so we secured the Minneapolis rights to connect with both villages. We then leased these rights to parties desiring to build, reserving the privilege to purchase whenever we saw fit. We recently concluded that the time had arrived when it would be to our advantage to take them over. We accordingly purchased the St. Louis Park Line for \$40,000 and the Robbinsdale Line for \$30,000. These lines will pay their operating expenses and interest on the investment. From the surplus of \$257,932 earned in 1905, your directors have appropriated \$100,000 to the renewal fund. During 1906 the fund was further increased by the addition of interest on the investments. We estimate the depreciation on the properties of the company for the past year to be \$482,000. During the year there was expended for car replacement and track construction \$480,783. The balance of the credit of the renewal fund now stands at \$590,449, of which \$363,500 is invested in bonds.

"A statement of extensions and improvements made during the year shows a total distribution of \$2,648,518, of which \$1,034,514 was for new power.

"On May 1, 1906, \$20,000 of the 7 per cent bonds of the Minneapolis Street Railway Company were redeemed. An equivalent amount of first mortgage consolidated bonds may be issued in place of them. They will be used as an investment for a corresponding amount of the renewal funds, as will also be the amount similarly redeemed in 1905, in all \$40,000."

**THE SITUATION IN NEW ENGLAND**

In commenting on the general situation in New England as concerns the New York, New Haven & Hartford Railroad, the Boston News Bureau has this to say: People who think that the New York, New Haven & Hartford Railroad is to remain a Connecticut toll-gate rail line between Boston and New York have not adequately measured the western training, breadth of view or the ambitions of President Mellen. It ought to be perfectly obvious to men who view a situation in a broad way that Mr. Mellen is not buying Maine steamers and Philadelphia steamers for the purpose of going into the ocean steamship business. He must be buying these lines with broader plans. Neither is Mr. Mellen buying trolley lines in Connecticut and Rhode Island without understanding that the Massachusetts Electric, surrounding Boston and covering the whole of Eastern Massachusetts between Rhode Island and New Hampshire, is the greatest trolley field in New England, and the key to several transportation situations. But Mr. Mellen's trolley and steamship policy is carrying him north, and the millions he has recently accumulated may yet mean the absorption of the Massachusetts Electric or the Boston & Maine, or both, and may have some direct relation to the Boston & Albany. Mr. Mellen has his eye on both Massachusetts Electric and the Boston & Maine, and it is on the map and in logical sequence that the New Haven quit the water and become the great railroad power of New England, with the best traffic area in the country to offer in interchange for business. Under a broad-gauge policy, President Mellen can do for the New England seaports and for New England, greater good than can come to these interests from any other business or transportation factor in the United States.

**STREET RAILWAY PATENTS**

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

UNITED STATES PATENTS ISSUED FEB. 5, 1907.

842,852. Electrical Contact Apparatus; James C. Boyd, New York, N. Y. App. filed Dec. 16, 1905. A spring-impelled contact shoe or blade for the third rail of electric trains. Adapted to be used with two or more third rails at different levels with respect to the running rails.

842,915. Rail-Joint; Archibald W. Shaw, Drew, Miss. App. filed Sept. 25, 1906. Comprises a chair which is in two separate interlocking sections provided with rail-engaging means.

842,930. Railway Switch; Thomas K. Wilson, Chillicothe, Ohio. App. filed Nov. 18, 1905. Means for operating a switch which is arranged to permit manual closing or opening of the switch or automatically closing of the switch by the movement of the train; has a mechanically arranged tappet depressed by the wheels in passing which closes a circuit.

842,957. Electric Car and Locomotive; Coloman De Kando, Buda-Pest, Austria-Hungary. App. filed May 12, 1904. Relates to motors having cranks with pitman connections to the driven mechanism. The journal boxes are made with a special bearing to receive the driving thrusts communicated by the crank shaft.

843,039. Train Dispatching System; Charles E. Scribner, Jericho, Vt. App. filed July 9, 1906. Comprising a signal circuit extending from a principal to an outlying station and having at the principal station means for setting a signal at the outlying station at safety or danger position, as desired, and at the same time placing a test signal at the principal station under the control of said signal at the outlying station.

843,119. Railway Joint; Reuben B. Swank, Dayton, Ohio. App. filed Jan. 8, 1906. Comprising a supporting chair, an interlocking side plate bolted to the rails and an inclined key to be locked with a spike.

843,135. Rail Joint; Joseph J. Cousins, New York, N. Y. App. filed Oct. 31, 1905. Comprises a key-bolt engaging the fish-plates and the webs of the abutting rails.

843,182. Circuit Closing Mechanism for Indicators on Cars; Thomas W. Small, Cleveland, Ohio. App. filed May 17, 1905. The trucks have depending arms with rollers which are impelled

upward by projections adjacent to the track rails so as to close a signal or indicating circuit on the train.

843,232. Anti-Creeping Attachment for Rails; Tracy L. Paine, Milwaukee, Wis. App. filed April 30, 1906. Comprising a pair of clamping jaws having rail-gripping faces and depending opposing feet having horizontal-supporting engagement one with the other, to prevent their separation in a vertical direction, a tie-bolt engageable with the jaws and a nut engageable with the bolt.

843,261. Electric Tram Car; George J. Conaty, Smethwick, England. App. filed July 6, 1904. A single-truck car in which the two axles have a radial movement to the track or curve. The driving motors also have the same radial movement as the axles, and therefore drive equally well in whatever positions the axles may be.

843,262. Brake Mechanism for Tram Cars; George J. Conaty, Kings Heath, England. App. filed May 22, 1906. Relates to improvements on the preceding invention.

843,308. Railway Tie; Herman G. Staab, Milwaukee, Wis. App. filed Aug. 23, 1906. An I-beam tie having U-shaped cuts in the top thereof, the tongue formed thereby being bent up into rail-engaging clips.

843,351. Metallic Tie and Rail Fastener; Hubert W. Mulvey, Glassport, Pa. App. filed Aug. 14, 1906. A yoke engages one side of the base flange of the rail, said yoke being keyed in a recess in the tie.

843,373. Trolley; John Struth and Conrad Holzapfel, Primrose, Pa. App. filed June 23, 1906. A pair of guard arms spring-pressed together above the trolley wheel to confine the wire thereon.

843,409. Rail-Joint; John L. Mertins, Wolfe City, Tex. App. filed June 19, 1906. The abutting rails have a slot and tongue connection with each other.

843,418. Single Rail Electric Overhead Railway with Suspended Vehicle; Hippolyte Romanoff, St. Petersburg, Russia. App. filed June 1, 1905. Relates to the construction of the wheel frame and the manner in which the cars are suspended.

843,445. Trolley Controlling Device; Jonathan Dale, Kinston, N. C. App. filed July 9, 1906. Details of a spring drum and ratchet device.

843,455. Derailer; Stanley W. Hayes, Geneva, N. Y. App. filed Aug. 16, 1906. Comprises a wheel-derailing member, a rocking link supporting the derail block end of said member and adapted to impart a lifting movement thereto, means for slidingly supporting the other end of said member and an operating connection attached directly to said derailing member.

843,473. Switching Device; John N. Marley, Edward F. Manett and Frank M. Dannelly, Dallas, Tex. App. filed July 17, 1906. An electrically operated switch-tongue-throwing mechanism including a special construction of motor having a vertical shaft and an annular gear with a pitman connection to the switch point.

843,475. Metallic Rail Tie; William G. Martin, Otter Creek, Florida. App. filed Sept. 20, 1906. A hollow metallic tie having spaced bearers therein located beneath the rails mounted on the tie, one side of the tie having an opening under the rail to permit access to the rail-engaging bolts.

843,492. Metal Railway Tie; Arthur O. Ridgway, Denver, Col. App. filed June 11, 1906. A metal tie composed of inverted arch-shaped end members and a central member approximately rectangular in cross-section.

## PERSONAL MENTION

COL. GEORGE W. DUNN has sent to Gov. Hughes, of New York, his resignation as State Railroad Commissioner.

MR. CARL W. WILCOXEN, for some years superintendent of the Western Ohio Railway Company, with headquarters at Lima, Ohio, on his departure for Pittsburg to take up his new duties as general superintendent of the Pittsburg & Butler Street Railway Company, was presented with a diamond stud by the employees of the operating department as a token of esteem.

MR. W. C. SMITH, for a number of years general manager of the lines of the Mahoning & Shenango, at Youngstown, who is now in Pittsburg, will succeed Mr. T. C. Armstrong, of New Castle, as division superintendent, who is to be appointed to a more important position with the company, of which announcement is to be made in the future.

MR. ERNEST GONZENBACH, in addition to his duties as vice-president and general manager of the Sheboygan Light, Power & Railway Company, has since Jan. 1 held the position of general manager of the Greensboro Electric Company, which operates the street railway system, electric light plant, gas plant and city pumping station of Greensboro, N. C. Mr. Gonzenbach will divide his time between the two properties, probably spending the greater portion of the winter season at Greensboro and of the summer period at Sheboygan.

MR. A. G. MAISH, superintendent of the Des Moines City Railway Company, of Des Moines, Ia., has been appointed to the newly created position of assistant general manager of the company, under Mr. G. B. Hippee, who is general manager of the Des Moines Company, and vice-president of the Interurban Company. Mr. W. G. Owens, former superintendent of way and structure, has been elected superintendent to succeed Mr. Maish. Mr. Owens has been with the City Railway Company fifteen years, coming to Des Moines from Newport.

MR. JAMES BLAKE CAHOON, vice-president and consulting engineer of the Eldenhel Construction Company, of New York, who has been prominent in engineering and street railway circles for a number of years, died at New Rochelle, Sunday, Feb. 17. Mr. Cahoon was born at Lynden, Vt., in 1859, and entered the United States Naval Academy as a cadet-midshipman in 1875. Soon after his graduation in 1879, Ensign Cahoon was detailed to electrical work at the Newport (R. I.) naval station, where in experimental work he injured his sight, and was placed on the retired list. Then he became connected with the General Electric Company, and as chairman of the local companies committee at different times supervised the thirty-nine lighting and street railway companies owned by the company. In 1895 he resigned from the General Electric Company to become general manager of the Elmira Improvement Company, of Elmira, N. Y., controlling the electric light, railway, gas and water plants of that city. Leaving that company in 1899 his interests since then have been largely with the electric light industry.

MR. ALBERT H. STANLEY, whose appointment to the position of general manager of the railway department of the Public Service Corporation of New Jersey was announced in the *STREET RAILWAY JOURNAL* for Jan. 12, 1907, has resigned from the company to become connected in a similar capacity with the Underground Electric Railway Company, of London, England. Although Mr. Stanley acted under the title of general superintendent from the time of his becoming connected with the Public Service Corporation up to the date of his appointment as general manager, he has shared the duties of manager for the past two years with Col. Edwin W. Hine, the vice-president.



ALBERT H. STANLEY

Contemporary with the formation of the Public Service Corporation and the appointment of Mr. Stanley to the company, the rehabilitation of the street railway properties entering into the merger began. Mr. Stanley more than any one else has been charged with the responsibility for the new work of the railway department, the excellent results of which are beginning to manifest themselves. Mr. Stanley was born in England, and has an experience of seventeen years in street railway work, for the most part in Detroit. During this time his record has been one of constantly being given added responsibilities. He expects to sail for London about April 1. A biographical sketch of the new manager of the Underground Electric Railways Company, of London, was published in the *STREET RAILWAY JOURNAL* for Jan. 12.