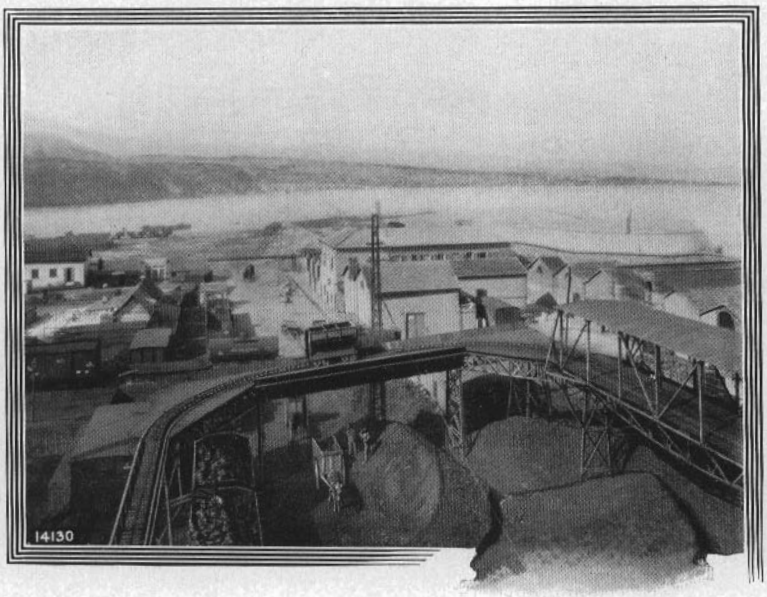
"Hunt" Cable Railways

CATALOGUE No. 0415

Hunt Cable Railways

FOR HANDLING COAL AND MERCHANDISE



C. W. HUNT COMPANY

ESTABLISHED 1872

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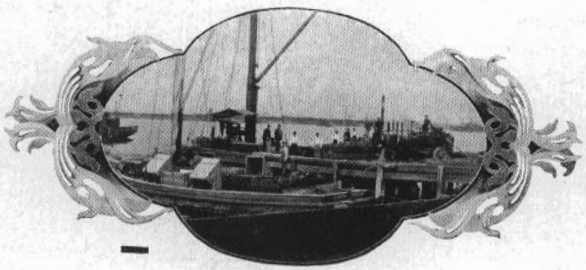


THE LEHMAIER PRESS, N. Y.

Introduction

BUSINESS MEN must elect what class of customers to deal with. We seek that class of purchasers who wish articles built thoroughly well, with every part thoroughly made from the best materials, and who are willing to pay whatever amount may be necessary to obtain such articles. For this reason we give no anxious thought as to whether this or that can be made a little cheaper, but have the materials and workmanship just as thoroughly good as possible, the sole criterion being whether the article will be better adapted for its work or more durable in use.

It is a common idea that, because coal and many other bulky materials are rough, heavy, or dusty, machinery for handling them is crude and poorly constructed. This is a wholly mistaken belief. It may seem at first sight to be a useless refinement to work to templets, grinding shafts on centers to vary less than one thousandth of an inch, making taper fits and other refinements of modern mechanism, on machinery to be roughly handled, covered with grease and dust, and exposed to every storm, but experience shows that it is a positive economy. Durability in service and freedom from delays amply justify this painstaking care and expense.

We do not care to sell any machine that is not as good in every respect as though the purchaser himself had selected the materials, and personally supervised its construction in our factory.

Our customers are entirely those who use and wear out the article they purchase; consequently, quality takes precedence of cost with them. Having no trade with middlemen, and paying no commissions, there is no temptation to reduce the quality of articles to compete with those who seek that class of business.

For the production of our special line of manufacture, we have had an especially valuable experience for correctly designing our machinery, together with a shop fitted with special machine tools for the accurate and economical execution of work, which we believe to be, not only unequalled but unapproached by any manufacturer of this line of machinery. With an experience of over thirty years in this special line of work the purchaser gets the benefit of the cumulative information gained by experiments, by successes and by misfits.

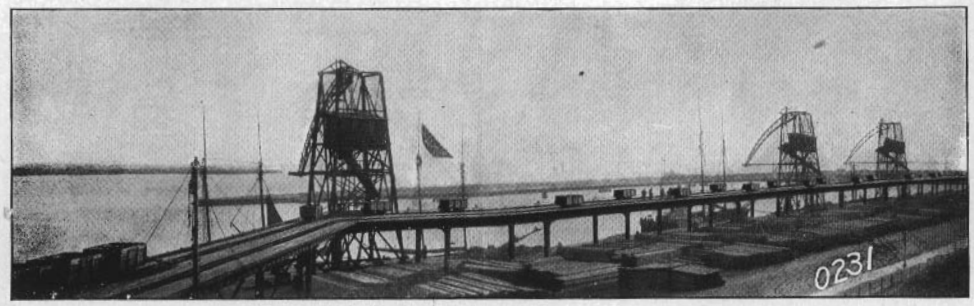
Our works are completely equipped with specially constructed machine tools, each one designed and built to perform some special operation on their product. Each tool, with but few exceptions, is driven by an electric motor directly attached to or built into the machine. The shops are steel constructed with glass and slate roofs, and so absolutely fireproof that no fire insurance is carried on them.

The efficient system of shop accounting, the special machine tools, and the limits of accuracy of the machine work are not kept secret but are freely shown to those who care to visit the works. Purchasers are especially invited to see for themselves the ample facilities, the quality of materials, the accuracy of the work of machine tools and the completeness of the equipment.

Readers of the catalogues and advertisements issued by us are requested to bear in mind the fact that rhetorical expressions and superlative adjectives are rigidly excluded therefrom. It is the intention that every statement shall not only be correct in a business sense, but shall also be accurate in an engineering sense. When materials are mentioned in a description, they will be designated by their correct engineering terms, and not by fancy, obscure or semi-misleading names.

HUNT CABLE RAILWAYS.

For Handling Coal and Merchandise.



No. 0231

Hunt Cable Railway at the Copenhagen Gas Works, Copenhagen, Denmark.

The Cable Railway is a very old system of operating cars, and limited in its application. It is used most extensively in mine haulage and in manufacturing establishments for carrying heavy materials from point to point, as may be needed. The method of operation is by a running wire rope to which the cars are either permanently or temporarily attached. The rope moves at any desired speed, taking cars with it, either up inclines or around curves, as the situation may demand.

Flexibility.—As any amount of power, strength and flexibility can be obtained, it is exceedingly well adapted for situations where there are heavy grades, or where many changes of curvature in the line are necessary.

We build three varieties:

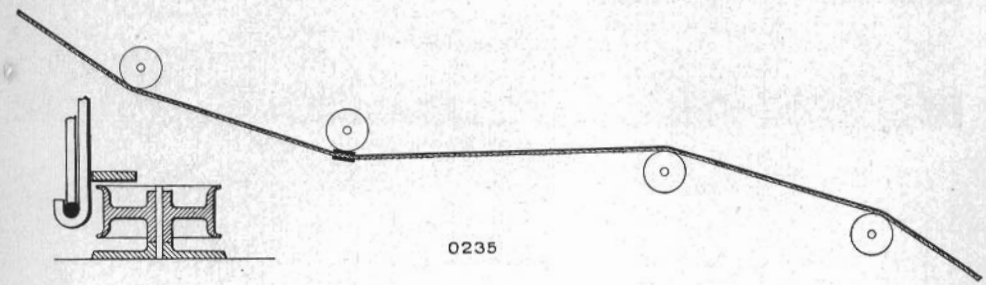
Heavy Cable Railway.—This type of cable railway is operated by a constantly running steel cable, to which the cars are attached at will at any point, and are drawn around the tracks by the cable until the grip is released.

Double Shuttle Cable Railway.—Two cars are used, one going out loaded and the other returning empty, passing each other on a switch, or they may run on a double track.

Single Shuttle Cable Railway.—One car is used, which is drawn by power outward to the dumping point, automatically dumped, and then drawn back to the loading point.

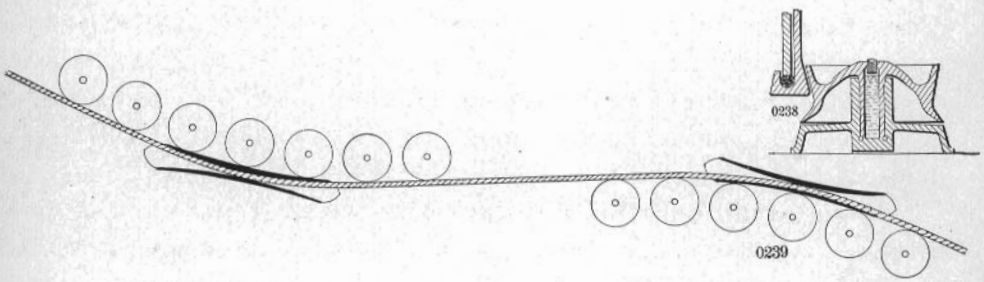
CABLE GRIPS.

Old Grips.—In the old system of carrying the rope around the curves, the pulleys were spaced a considerable distance apart, the rope being bent to an abrupt angle around a small sheave, which necessarily shortened the life of the rope. The grip intensified this by making a still shorter bend on each side of the clamp. The violence in passing the pulleys made it necessary to have an iron guide over the pulleys which held the grip clear of the pulleys as it slid around the curve. This, however, did not prevent great injury to the rope, due to the short bends at the grip as it passed each sheave. The short bending of the rope can be seen in cut 0235.

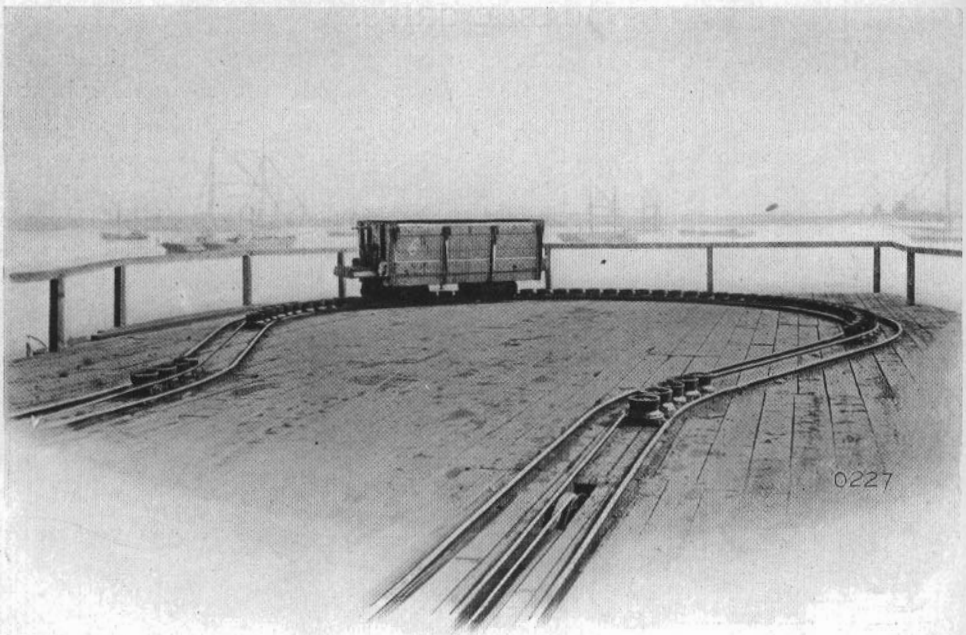


0235.

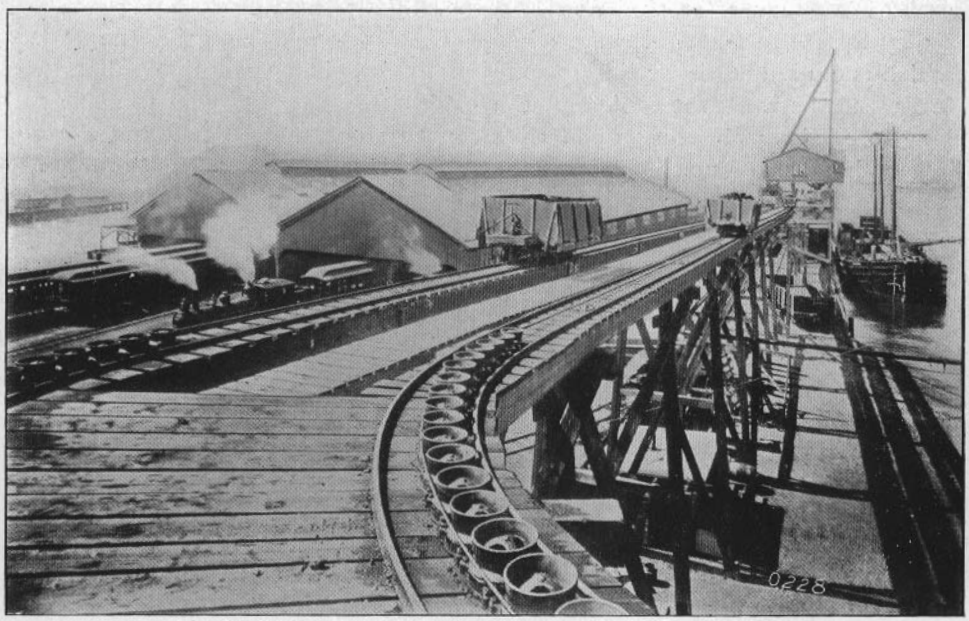
New Grips.—A series of rollers are arranged close together around each of the curves, as shown on pages 6 and 7, making it equivalent to a pulley 24 feet in diameter. Attached to the car is a cable grip, the shoe of which is curved at either side to run smoothly against the cable rollers as it intervenes between the cable and the cable rollers. The shoe is sufficiently long to be always bearing upon three or more of the rollers, and the rope groove in it is so formed that the cable bends in a smooth curve of very large radius. The curve pulleys hold the grip in position thus doing away with the curved guide-bar hitherto always necessary. This relieves the rope of short bends, excessive strains, and the expense and trouble caused in keeping the guide-bar greased; in addition, the life of the cable is increased from months to years.



Hunt Patent Grip and Curve, with no short bends in the rope. Pat. 522,713, July 10, 1894.

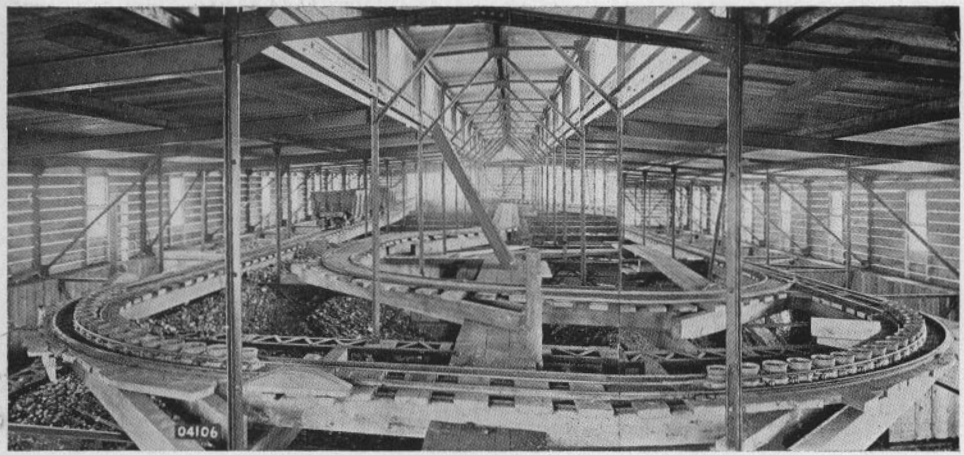


No. 0227.



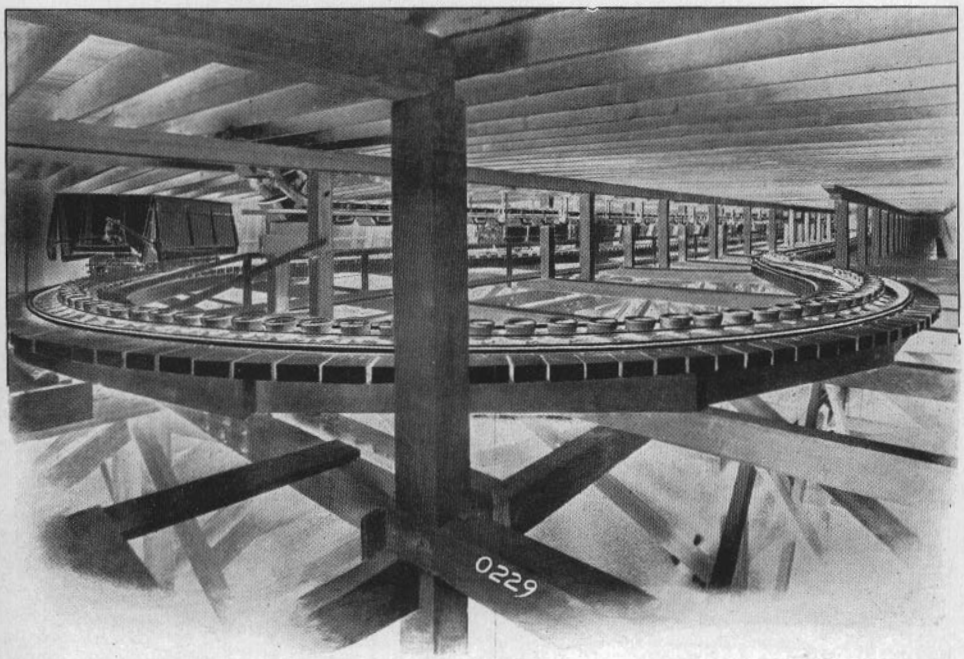
No. 0228,
Cable Railway of the C. W. Claflin Co., Boston, Mass.

These cuts show the method of carrying the rope around the curves on a continuous series of pulleys that prevent the short bends in the cable so injurious to its life. It is equivalent to running this cable over a pulley 24 ft. in diameter.



No. 04106.

Curve in the Cable Railway over the Coal Pocket at the New Bedford Gas & Edison Light Company. In the immediate foreground is shown the block which operates the dumping gear of the car.

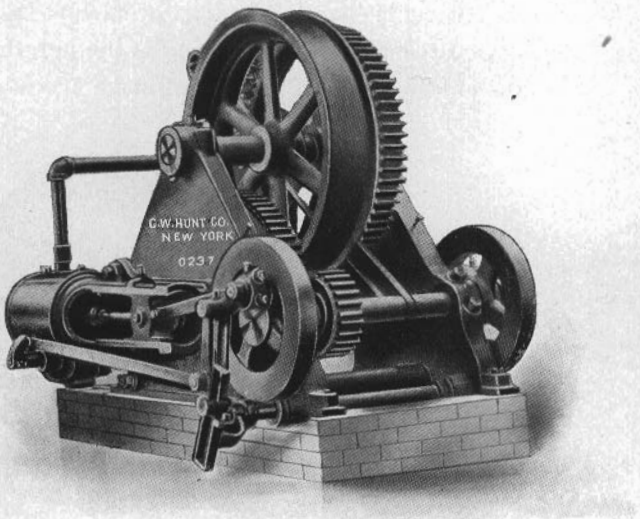


No. 0229.

The Curve in the Cable Railway over the Coal Pocket, at the Fifty-second Street Station, Brooklyn Heights R. R., showing the arrangement of the self-lubricating carrying wheels.

HEAVY CABLE RAILWAY.

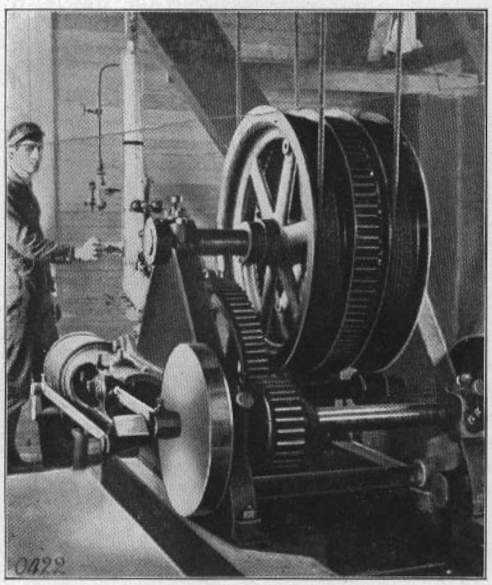
The heavy cable railway is usually arranged so that the track forms a continuous line, enabling a car to pass over the whole track and back to the starting point, automatically dumping its load at any point desired.



No. 0237.
Hunt Double Cylinder Non-Freezing Steam Engine Cable Driver for Cable Railways.

Elevated Tracks.—The tracks are usually elevated 15 to 20 feet above the ground and laid with the Hunt "Industrial" narrow gauge (21½ inches) rails. The cable runs continuously, supported on the straight line by idle pulleys and on the curved parts by special horizontal pulleys.

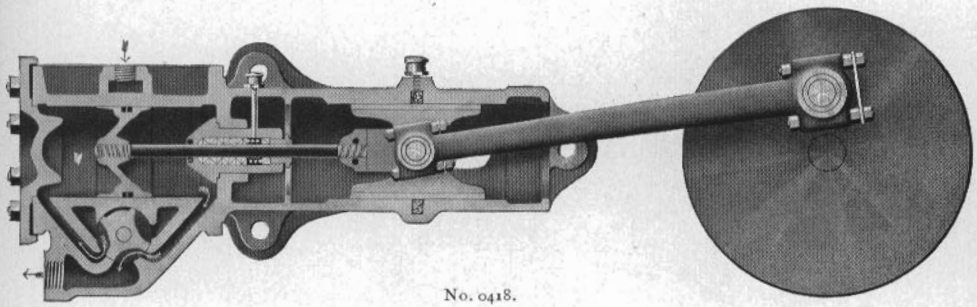
Speed.—The cars are run at a slow speed, so that a workman can step on or off at any point with safety while they are in motion. The requisite capacity for handling any quantity of coal is obtained by using a sufficient number of cars.



No. 0422. Hunt Double Drum Back Gear Steam Cable Driver.

Electric Driving.—For plants where electric current, either direct or alternating, is available, we furnish our driving mechanism with an electric motor, directly attached to the driving drum.

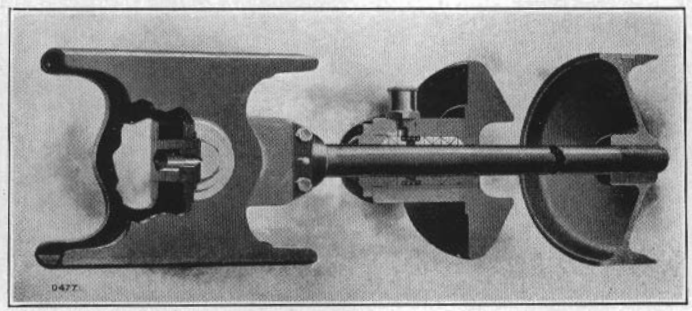
Steam Driving.—For driving the cable, we build a special steam engine (cuts 0237 and 0422, page 8) with two cylinders of such power as the length of railway, the number of cars in use, and the grade of the tracks, make necessary.



No. 0418.

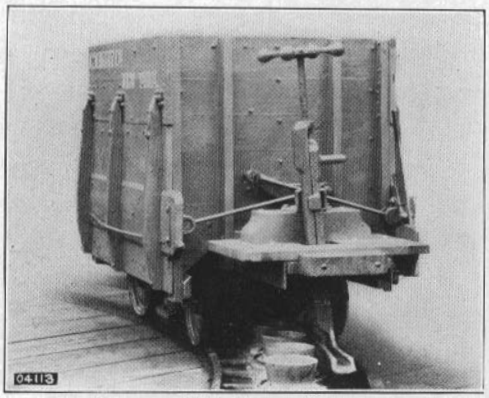
Cross Section of Hunt Steam Engine.

The steam ports, the steam and the exhaust pipes all drain continuously downward, the steam entering at the top of the cylinder and the exhaust passing out at the bottom, so that not only is all condensed water immediately drained off, but every drop of the water from cylinder condensation is swept out of both the cylinder and the ports at each stroke of the piston, thus materially reducing the initial cylinder condensation. In starting, there are no pockets of water to plunge forward and endanger the engine. There is no danger from frost even in zero weather.

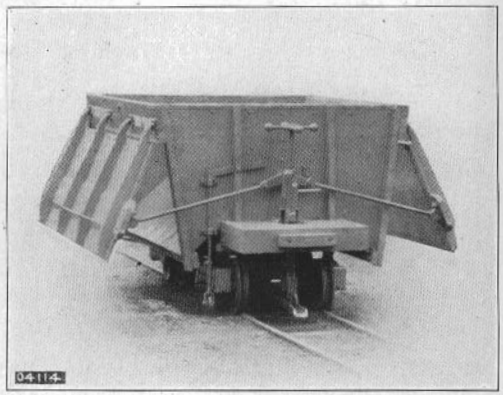


No. 0477.

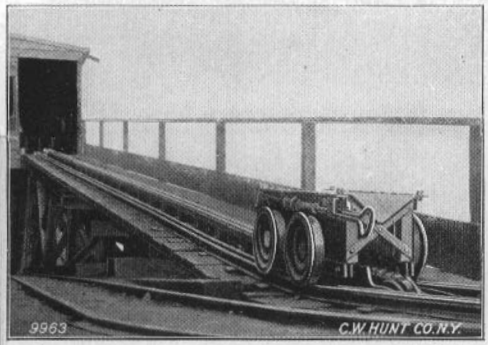
Cross-Head, Stuffing Box and Piston of the Hunt Engine.



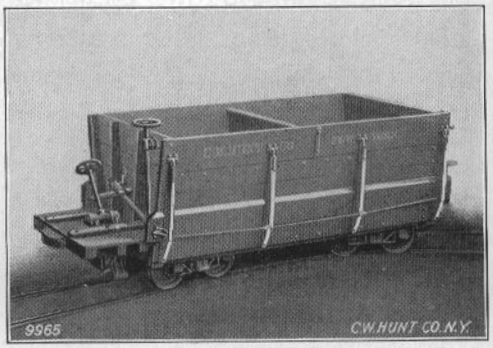
No. 04113. Cable Car rounding a curve.



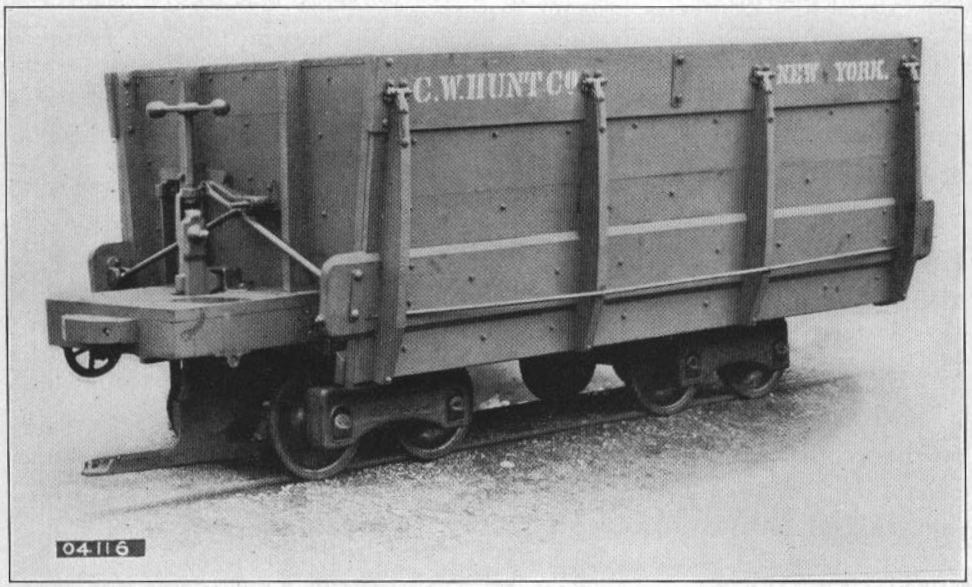
No. 04114. Cable Car with sides open in the dumping position.



No. 9963. Cable Car specially designed for carrying lead bars.



No. 9965. Cable Coal Car.



No. 04116. Two-ton Cable Car for Heavy Cable Railways. This car has the bottom inclined each way to the sides which open and dump the load on both sides of the track.

Safety.—The slow speed of the cars ensures freedom from accidents.

Economy.—So long as there is dumping room at the coal storage no workman is necessary on the line of the tracks, except at the loading point. Coal is delivered at any point on the tracks at substantially the same cost that it would be 50 feet away, with the exception of the increased interest and depreciation charge on the first cost of the plant.

Loading.—The cars usually carry about two tons of coal each, and when loaded at the wharf are gripped to the cable and proceed on their course, the slow speed making it safe to run them around the tracks without an attendant. The car follows the track around over the storage ground and pockets, dumping its load automatically at any desired point, and returning again to the wharf, making an entire circuit of the tracks. When it has reached the wharf a workman steps on board, unfastens the cable grip and runs the car under the loading hopper, where it is loaded and again sent over the tracks.

Number of Cars.—The number of cars needed is determined by the length of the track and the number of tons to be handled per day. Whenever from the growth of the business it is necessary to increase the speed of handling, more cars are put on the track, there being no other increase of cable or engines necessary.

Cars.—It is surprisingly easy to build a car that will run off the track on curves and changes of grade. Our extended experience enables us to furnish cars free from these defects, and suited in every respect for the service required. For carrying coal and similar bulky materials, cars like those shown in cut No. 04116, page 10, are used, but flat-top cars are used for carrying general merchandise. The weight and capacity of the cars can be made to suit the work to be done.

Scales.—Scales for weighing the material handled should, if possible, be placed at the point where the cars are loaded. If placed at other points the grip must be loosened from the cable and the car stopped on the scales, which would cause delay and usually extra expense in handling these materials.

Estimates.—As these tracks are built to suit the special work to be done, it is necessary in each case for us to make detailed plans for their erection and estimates of the cost. We will be pleased to make estimates of this kind upon receipt of such details as will be necessary to clearly understand the location and the work to be done.

DOUBLE SHUTTLE CABLE RAILWAY.

Tracks.—The double shuttle roads have either double tracks the whole length or a single track with a passing place, while the single shuttle roads have a single track without a passing place. A branch track is sometimes used to reach other buildings, as shown in cut No. 17, page 15.

Motor.—The driving motor can be a steam engine, similar to those shown for the heavy cable, cuts No. 0237 and 0422, page 8, or a motor driven by a belt. Electric driving can also be used when current is available.

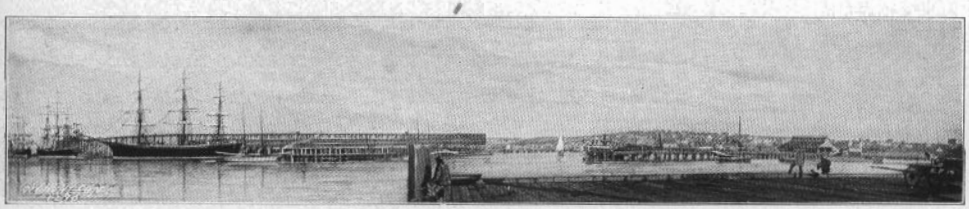
Car.—The car usually used for coal, phosphate, ore, etc., is a four-wheel car, shown in cut No. 04116, page 10. The bottom of the car inclines each way, and the load dumps out on each side of the elevated track. The dumping is automatic at any point where the dumping block is placed. Flat-top cars can be used whenever general merchandise is to be handled.

Curved Tracks.—If cable railway tracks were always level and straight the problem would be a simple one, but they are usually required in situations where curves and grades are a necessity, as will be seen in cuts showing the arrangement of tracks in several yards on page 15 and following pages.

No. 98174.

Shuttle Cable Railway.—The Eastman Company, New York.

SINGLE SHUTTLE CABLE RAILWAY.



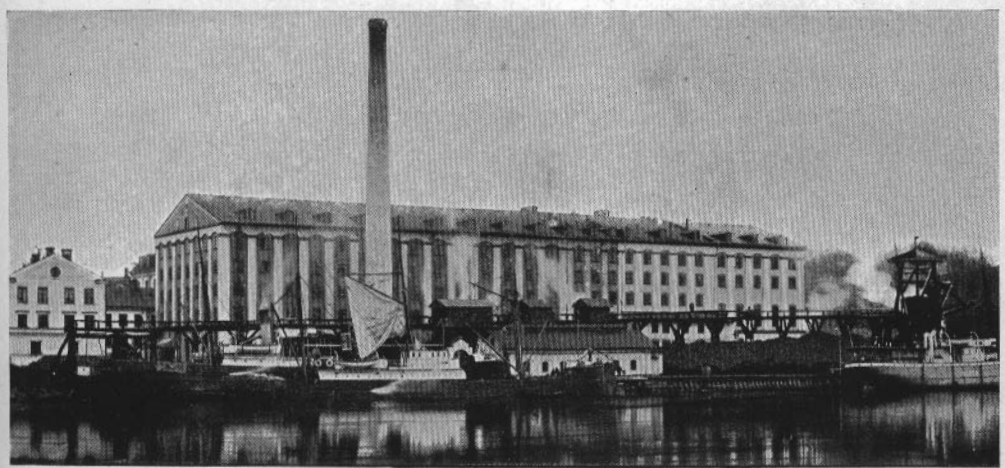
No. 1296.
Spreckels Brothers' Commercial Company's Wharf, San Diego, Cal. Elevators and Cable Railway.

Light Construction.—The cable runs on the side of the track and is comparatively small, as the loads are usually light. The pulleys are spaced some distance from one another and the whole construction distinctly lighter and cheaper than the heavy style.

Scales.—When material is to be weighed the scales are usually placed at the loading point. They may, however, be placed anywhere on the line, but the car must be at rest while being weighed.

Operation.—The operation of these railways is simple and inexpensive. The workman loads the car, starts and stops the motor, and the car dumps its load at any predetermined point, without requiring attention.

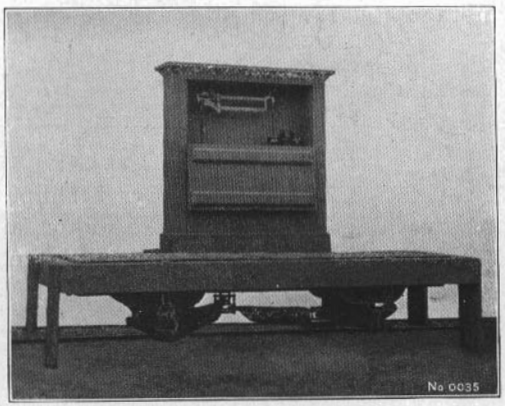
Estimates.—As these tracks are built to suit the special work to be done, it is necessary in each case for us to make detailed plans for their erection and estimates of the cost. We will be pleased to make estimates of this kind upon receipt of such details as will be necessary to clearly understand the location and the work to be done.



Aktiebolaget Tanto, Stockholm. Elevator and Cable Railway.

CABLE RAILWAY SCALES.

Cable Railway Scales are used with the track in the center of the scale platform, and the beam-box placed at such a distance that the weigh-master has room to stand between the car and the beam-box. On account of the width of the Cable Railway cars, and the distance the side doors open, it is necessary to place the scale beam sixty-six inches away from the center of the platform. The workman weighs the empty car on the upper beam, then loads the car and weighs the coal or other material on the lower beam. The scale beam is graduated to pounds, or to kilograms when so ordered.



No. 0035.

Cable Railway Scales, with the platform blocked up to show the mechanism.

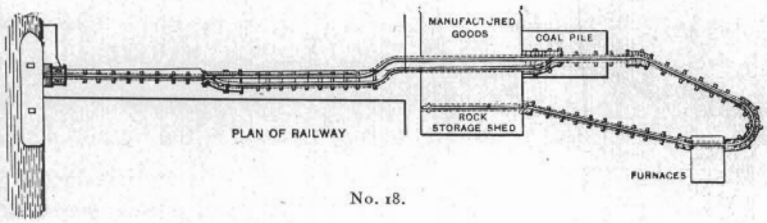
We supply all the working parts and ironwork, with which are shipped instructions to the purchaser for framing platform, building the beam-box, and setting up the scales. We do not furnish any of the woodwork.

TABLE OF CABLE RAILWAY SCALES.

With Double Beams.

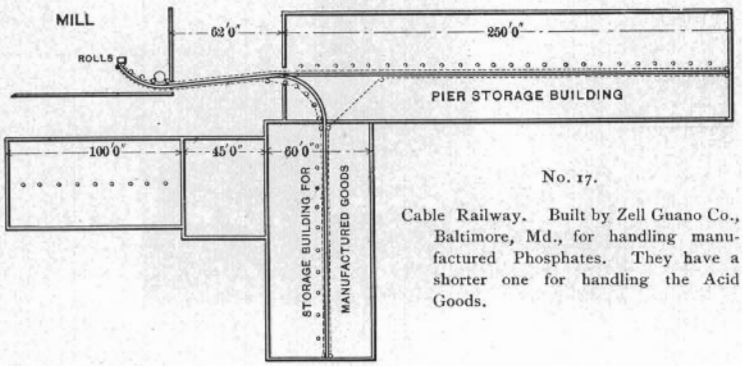
	Cable Cars
Capacity, tons	2
Length of platform, feet	8
Width of platform, inches	54
Center of platform to beam, inches	66
Price, F. O. B. New York, without beam-box	

PLANS OF CABLE RAILWAYS.



No. 18.

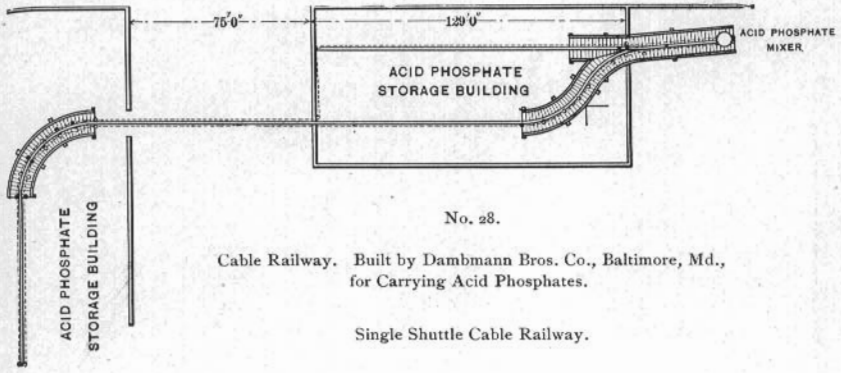
Plan of a Double Shuttle Cable Railway, 1469 feet long.



No. 17.

Cable Railway. Built by Zell Guano Co., Baltimore, Md., for handling manufactured Phosphates. They have a shorter one for handling the Acid Goods.

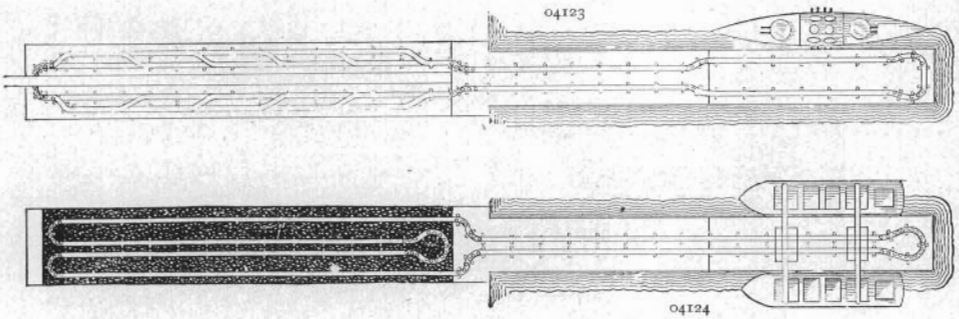
Single Shuttle Cable Railway.



No. 28.

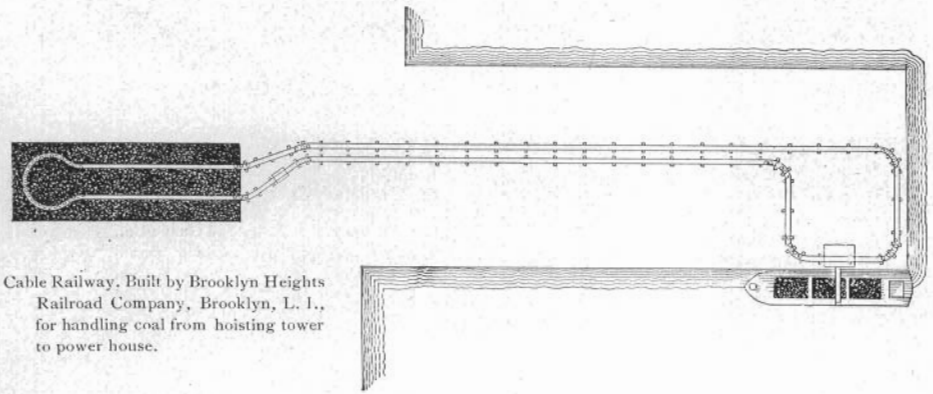
Cable Railway. Built by Dambmann Bros. Co., Baltimore, Md., for Carrying Acid Phosphates.

Single Shuttle Cable Railway.



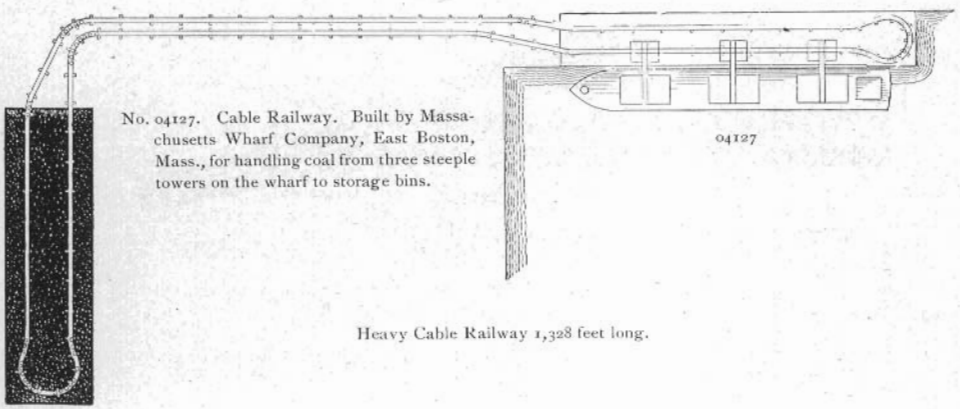
Nos. 04123–04124. Cable Railways at U. S. Coaling Station, Puget Sound, Washington.

One track 4,000 feet long transports the coal from the wharf to the coal storage pocket. A parallel railway returns the coal from the pocket to the shipping bins on the wharf, as required for use.



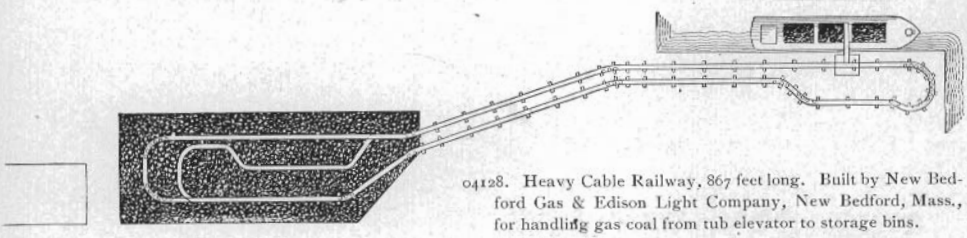
Cable Railway. Built by Brooklyn Heights Railroad Company, Brooklyn, L. I., for handling coal from hoisting tower to power house.

No. 04126. Heavy Cable Railway. Length of track 1,570 feet.



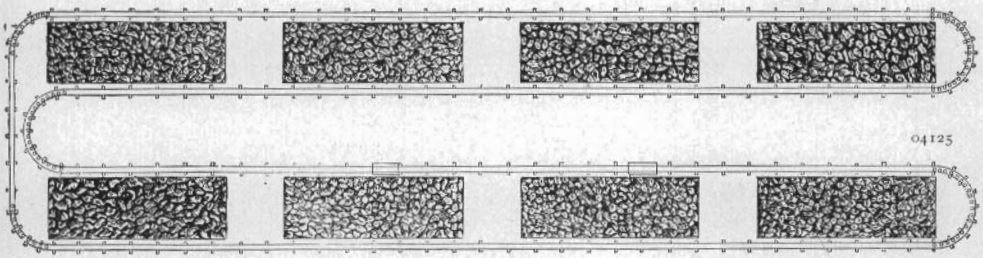
No. 04127. Cable Railway. Built by Massachusetts Wharf Company, East Boston, Mass., for handling coal from three steeple towers on the wharf to storage bins.

Heavy Cable Railway 1,328 feet long.

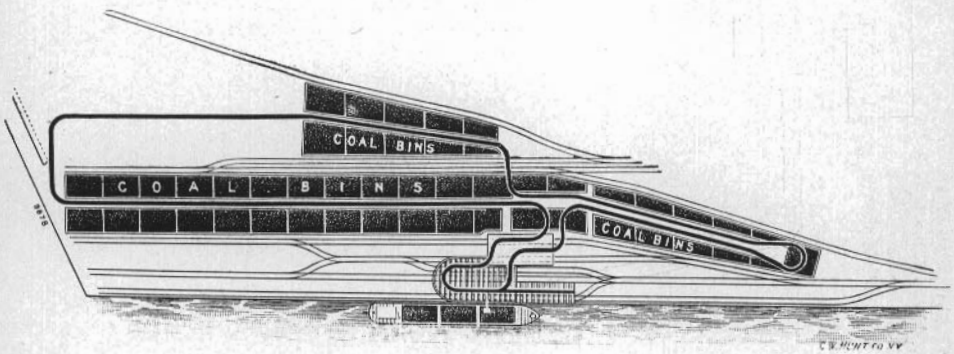


04128. Heavy Cable Railway, 867 feet long. Built by New Bedford Gas & Edison Light Company, New Bedford, Mass., for handling gas coal from tub elevator to storage bins.

No. 04128. Heavy Cable Railway 867 feet long.

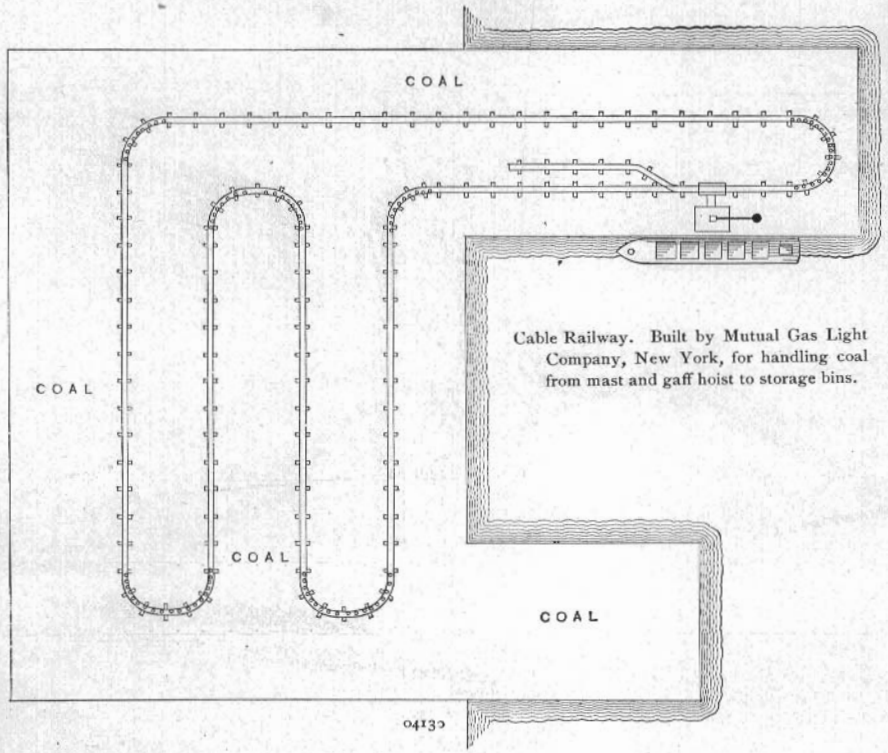


No. 04125. Heavy Cable Railway. Built for Roane Iron Works, Rockwood, Tenn., for transporting iron ore to the furnaces.
Length of track 1,306 feet.



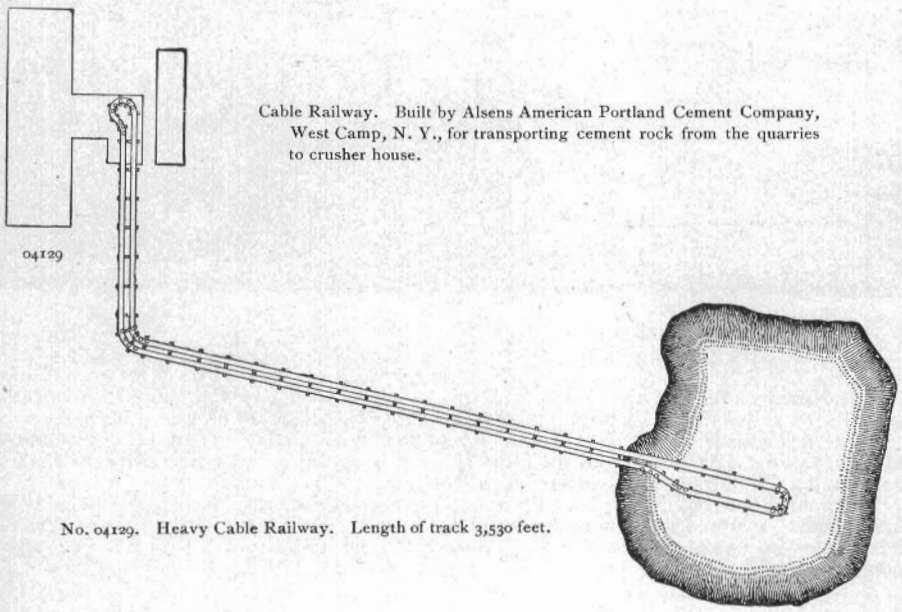
9878

No. 9878. Plan of the Hunt Railway Tracks, erected for J. Rougan, Boston & Maine Railway, Mystic Wharf, Somerville, Mass. The tracks were arranged to suit existing bins and buildings requiring these particular curves.



Cable Railway. Built by Mutual Gas Light Company, New York, for handling coal from mast and gaff hoist to storage bins.

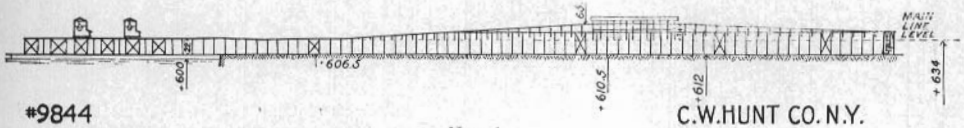
No. 04130. Heavy Cable Railway. Length of track 807 feet.



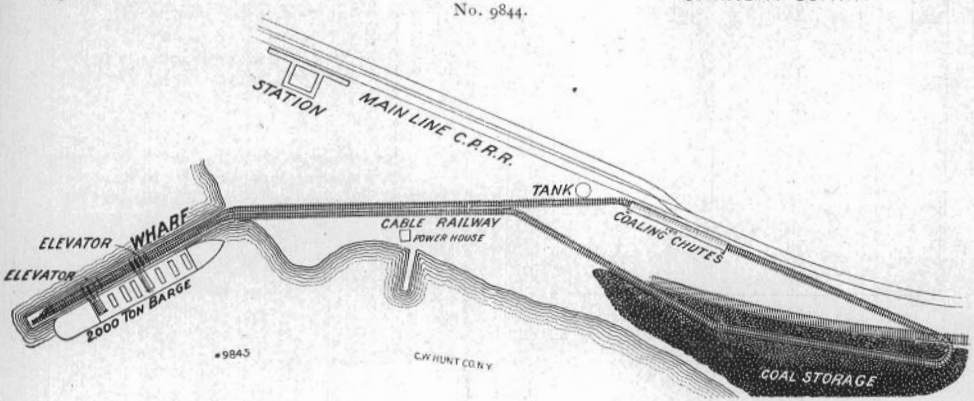
Cable Railway. Built by Alsens American Portland Cement Company, West Camp, N. Y., for transporting cement rock from the quarries to crusher house.

No. 04129. Heavy Cable Railway. Length of track 3,530 feet.

HEAVY CABLE RAILWAY.



No. 9844.



No. 9845.

No. 9839.

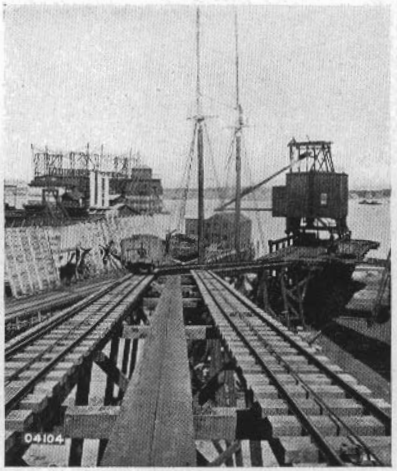
View of Hunt Cable Railway and Coal Elevators at Jackfish Bay, Canadian Pacific Railway.

The Heavy Cable Railway, on Lake Superior, at Jackfish Bay, Canadian Pacific Railway, shown in the above cuts, is for supplying the locomotive coaling station at this point.

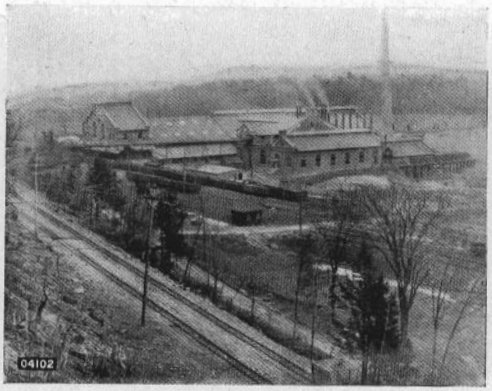
The track runs from the wharf to the top of the bluff, about 50 feet vertically and 1,200 feet horizontally. As the face of the bluff is very irregular, it was necessary to make the track run in a circuitous route, shown in cut No. 9845.

The coal is brought during the season of lake navigation and delivered to the coaling-chutes direct or stored near them, as shown in the cut. After navigation closes, the coal is loaded into the cable cars from the storage pile and run around and dumped into the locomotive coaling-chutes.

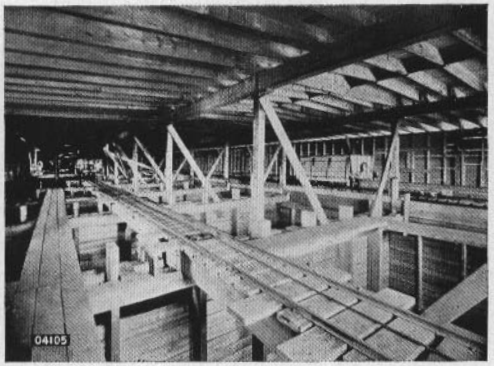
No. 04108. United States Coaling Station, Puget Sound.



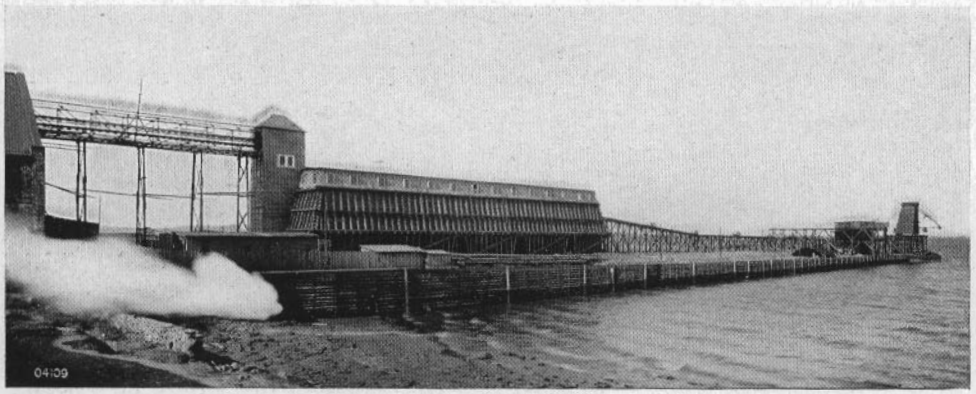
No. 04104. New Bedford Gas & Edison Light Co., New Bedford, Mass.



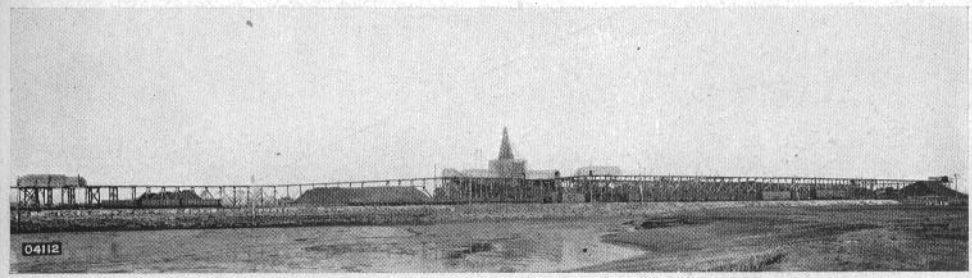
No. 04102. Alsens American Portland Cement Company.



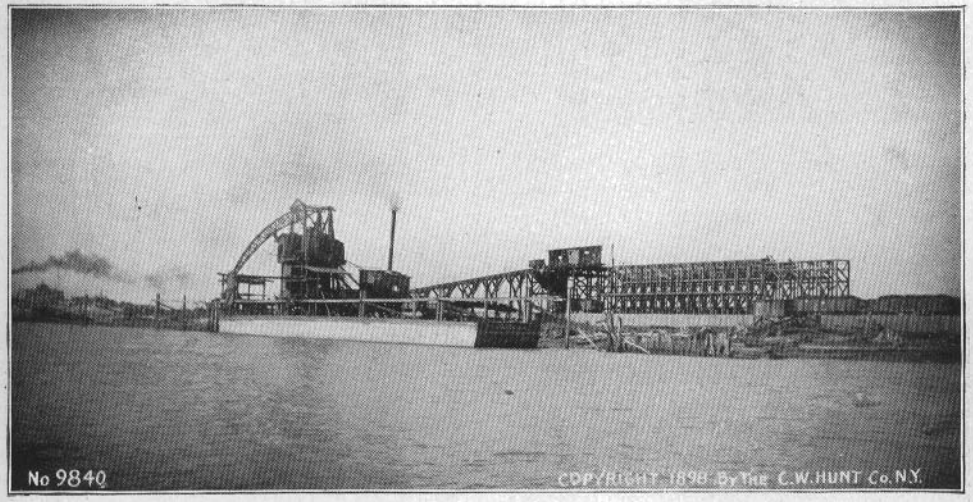
No. 04105. C. W. Claflin Company, Boston, Mass.



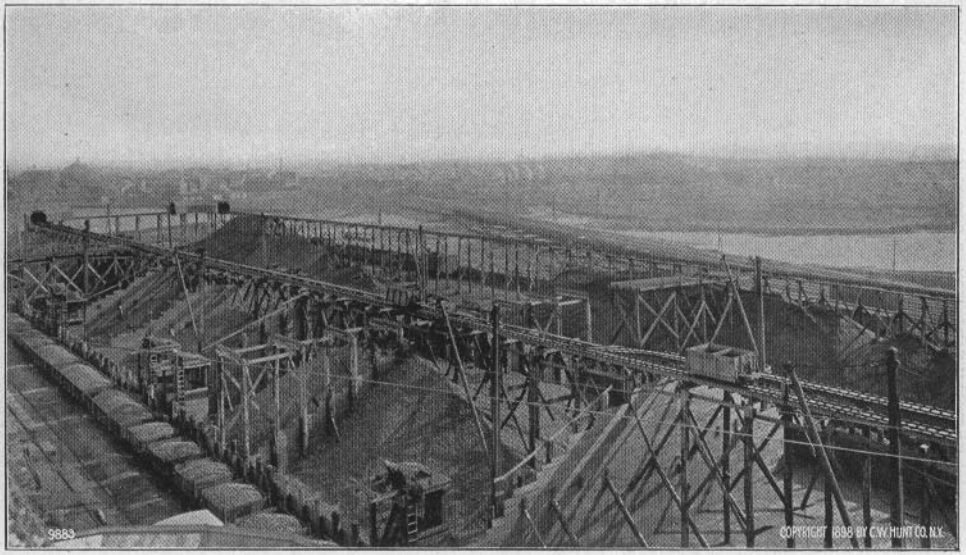
No. 04109. General View of the Cable Railway and Coal Handling Plant at the Fifty-second Street Power Station, Brooklyn Heights Railway Company, Brooklyn, N. Y. Track 800 feet long.



No. 04112. Cable Railway.



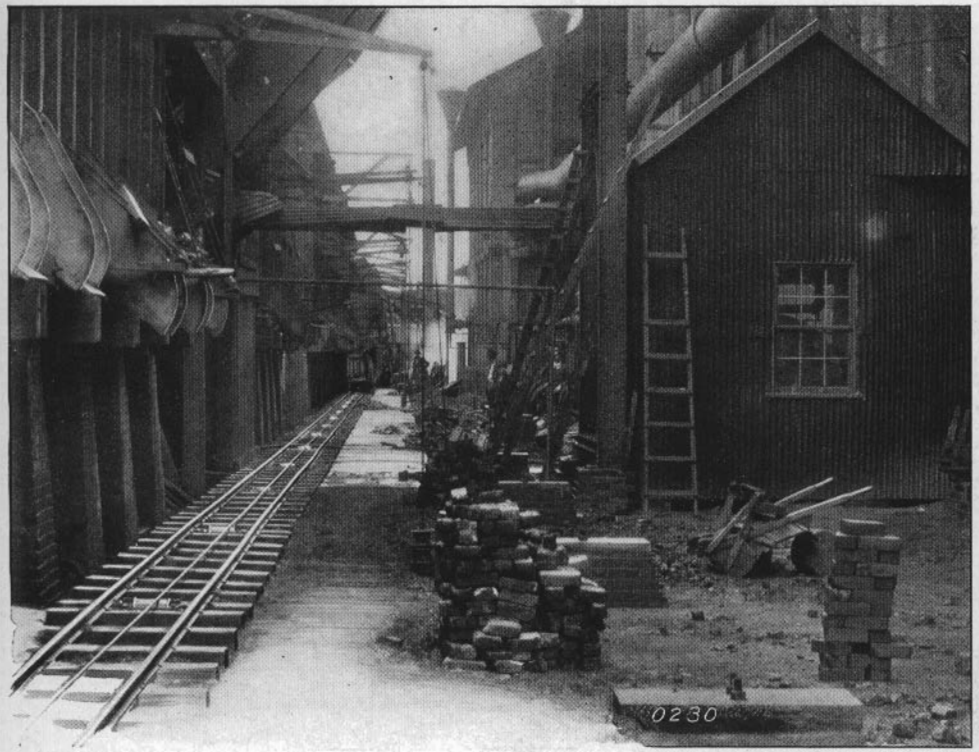
No. 9840. Plant of B. D. Wood, New Orleans, La., showing steep ascending grade to Locomotive Coaling Pockets.



No. 9883. Cable Railway, J. Roughan, Boston & Maine Railway, Somerville, Mass.

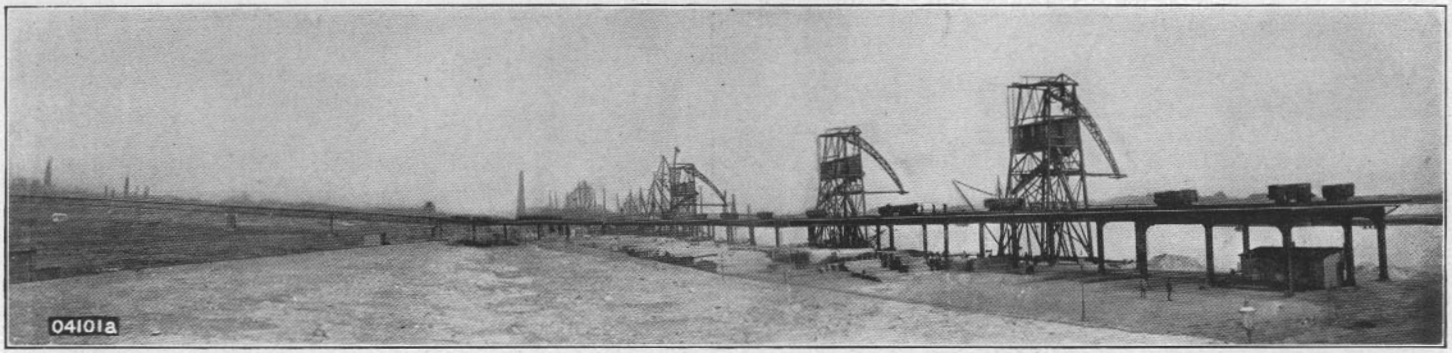
No. 0241.
Cable Railway, Jackfish Bay, Lake Superior, on the Canadian Pacific Railway.

No. 0226.
View Showing Curve on Cable Railway at Roane Iron Works, Rockwood, Tenn.

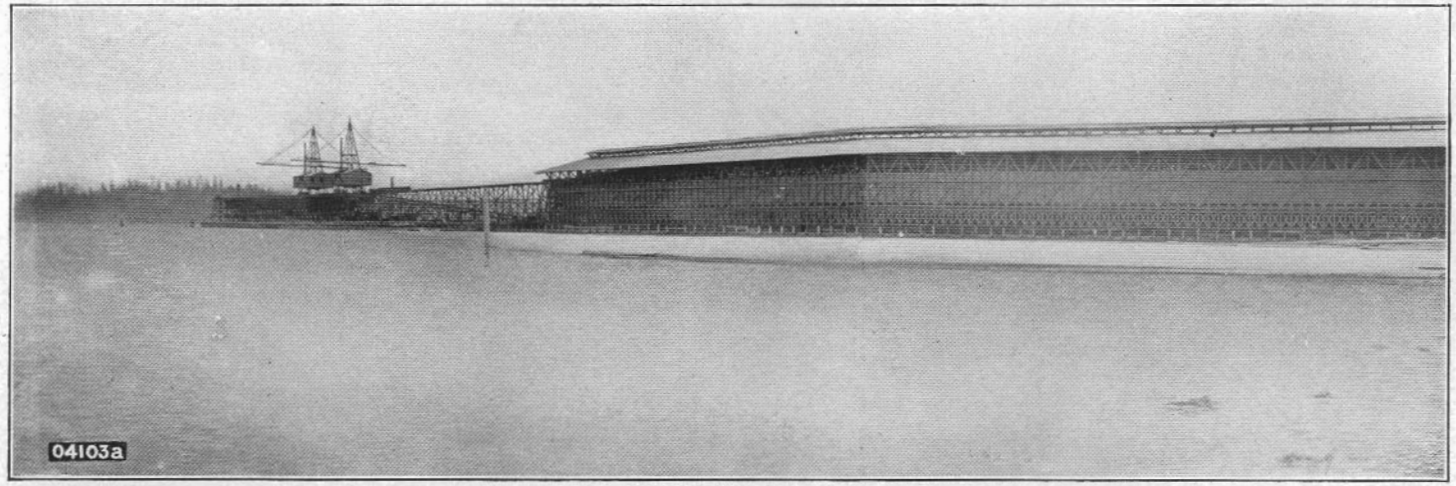


No. 0,30.
General View of Cable Railway at Roane Iron Works, Rockwood, Tenn.

No. 9893.
Cable Railway, Plymouth Cordage Co., Plymouth, Mass.



No. 04101. Western Gas Works, Copenhagen. Track 1400 feet long.

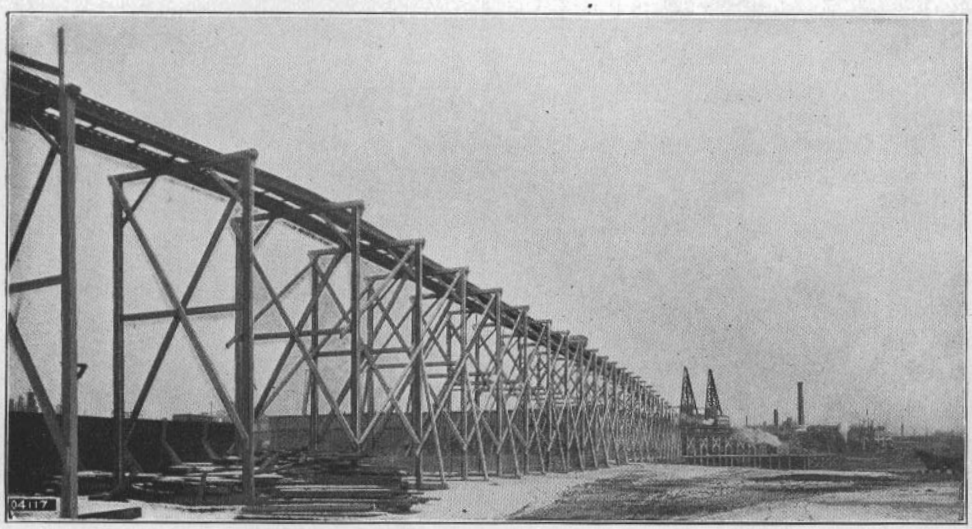


No. 04103. Two Cable Railways, United States Coaling Station, Puget Sound, Washington (See cuts Nos. 04123-4, page 16)

C. W. HUNT COMPANY, NEW YORK.

1889—FOURTEEN YEARS—1903

HUNT CABLE RAILWAY.



L. G. Burnham & Company Cable Railway.
Two Million Tons of Coal Carried 800 Feet.

In 1889, L. G. Burnham built a wharf, trestle, and coal storage buildings in his Swett Street yard, Boston, using the Hunt Cable Railway to carry the coal from the wharf to the storage building, a distance of 800 feet.

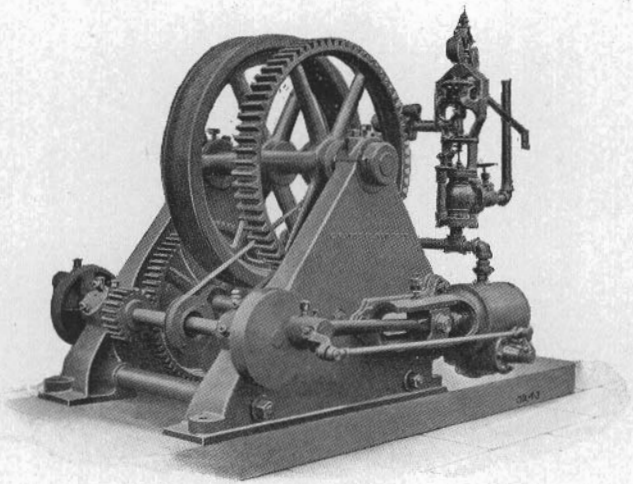
The first year the road started they handled fifty thousand tons; in three years they were handling one hundred thousand tons per year; five years ago they were handling two hundred thousand tons per year, and during the last five years they have been handling a still larger tonnage. It would be safe to say that they have been handling one hundred and fifty thousand tons yearly, since the plant was put in.

In October, 1903, fourteen years later, our inspector reports that they still have in use the same cars, the same running gears, the same sheaves, the same motor, the same engine and the same grips which were originally put in. **The machinery has outlived two motor houses and one entire timber structure. The wharf has also been rebuilt.**

When the Metropolitan Coal Company took over the business from Mr. Burnham, they overhauled the cars and put on new curve pulleys and a new cable, otherwise the builder knows of no other extensive repairs since the plant was installed.

A GOOD RECORD.

Continuous Runs of Five Months Each Without Closing the Throttle.



No. 0243.

"Hunt" Steam Engine. Roane Iron Company—Blast Furnaces at Rockwood, Tenn.

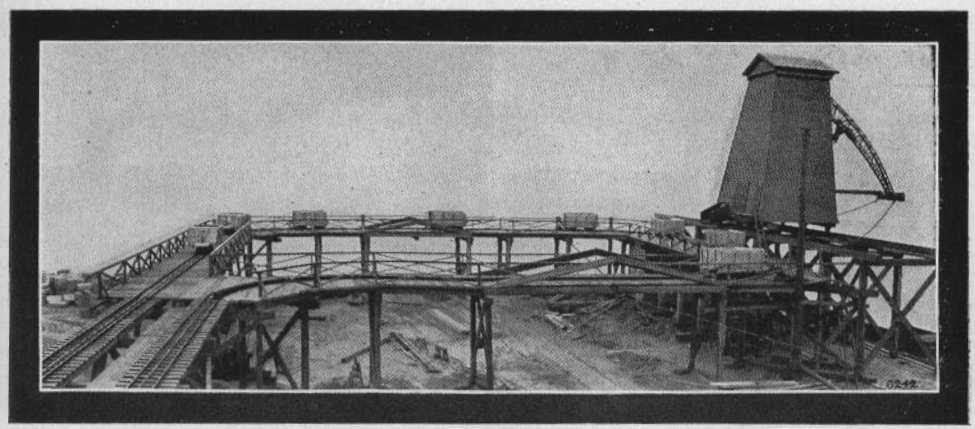
A cable railway is used to bring stock from the yard to the skips of the furnaces. Mr. Stuckey, the constructor of the furnaces, recently made the following statement as to the merits of this engine:

"It is decidedly the best engine for heavy constant work I have ever seen in my thirty-five years of experience as a blast furnace constructor. This engine has been in constant operation from August 1, 1901, to the present time, night, day and Sunday, the only exceptions being shut downs of about two hours to apply new cables to the railway. During all this time no repairs of any kind whatsoever have been made to the engine and no adjustment of any kind has been made, other than to take up one-half turn on the metallic piston packing."—November 10, 1903.

Each cable handles about 150,000 tons of material and lasts about five months.

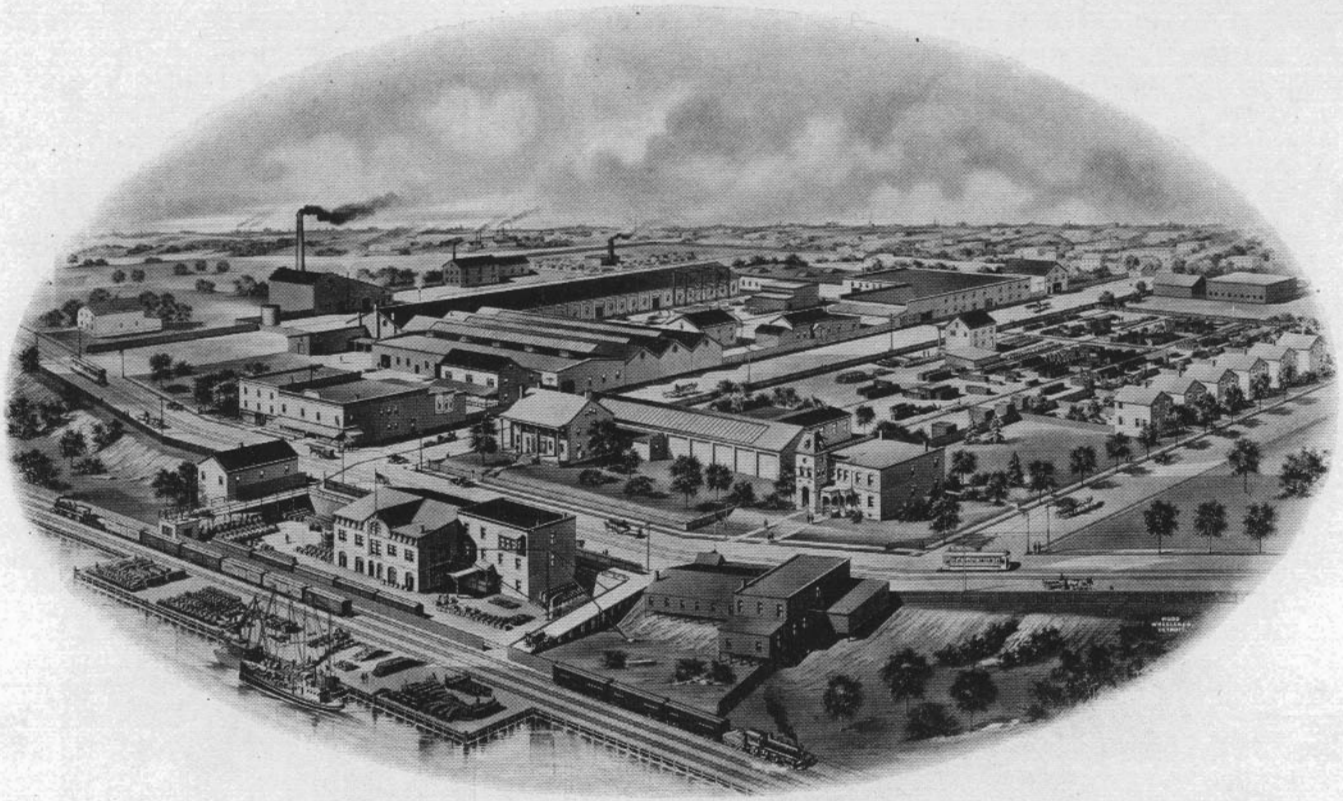
No. 940,421.

General View of Cable Railway from the Coal Pocket at the Fifty-second Street Power Station, Brooklyn Heights Railway Co., Brooklyn, N. Y. Track 800 feet long.



No. 0242.

Southern Station Brooklyn City Railroad. End view showing cars on the track, and parabolic boom tower.



Our shipping facilities are exceptionally good. The property fronts on New York harbor with 20 feet of water at our wharf. All railways centering in New York send their lighters to our wharf to deliver and receive shipments. The Baltimore and Ohio Railroad passes through our property with side tracks for our use.