

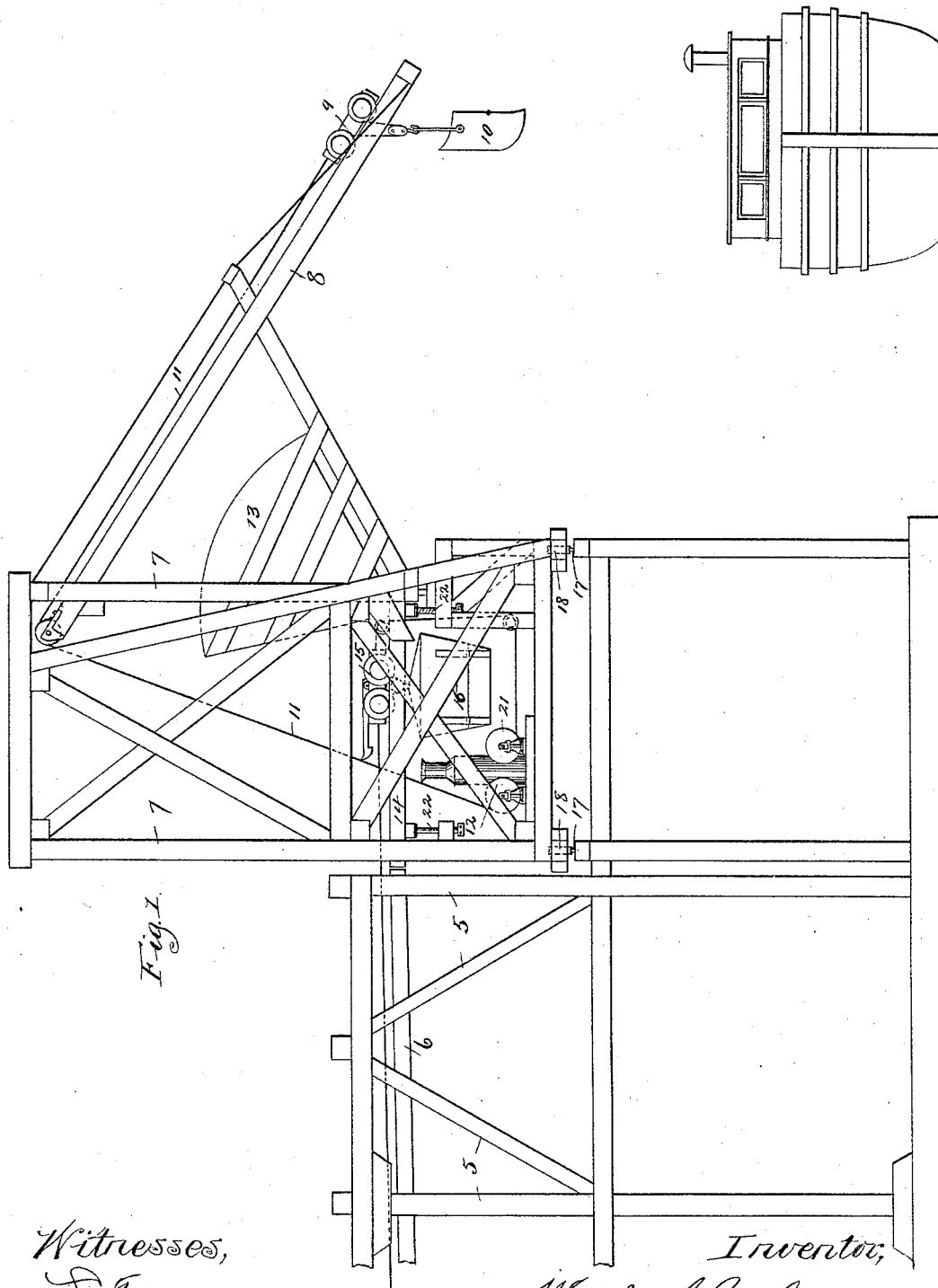
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5 Sheets—Sheet 1.

W. S. BOGLE.
COAL HANDLING APPARATUS.

No. 419,628.

Patented Jan. 21, 1890.



Witnesses,
J. J. Mann,
Frank P. Reed.

Inventor,
Walter S. Bogle
By C. C. Luthcum, Atty.

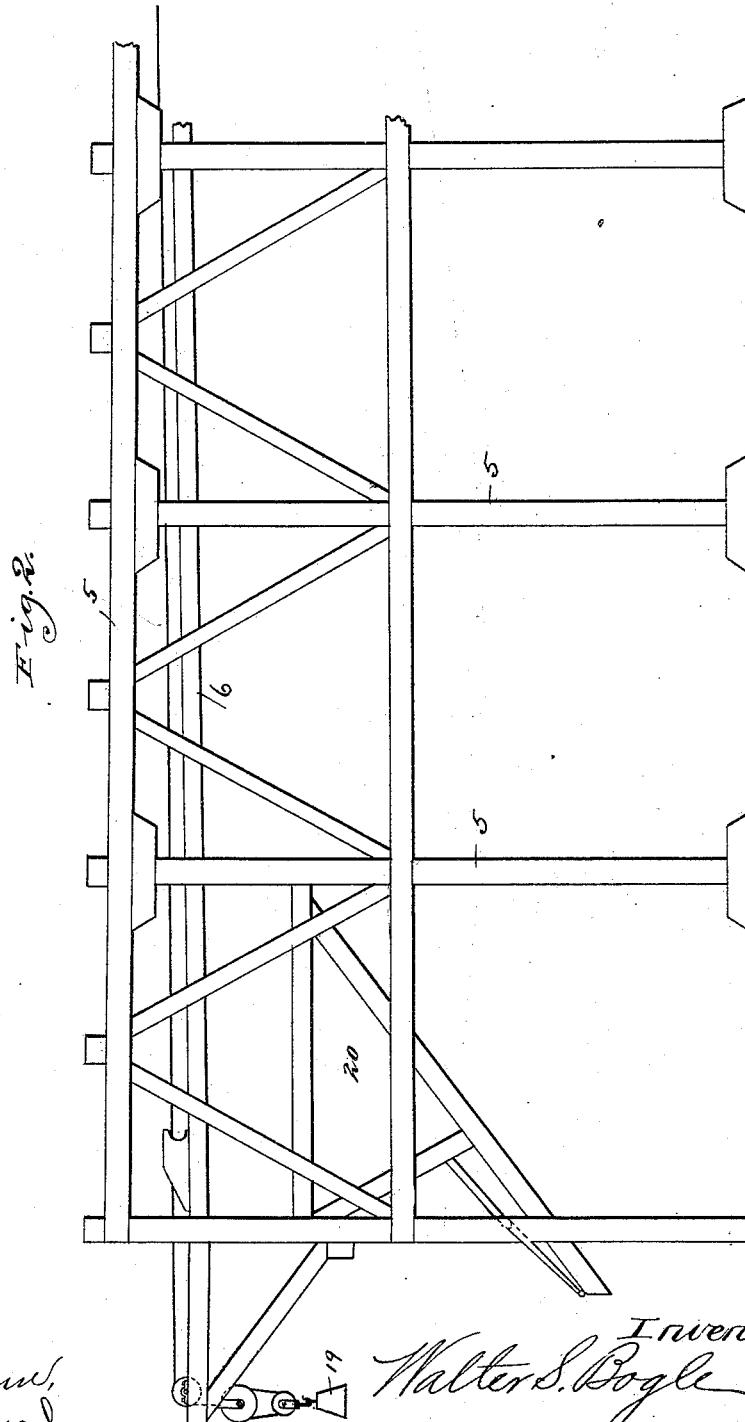
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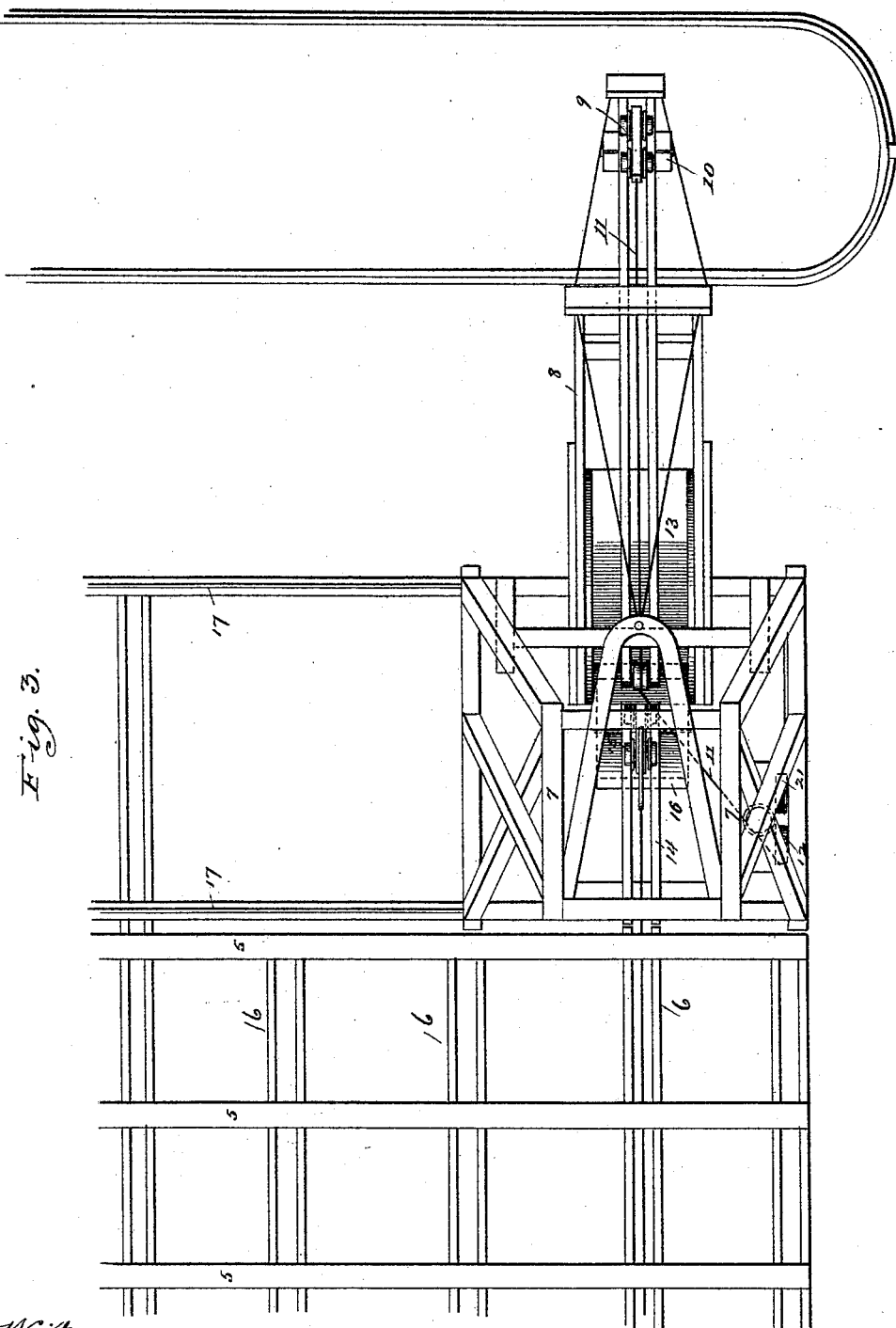


Fig. 3.

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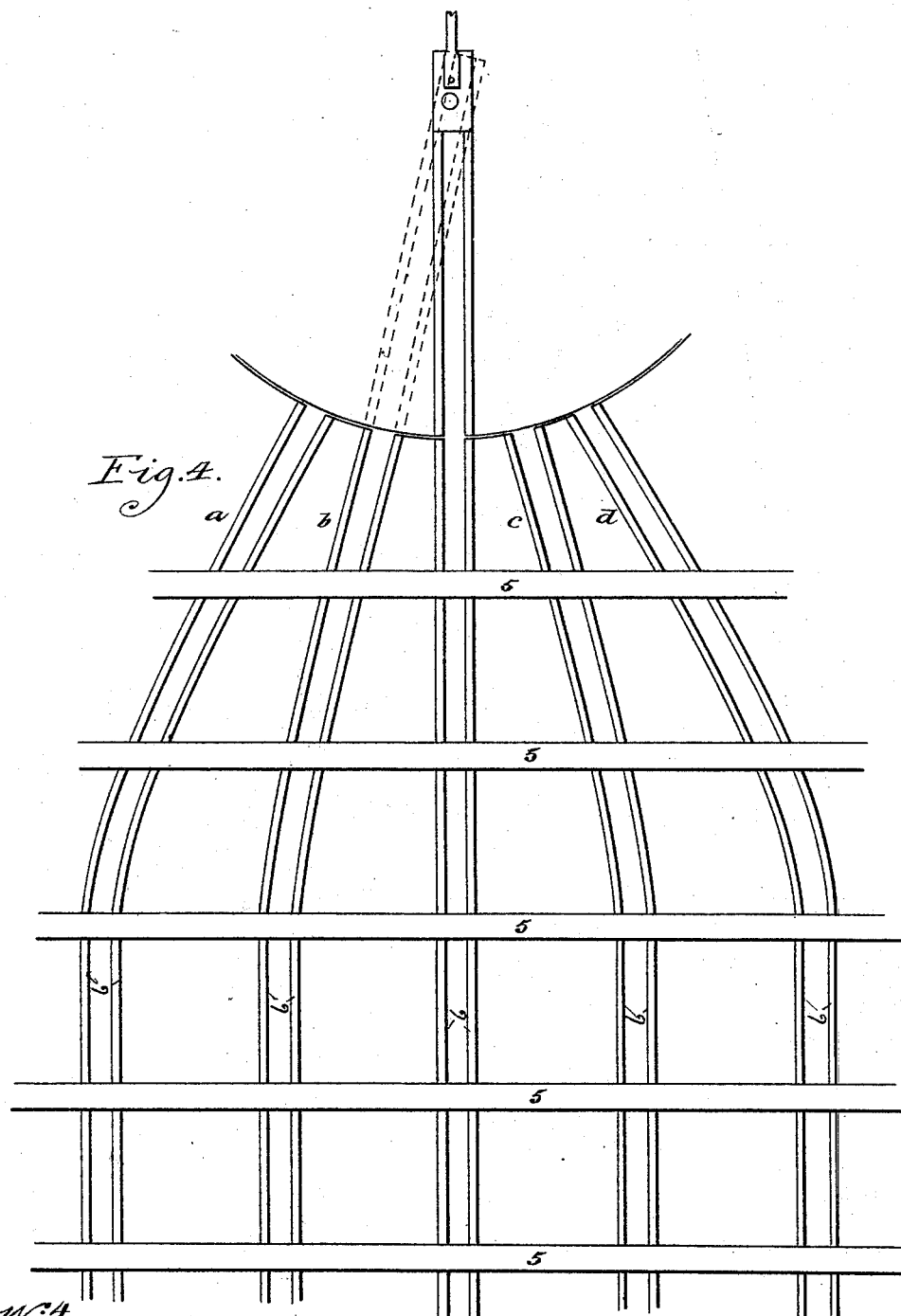
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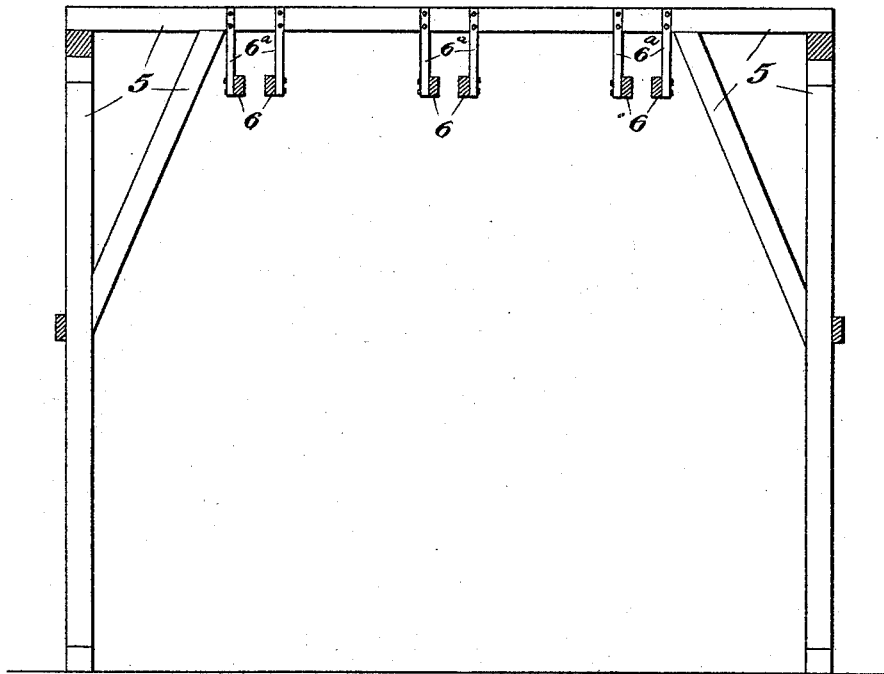
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Fig. 5.



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UNITED STATES PATENT OFFICE.

WALTER S. BOGLE, OF CHICAGO, ILLINOIS.

COAL-HANDLING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 419,628, dated January 21, 1890.

Application filed March 25, 1889. Serial No. 304,588. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. BOGLE, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in Coal-Handling Apparatus, of which the following is a specification.

My invention relates to improvements in the construction of apparatus for lifting coal by means of hoisting-buckets from cars or vessels and transporting the same over stationary suspended tracks to distant points, where it is either dumped in pile or loaded into wagons or cars, as occasion requires. In using suspended tracks the common method, where it is desired to distribute the coal over a considerable area, is to suspend such track in the form of a truss between two towers or similar structures, which are sometimes mounted so as to be moved sidewise. In a dock of any considerable depth—say two or three hundred feet—it is apparent at once that the tower would have to be of great strength and the suspended track very carefully constructed to balance upon the towers, and that the latter structure will be of immense weight and very expensive. In such construction it is common to employ at the hoisting-point a swinging crane, from which the hoisting-bucket is suspended, and the latter being hoisted it is conveyed with its contents along the suspended track by the same power which hoists it, and is returned by weight or the action of gravity when the suspended track is inclined, as is frequently done toward the hoisting-point. It is evident that this method is very slow, and when the track is of considerable length the time consumed in the operation is so great as to almost bar its use.

I employ in carrying out my invention a number of stationary suspended tracks arranged parallel to each other and extending depthwise of the dock, and use a tower having a track-section adapted to be brought in position to register with the several stationary tracks, and so as to discharge the car carrying the transfer-bucket from the tower upon the stationary tracks. By this means I am enabled to erect at a small cost stationary tracks sufficient to distribute the coal over the desired area and to employ a single tower, which may be cheap in construction and

easily operated. I also employ on said tower a fixed hopper, into which the hoisting-bucket delivers, and I employ a separate carrying-bucket suspended, preferably, from a carriage which is adapted to run upon the track-section of the tower to bring the transfer-bucket into position to receive its load from the stationary hopper of the tower. This transfer-carriage I prefer to operate by means of a weight, which will, connected by a cable to the carriage, draw it along the track to the point of dump, and I return the carriage by means of a cable connected thereto, which is wound upon a secondary drum of the hoisting-engine stationed at the tower. By these means I am enabled to have the operation of hoisting and of transferring the material along the suspended tracks going on simultaneously, whereby great economy of time is attained.

In the accompanying drawings, Figure 1 is a side elevation of the hoisting-tower with the adjacent end of the stationary track and supporting-frame. Fig. 2 is a side elevation of the track at the dumping end, showing the weight, &c. Fig. 3 is a plan view of the parts shown in Fig. 1; and Fig. 4 is a plan view of a series of tracks which converge to a central point whereat the tower is located, the tower in this modified construction being adapted, either by being pivoted on its supports, so as to be slightly turned, or by having its track-section pivoted, to receive and discharge the transfer-carriage from and to a number of tracks without moving the tower laterally. Fig. 5 is an elevation in cross-section showing the suspended tracks.

In the drawings, 5 represents the supporting structure for the suspended track 6, which I prefer to make horizontal.

6 6 are the track-rails, which are suspended on the hangers 6^a at suitable distances apart to permit the passage of the sheave-block on the carriage from which the bucket is suspended.

7 is the frame of the tower, to which is secured the crane 8, having the traveling carriage 9 movable thereon, and from which carriage the hoisting-bucket 10 is suspended, its cable 11 being wound upon a drum 12 of a suitable hoisting-engine located at the tower, which I deem the preferable arrangement, as

it enables the engineer to oversee all of the operations.

13 is a stationary hopper secured upon the tower, and into which the coal is discharged from the hoisting-bucket.

14 is the tower track-section, upon which the transfer-carriage 15 is adapted to travel to bring the transfer-bucket 16 in position to receive the coal from the chute of the hopper.

17 represents the track-rails on which the wheels 18 of the tower move when the latter is to be moved sidewise to adapt it for use with a series of tracks, such as is shown in Fig. 3.

In the modified construction shown in Fig. 4 the series of tracks have curved sections *a b c d* to the tower; or, if preferred, this tower track-section will be pivoted, so that it may be turned to register with the various tracks.

This construction will be desirable where the dock frontage is limited.

The operation is as follows: The engine being in motion, the hoisting-bucket will be hoisted up in position to discharge its contents into the stationary hopper. The transfer-bucket attached to its carriage will be brought into position to receive the coal from said hopper, and the descent of the weight 19, acting through the connecting-cables upon said car, causes the latter to move out to the rear end of the track, where it discharges into a hopper, as 20, or at any intermediate point. The transfer-carriage, with its suspended bucket, is returned by means of a cable attached to said car and wound upon a drum 21, revolved by the hoisting-engine.

I do not intend to limit my invention to the details of construction nor to the precise combination of parts, as it is evident that some of the novel features described may be advantageously used without employing in connection therewith all of said features. I prefer to make the section of said track upon the tower vertically adjustable, whereby to

adapt it to variations in the main-track section, and this may be conveniently done by means of adjusting-bolts 22, as shown in Fig. 1.

The movable tower may be employed with different means for operating the transfer-bucket than those here shown.

I claim—

1. An apparatus for handling coal, comprising a series of elevated suspended stationary tracks, a tower-track at a lower elevation and extended along the ends of the stationary tracks and at right angles thereto, a hoisting-tower movable along its track and having a track-section adapted to be brought to register with the stationary tracks by the movement of the tower, and a carriage adapted to run upon the stationary tracks and onto the track-section of the tower, substantially as described.

2. An apparatus for handling coal, comprising a series of elevated suspended stationary tracks, a hoisting-tower having a hoisting-bucket, a stationary hopper, and an adjustable track-section, a tower-track at a lower elevation than the stationary tracks and extended at right angles thereto, a transfer-carriage and a transfer-bucket carried thereby, a cable connected to said carriage and operated by a weight to move the same outwardly with its load, and a second cable connected with said carriage and adapted to be wound upon a drum by the hoisting-engine, whereby to return the carriage with its buckets, substantially as described.

3. In an apparatus for handling coal, a series of horizontal suspended tracks and a movable hoisting-tower having an adjustable track-section adapted to be brought to register with the various stationary tracks, substantially as described.

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