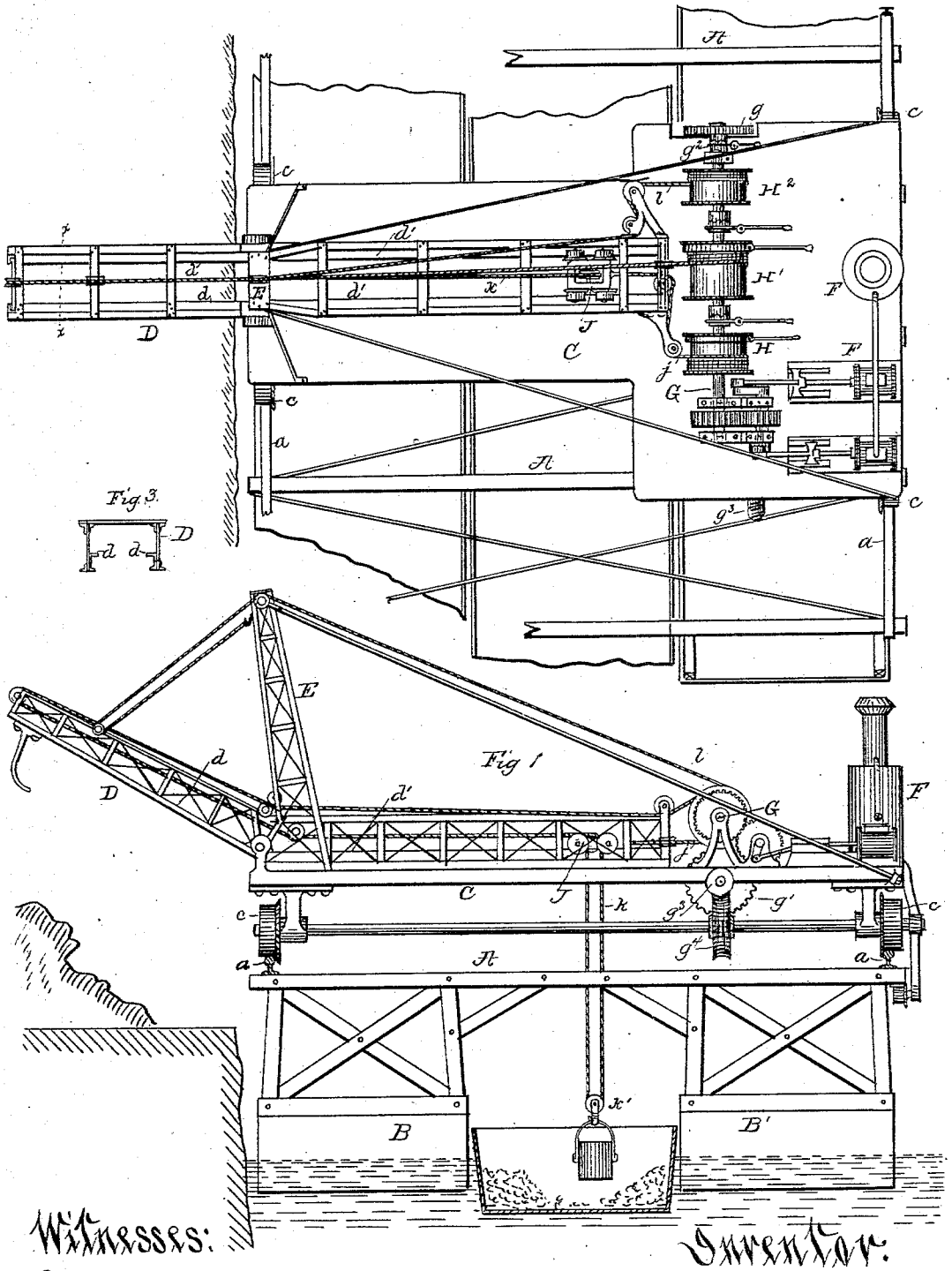
(No Model.)

W. SNEE.

COAL HOISTING APPARATUS.

No. 304,040. Fig 2. Patented Aug. 26, 1884.



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UNITED STATES PATENT OFFICE.

WILLIAM SNEE, OF WEST ELIZABETH, ASSIGNOR, BY MESNE ASSIGNMENTS, TO WILLIAM GUCKERT, OF ALLEGHENY CITY, PENNSYLVANIA.

COAL-HOISTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 304,040, dated August 26, 1884.

Application filed May 10, 1884. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM SNEE, a citizen of the United States, residing at West Elizabeth, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Coal-Hoisting Apparatus, of which the following is a full, clear, and exact description.

My invention relates more particularly to improvements in that class of apparatus used in unloading coal-barges.

The object of my invention is to provide means whereby a barge may be completely unloaded without moving it during the operation, and also to provide means for dumping the coal at any desired elevation.

The invention consists of a track sustained by two floats situated at such distance apart as to allow room for the entrance between them of a coal-barge, a hoisting apparatus carried by a car adapted to travel upon said track, and means for actuating the hoisting apparatus and moving same along the track, as hereinafter fully described.

In the drawings, Figure 1 represents an end elevation of my invention, and Fig. 2 a top plan view of the same. Fig. 3 is a section on line *x x* of Fig. 2.

Similar letters of reference indicate corresponding parts of both figures.

A is a frame sustained by proper beams and girders upon two floats, B B′. Said floats are situated at such distance apart as to allow ample room for the passage of a barge between them. Secured to the top of the frame are rails *a* on which travel the wheels *c* of the car C. Upon the latter are sustained the hoisting apparatus and means for operating it.

D is a vertically-swinging boom or frame, which is hinged at the inner extremity to the car C, and is provided with a track, *d*. The latter connects with a second track, *d′*, carried by a suitable frame-work which extends upwardly from said car C. The track *d′* runs transversely over the car and extends to near a vertical plane drawn from the inner side of the float B′.

E is an upright from which the swinging frame D is suspended in the manner hereinafter described. An engine and boiler, F, is situated upon the car C, over the float B, and the weight of said engine and boiler is designed to counterbalance the weight of the boom D and upright E. Actuated by said engine is a shaft, G, which carries three drums, H H′ H². Said drums are loosely mounted upon the shaft and provided with clutches, by means of which they are made to revolve with said shaft, as occasion requires. A rope or chain, *j*, is secured to and extends from a drum, H, to the hoist-carriage J. Said carriage travels on the before-mentioned tracks *d d′*. Attached to the frame of the carriage is one extremity of a second rope or chain, *k*, which passes around the bucket-pulley *k′*, thence about pulleys at the extremity of the boom, and thence backward to drum H′, to which it is fastened. From this construction it will be seen that when rope *j k* is slack, as shown in Fig. 1, the weight of bucket K will enable said bucket to reach the barge. The drum H is adapted to revolve only when considerable strain is exerted upon it, and in consequence, when the drum H′ is thrown in gear with the driving-shaft, the bucket is first lifted upward until pulley *k′* strikes the carriage J, and then the latter, carrying with it the bucket, is drawn along track *d′ d* until it reaches the end of said track *d*, where the coal is discharged. To drum H² is secured a third rope or chain, *l*, which passes over a pulley on the top of upright frame E, thence around another pulley secured to the outer part of the boom, and back to top of frame E, where it is secured. It will thus be seen that when drum H² is thrown in engagement with the main shaft the boom D may be raised or lowered at pleasure.

Upon one extremity of shaft G is a loose cog-wheel, *g*, whose teeth are adapted to engage with a pinion, *g′*, situated beneath the bottom of the car. Said wheel *g* is thrown into engagement with the shaft G by means of a clutch, g^2. The shaft of pinion *g′* carries a worm, g^3, which meshes with a worm-wheel, g^4, borne by one of the axles of the car. By this construction the car may be made to traverse the track in either direction, as circumstances may require.

The general operation of the apparatus is as follows: A barge is run in between the

floats B B′ and moored. The ropes are slackened and the bucket allowed to sink to the barge. The buckets are filled and the ropes *j k* and drums H H′ operated in the manner described to carry the coal to the point where it is dumped. After the dumping the operation is reversed, and so on until that part of the barge over which the car has been situated is empty. The cog-wheel *g* is then thrown in engagement with shaft G, and the car thereby moved along the track until it is brought above a different part of the barge. The aforegoing operation is then repeated until the barge is entirely unloaded. From time to time, as occasion may require, the drum H^2 is operated and the outer end of track *d* thereby raised or lowered, thus allowing the coal to be dumped at any elevation. By this means, also, all shattering of the coal may be prevented.

The particular advantages of the invention are that by the use of the two floats the barge is placed in the most favorable position for unloading, while at the same time the engine, hoisting apparatus, &c., are made to counterbalance each other, as shown.

Having thus described my invention, what I claim as new is—

1. An apparatus for unloading barges, provided with two floats placed at such distance apart as to allow the entrance of a barge between them, substantially as and for the purposes described.

2. The combination of the two floats, the frames D′ E, and the apparatus for imparting motion to the hoist-ropes, substantially as described, whereby the frames and apparatus are made to counterbalance, as set forth.

3. The combination of the floats B B′, the frame A, provided with rails *a*, and the car C, adapted to move upon said rails, substantially as and for the purposes set forth.

4. The combination, with the driving-shaft and the car-axle, of a loose wheel provided with a clutch device, a worm and a worm-wheel, and intermediate gearing, as and for the purposes described.

5. The combination of drums H, ropes *j k*, carriage J, and track *d d′*, arranged and operated substantially in the manner specified.

6. The combination of the hoisting-carriage, the pulleys, the bucket, and the hoisting-rope, as described, whereby the bucket may automatically find its way to the barge by its own gravity.

7. The combination, with the bucket, pulley *k′*, the ropes *j k*, and the shaft G, of the loose drums H H′, the clutching mechanism, the carriage J, and the track *d d′*, as shown and described, whereby the bucket may be transferred from the filling to the discharging point, in the manner set forth.

8. The combination, with the boom D, of the loose drum H^2, adapted to be clutched on the shaft G, the rope *l*, the frame E, carrying a pulley on top, and the pulley on the outer part of the boom, whereby said boom may be raised or lowered, as described.

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