

(No Model.)

G. W. RAWSON.
APPARATUS FOR HANDLING COAL.

No. 411,902.

Patented Oct. 1, 1889.

Fig. 2.

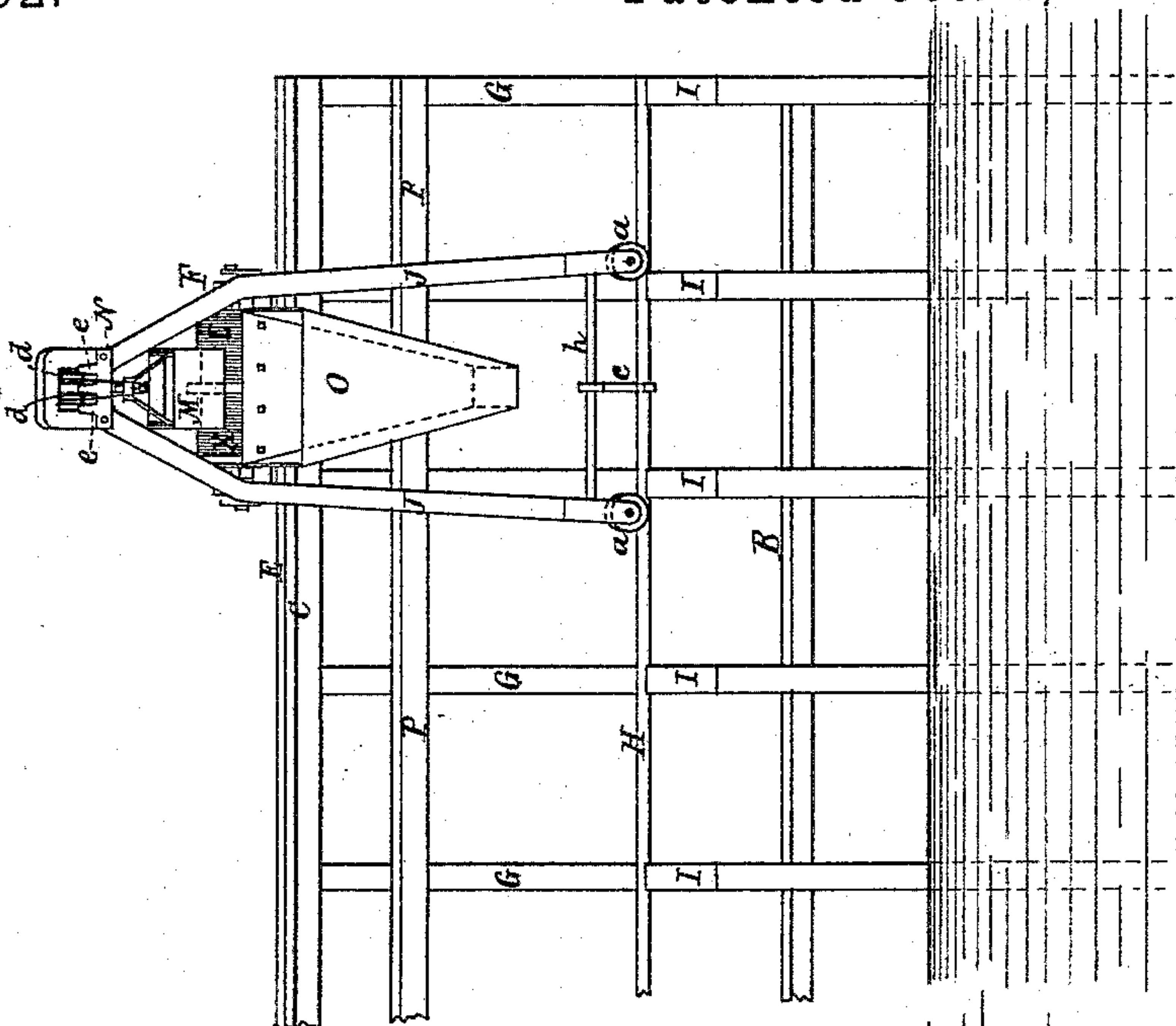
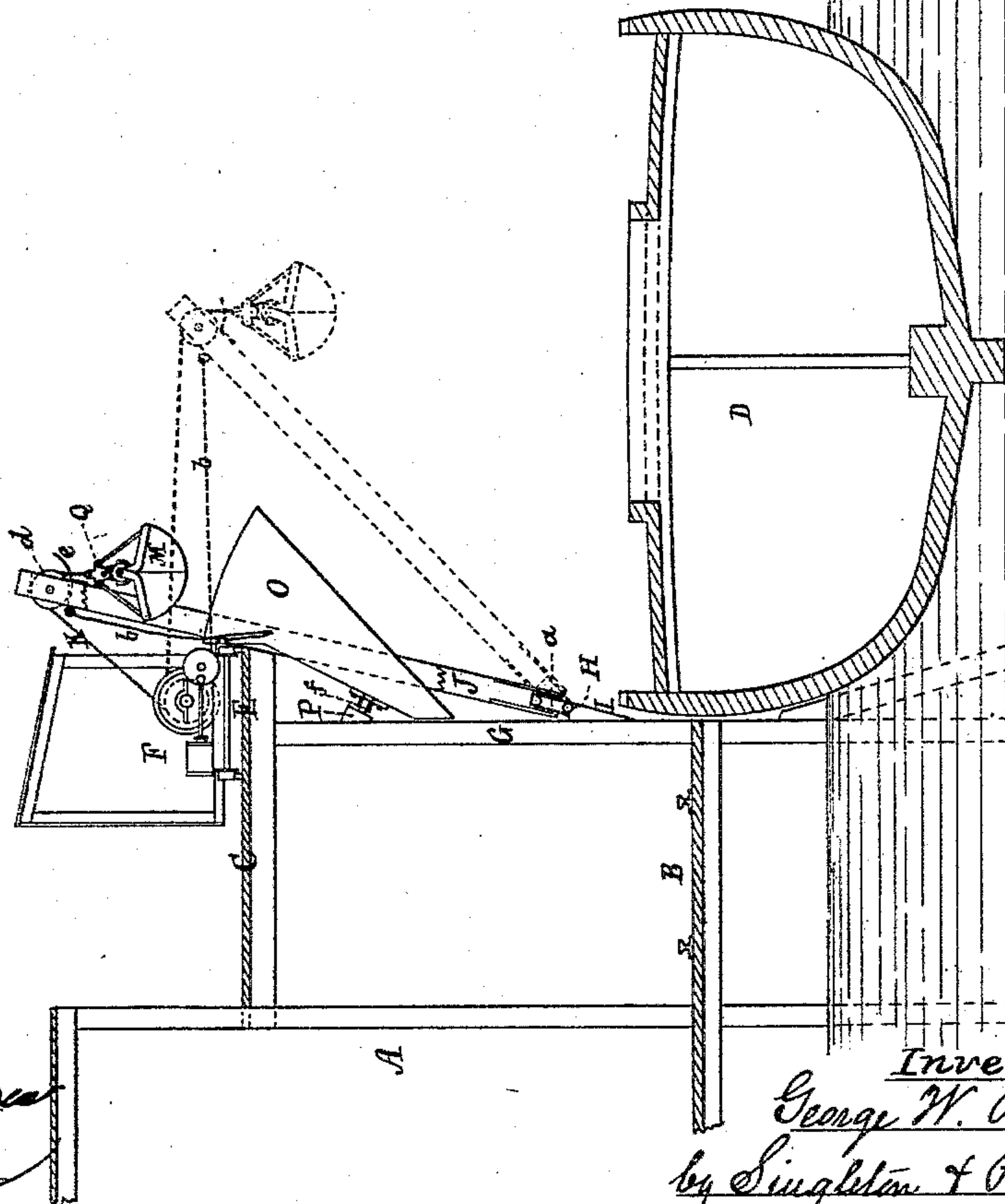


Fig. 1.



Witnesses.

G. J. [Signature]
[Signature]

Inventor.

George W. Rawson
by Singleton & Piper attys

UNITED STATES PATENT OFFICE.

GEORGE W. RAWSON, OF CAMBRIDGE, MASSACHUSETTS.

APPARATUS FOR HANDLING COAL.

SPECIFICATION forming part of Letters Patent No. 411,902, dated October 1, 1889.

Application filed February 21, 1889. Serial No. 300,682. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. RAWSON, a citizen of the United States, residing at Cambridge, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Apparatus for Handling Coal; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

Figure 1 is a vertical and transverse section of a platform and bin or shed and a trackway for a train of coal-cars, and also of the hull of a vessel, showing my improvements for transferring the coal from the vessel to the bin or train of cars, as the case may be. Fig. 2 is a front elevation of the apparatus.

The nature of my invention is defined in the claims hereinafter presented.

In the drawings, A denotes the shed; B, the trackway; C, the platform erected on a framework, and D the hull of the vessel.

The arrangement of the apparatus as illustrated is such as is particularly intended for use on a long wharf at which a number of vessels can take position and lay alongside ready to discharge their cargoes, and said apparatus is adapted to be moved from one hatchway in a vessel to the other hatchways therein, and as soon as said vessel is relieved by it of its cargo to another vessel, and so on, the coal being transferred from the vessel to cars, wagons, or to a bin, as may be desired.

To the platform C is applied a track E, extending throughout its length, and on said track the engine which hoists the coal-bucket is arranged, said engine being represented at F. To the uprights G are secured brackets or other proper supports I, which sustain a rail H, secured to them, the length of said rail corresponding with that of the track E. Supported on the rail H are shears J, to the feet of which are pivoted small wheels *a a*, grooved to partially embrace the rail, as shown, so as to admit of the shears swinging transversely of the rail as well as moving lengthwise thereon. The top of the shears is connected by guys *b b* to the frame of the en-

gine, which admit of being lengthened or shortened to increase or reduce the swing of the shears as may be necessary to cause the bucket to be lowered into the coal lying on either side of the keelson of the vessel. The feet of the shears are connected by a rod *h*, on which is pivoted the eye of a hook *c*, the free or hooked end of which swings under and bears against the rail H at a point opposite to that of the bearing of the wheels *a* thereon and prevents the detaching of said wheels from the rail. To the top of the shears are pivoted sheaves *d*, over which the hoisting-line K and the line L, for closing the jaws of the bucket M, pass to the drums operated by the engine. On the side of the shears next the bucket is fixed a plate N, having guide-prongs *e*, between which the lines of the bucket are arranged, and by which said lines are kept within the grooves of the sheaves during the working of the bucket and the swinging of the shears. Arranged between the legs of the shears and fixed to the engine is a hopper O, which near its lower end and on the side of it toward the uprights G is provided with a wheel or roller *f* to bear against a rail P, secured to the uprights and extending throughout the length of the structure. The nose of the hopper terminates a little short of the front face of the line of said uprights G.

Fig. 1 of the drawings represents in dotted lines the shears as swung out over the vessel and supported by the guys *b* and the loaded bucket as in the act of being raised, and as soon as the head-block Q is drawn against the prongs *e* the shears will swing on the rail H and be moved up into the position shown in full lines in said figure. By unclutching the drum on which the line L is wound the jaws of the bucket will open wide and deposit the contents of it into the hopper.

When the vessel is relieved of its cargo, or of that portion of it which can be conveniently reached from one hatchway, and the shears are in the position shown in full lines in Fig. 1, and it is desired to move the shears, the hook *c* is first unhooked from the rail H, and the engine is next moved along on its track E, carrying with it the hopper, and also moving with it the shears on the track H into position over another hatchway of the vessel to unload the remainder of the cargo, after

which said apparatus can be moved still farther along on the tracks E and H into position over another vessel.

By means of the apparatus hereinbefore described much time is saved in relieving a vessel of a cargo that admits of being transferred in buckets from said vessel to the place of deposit, as owing to the arrangement of the shears they have but little distance to swing compared to that required for a boom as ordinarily used for the purpose; and, furthermore, an additional saving in time is also effected in moving the apparatus from one vessel to another or from one hatchway to another over the time required for a vessel to haul away from the apparatus after being unloaded to make room for another vessel to come into its place or to be moved along to bring its other hatchway in position under the shears.

Having described my invention, what I claim is—

1. The combination of a hoisting-engine arranged to move on a track, a hopper secured to said engine and movable therewith,

the rail H, the shears having sheaves *d* and guides *e* and adapted to move lengthwise on and swing transversely of the said rail, and the guys *b b*, connected to the engine and shears, with the hoisting-bucket and its operative lines, all supported, arranged, and operated essentially as shown and set forth.

2. The shears provided with sheaves *d d*, guide-prongs *e*, wheels *a*, and hook *c*, pivoted thereto, in combination with the hoisting-engine arranged to move on a track and having secured to it a hopper movable with it, said hopper provided with a wheel to work against a rail P, the rail H, supported as described, for sustaining the shears, the guys *b b*, secured to the engine and shears, and the hoisting-bucket and its operative lines, all supported, arranged, and operated essentially as shown and set forth.

In testimony whereof I affix my signature in presence of two witnesses.

GEO. W. RAWSON.

Witnesses:

S. N. PIPER,

W. H. PRESTON.