

No. 779,493.

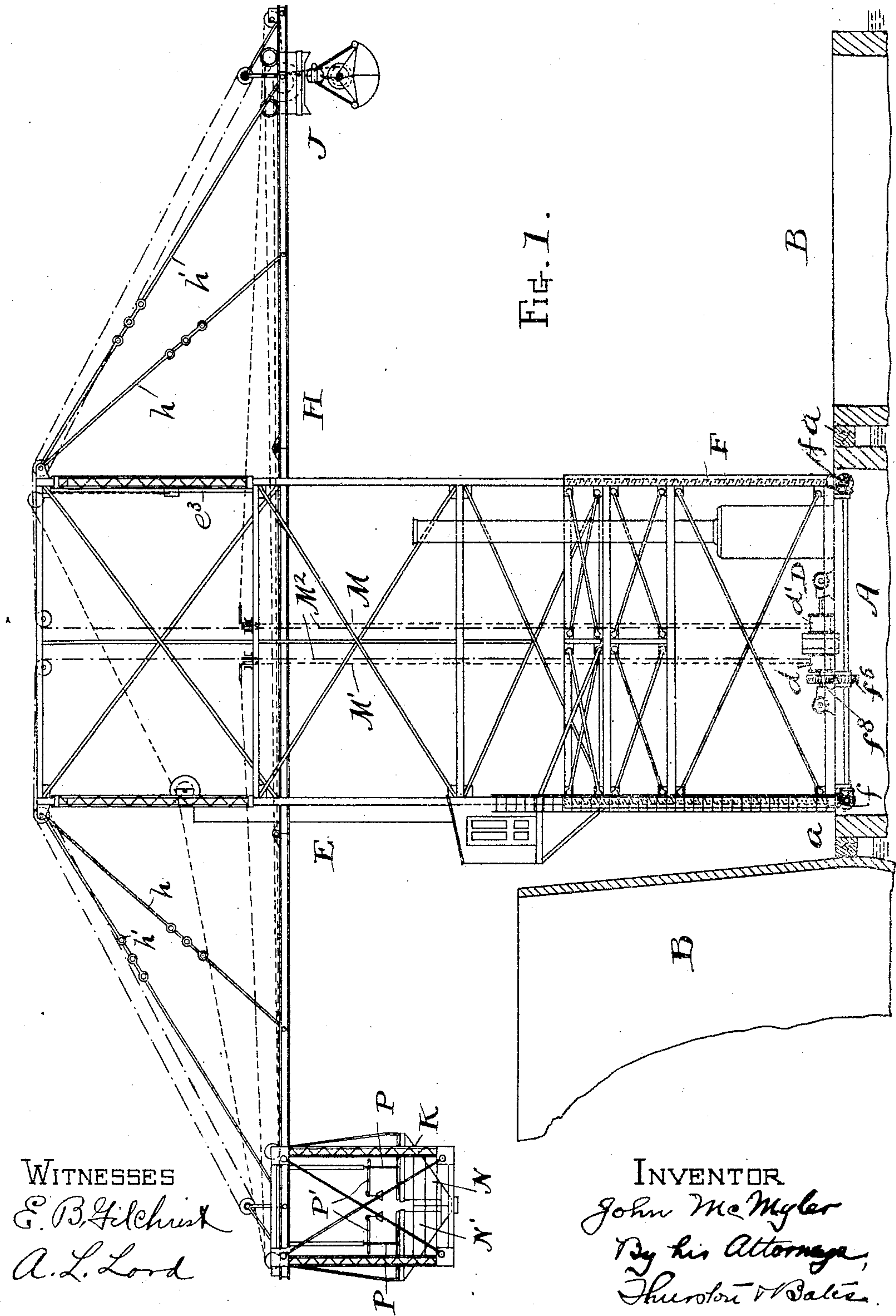
PATENTED JAN. 10, 1905.

J. McMYLER.

LOADING OR UNLOADING MACHINE.

APPLICATION FILED JAN. 18, 1904.

2 SHEETS--SHEET 1.



WITNESSES
E. B. Gilchrist
A. L. Lord

INVENTOR
John McMyler
By his Attorneys,
Shuroburt & Bates.

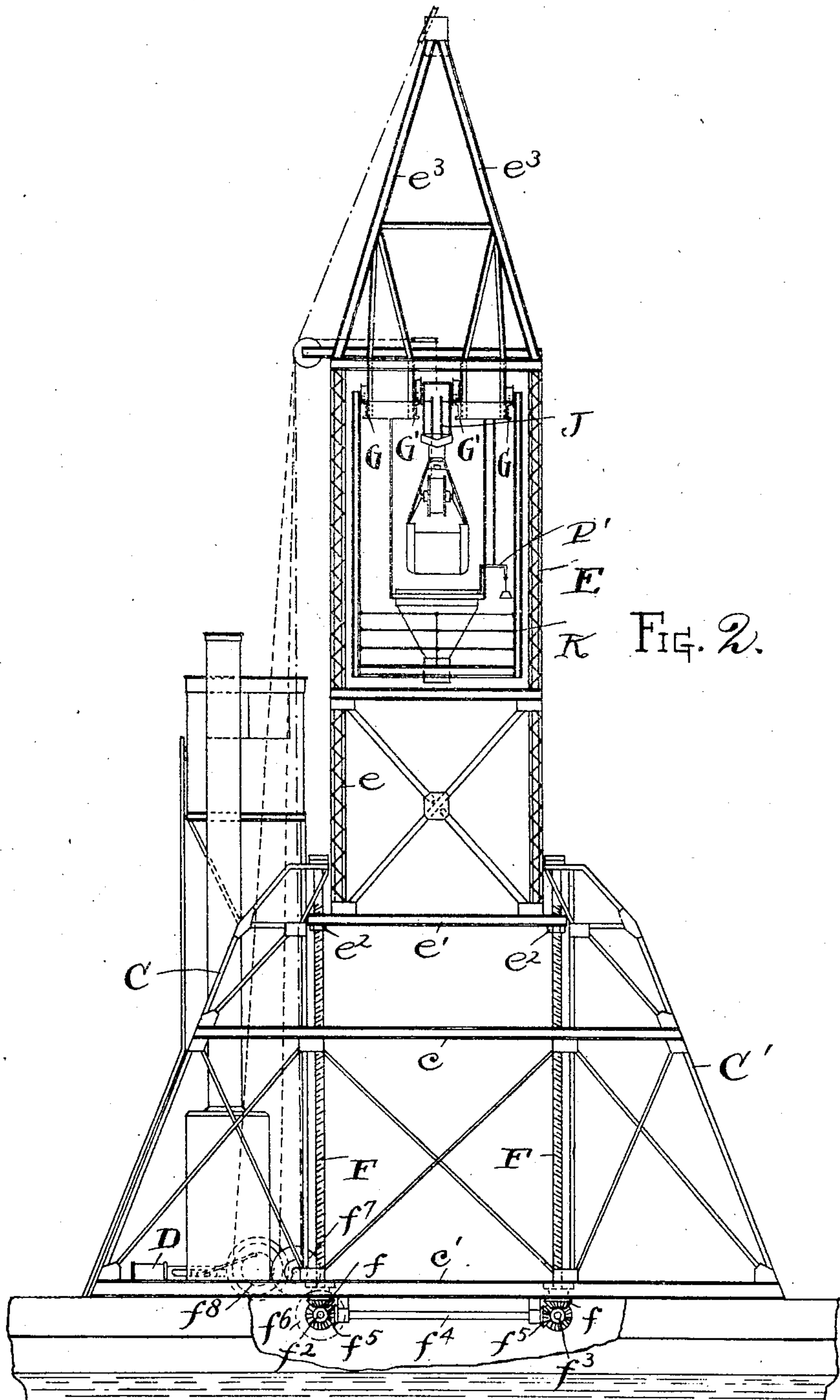
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UNITED STATES PATENT OFFICE.

JOHN McMYLER, OF CLEVELAND, OHIO.

LOADING OR UNLOADING MACHINE.

SPECIFICATION forming part of Letters Patent No. 779,493, dated January 10, 1905.

Application filed January 18, 1904. Serial No. 189,424.

To all whom it may concern:

Be it known that I, JOHN McMYLER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Loading or Unloading Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

It has been customary heretofore in the loading of vessels and boats from barges and the like to employ hoisting-machines which are erected upon scows and which are brought alongside the vessel and between it and the loaded barge. These machines have been equipped with traveling cranes provided with buckets for conveying the material from the barge to the vessel. Such devices have been used also for unloading purposes generally where they are applicable; but while reasonable satisfaction has been given there are certain limitations which prevent their very extensive use, due largely to the inability to elevate the booms bodily, and thus avoid damage to the machine itself and also allow the adjustment of the machine as a whole to the widely-varying conditions.

This invention therefore relates to hoisting-machines broadly, and more specifically to a type for obviating the above-mentioned difficulties, and also to the mechanism for bringing about these results.

It further relates to certain other details hereinafter mentioned in the following specification, drawings, and claims.

Referring to the drawings, Figure 1 is a side elevation of a device constructed according to my invention, showing a portion of the vessel in cross-section, together with the barge and the scow, also shown in section. Fig. 2 is an end view, a portion of the side of the scow being broken away to more clearly show the gearing for elevating the tower.

Referring to the parts by letters, A represents the support for the mechanism, which support may be a floating scow.

The machine consists generally of a supporting-framework, which is secured upon the scow, and a tower so arranged that it may be moved up and down within the framework.

This tower carries the two booms which support or form parts of tracks for a trolley and a hopper-cage. In this instance I have shown the devices supplied with a bucket of the clam-shell type carried by the trolley and a hopper-cage having therein weighing-scales supporting the hoppers, all of such parts being arranged in a manner such that the material in the barge may be scooped therefrom and deposited in the hopper, where it is weighed, and finally be dumped into the hold of the vessel.

Referring to the parts specifically, C represents uprights which form the standards for the framework, which is erected upon the scow, as before stated. These standards are connected by numerous cross-tie beams *c* and diagonal braces, so that a rigid skeleton frame is formed. The frame may extend laterally beyond the uprights, and this furnishes supports for the engine D and winding-drums *d* and *d'*. The tower E is arranged to be raised or lowered, as desired, within the said frame. Four long vertical screws F are carried by this frame for raising and lowering this tower, each one of which is suitably mounted in bearings at its ends, while at its lower end it projects through to the under side of the frame, where it is provided with a beveled pinion *f*. A pair of these beveled pinions upon each side of the frame meshes with corresponding beveled pinions upon one of a pair of transverse shafts *f*² and *f*³, and these shafts are made to rotate in unison by a third shaft *f*⁴, also provided with beveled pinion *f*⁵, meshing with the beveled pinion on the shafts just mentioned. The shaft *f*² is further provided with a gear *f*⁶, meshing with a gear *f*⁷, which in turn meshes with a gear *f*⁸ upon the engine-shaft, or it may be connected with the engine-shaft by any suitable clutch mechanism. (Not shown.)

The tower F is made up of four corner-posts *e*, suitable tie-rods, and cross-beams for bracing the construction throughout. These posts are mounted upon cross-beams *e'*, and each one of these beams is provided at each end with a nut *e*², which is arranged to engage its respective screw F. Thus it will be seen that when the screws are rotated the tower will be

elevated or will be lowered to any position desired, thus accommodating the machine to the conditions with respect to the height necessary for clearance.

5 The upper portion of the tower E is arranged in a manner such that the sides e^3 thereof taper upward toward a common point, as shown in Fig. 2. Immediately below this tapering portion and within the main
10 portion of the tower are the pairs of tracks G G', the outer track G being for the purpose of supporting the hopper and the scales hereinafter described and the inner tracks G' for supporting a trolley which carries the bucket.
15 To these tracks are connected the booms H, which are hinged to and form continuations thereof and are supported from the upper portion of the tower by the links $h h'$, said links being broken, so that the booms may be
20 raised out of operative position. As before stated, a trolley J, provided with suitable wheels, is arranged to move upon one pair of these tracks, preferably the inner pair G', and a hopper-cage K, provided with suitable
25 wheels, is arranged to ride upon the other pair of tracks, G, whereby the trolley may move within the hopper-cage, so that the bucket supported from said trolley may be discharged into the hoppers N N'. Suitable
30 ropes or cables M M' may be provided for moving the trolley and for operating the bucket and also for dumping the same. Other ropes, as M², are arranged to manipulate the booms, whereby they may be elevated when
35 the machine is not in use or for any other reason.

The hopper-cage K is provided with a pair of hoppers N and N', each of which constitutes a part of a pair of scales, (indicated at P,) the
40 beams P' of these scales being arranged at one side of the cage, so that they are accessible to the operator.

Having described my invention, I claim—

1. In a hoisting-machine, the combination
45 of a scow, a tower carried thereby and having a suitable track, means for raising and lowering the tower, a pair of booms pivoted to the sides of the tower and adapted to form a continuation of the track thereon, means for raising
50 and lowering said booms, and a trolley on such track.

2. In a hoisting-machine, the combination of a supporting-frame, a tower carried thereby and having a suitable track, means for
55 raising and lowering the tower, a pair of booms pivoted to the sides of the tower and adapted to form a continuation of the track thereon, means for raising and lowering said booms, a trolley on such track carrying a
60 bucket, and a hopper carried by said tower and adapted to receive the material from the bucket.

3. In a hoisting-machine, the combination with a supporting-frame, of long screws ver-

65 tically disposed and rotatably mounted in said frame, means for rotating said screws, a tower arranged to be raised and lowered thereby and having a suitable track therein, a pair of
70 booms at the sides of said tower, said booms forming a continuation of said track, a trolley upon said track carrying a bucket, and a hopper carried by said tower and arranged to receive the material from the bucket.

4. In a hoisting-machine, the combination with a supporting-frame, of long screws vertically disposed and rotatably mounted in said
75 frame, means for rotating said screws, a tower arranged to be raised and lowered thereby and having a suitable track therein, a pair of booms pivoted to the sides of said tower, said
80 booms forming a continuation of said track, a trolley upon said track carrying a bucket, a hopper also upon said track and arranged to receive the material from the bucket, and means for raising and lowering said
85 booms.

5. In a hoisting-machine, the combination with a supporting-frame, of a tower thereon carrying a track, a pair of booms at the sides
90 of the tower forming a continuation of said track, a trolley upon said track carrying a bucket, a hopper carried by said tower to receive the material from the bucket, and weighing-scales provided in connection with said
95 hopper.

6. In a hoisting-machine, the combination with a supporting-frame, of long screws vertically disposed and rotatably mounted in said
100 frame, means for rotating said screws, a tower arranged to be raised and lowered thereby and having a track therein, a pair of booms pivoted to the sides of said tower, said booms forming a continuation of said track, a trolley upon said track carrying a bucket,
105 a hopper also upon said track and arranged to receive the material from the bucket, and scales provided in connection with said hopper.

7. In a hoisting-machine, the combination with a scow, of a supporting-frame carried
110 thereby, a tower arranged to be moved vertically within said frame, two pairs of tracks mounted in said tower, a pair of booms hinged to said tower and having tracks which form continuations of the tracks carried by said
115 tower, a trolley arranged to operate upon one pair of tracks, means for operating the same, a hopper-cage arranged to run upon said other pair of tracks, said trolley being arranged to travel within said hopper-cage, a
120 pair of hoppers within said cage, and weighing-scales supporting each hopper.

8. In a hoisting-machine, the combination of a supporting-frame, a tower arranged to be moved vertically within said frame, two
125 pairs of tracks mounted in said tower, a pair of booms hinged to said tower and having tracks which form continuations of the tracks

carried by said tower, means for raising and lowering said booms, a trolley arranged to operate upon the intermediate tracks, means for operating the same, a hopper-cage arranged to run upon the outer of tracks, said
5 trolley being arranged to travel within said hopper-cage, and a hopper within said cage.

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

JOHN McMYLER.

Witnesses:

E. L. THURSTON,
B. W. BROCKETT.