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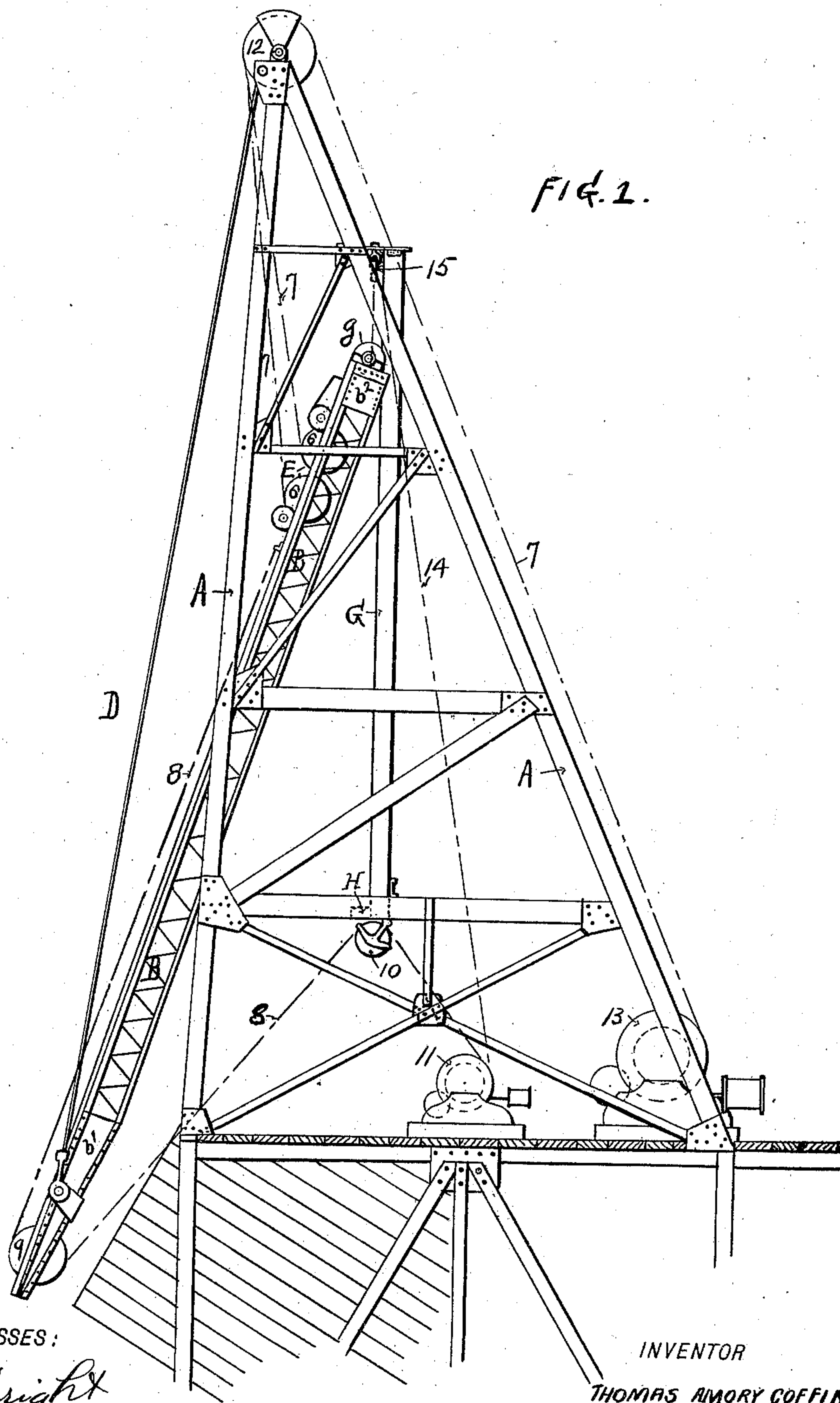
T. A. COFFIN.
HOISTING BOOM.

(Application filed July 11, 1901.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.



WITNESSES:

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THOMAS AMORY COFFIN, OF WEST NEW BRIGHTON, NEW YORK.

HOISTING-BOOM.

SPECIFICATION forming part of Letters Patent No. 686,205, dated November 5, 1901.

Application filed July 11, 1901. Serial No. 67,883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS AMORY COFFIN, a citizen of the United States of America, and a resident of West New Brighton, in the borough of Richmond, State of New York, have invented Improvements in Hoisting-Booms, of which the following is a specification.

My invention relates to hoisting apparatus of that class in which an overhanging boom is employed—as, for instance, hoisting apparatus of the type commonly known under the name of the “Boston tower,” used for unloading and loading boats and ships, &c., at wharfs. In such apparatus there is provided an upright framework or tower, either a fixture or mounted upon wheels either on a wharf, float, or elsewhere, and upon this tower is mounted a horizontally-projecting boom, upon which a trolley can be traversed between the tower and the outer end of the boom. This trolley usually carries a sheave or sheaves over which the hoisting-rope passes for the raising and lowering of the clam-shell bucket, tub, skip, or other load-carrier.

The object of my invention is to so construct the boom and combine it with the tower that while the boom itself is made strong and capable of withstanding all strains and stresses it can be easily moved out of the way when desired without colliding or interfering with the masts, spars, or rigging of vessels at the wharf.

In the accompanying drawings, Figure 1 is a side elevation of the upper part of a tower, showing the boom drawn back. Fig. 2 is a side view of the boom and part of the tower in section, showing the boom in its horizontal position when in use. Fig. 3 is a transverse section on the line 3 3, Fig. 2, but on a larger scale. Fig. 4 is a sectional plan on the line 4 4, Fig. 2; and Fig. 5 is a transverse section on the line 5 5, Fig. 2.

A A represent the framework or tower, which may be of any suitable construction, and, as I have said, may be a fixture on the wharf or other situation or may be mounted on rollers, as is common; but I have shown only the upper part of this tower in Fig. 1.

B B represent the outwardly-projecting boom, whose outer end is shown as supported by guys (rods or ropes) D D, extending from the peak of the tower, while the inner end of

the boom is supported upon a suitable part of the tower-framework—as, for instance, on the abutment H, Figs. 1 and 2. The boom B is composed of two longitudinal truss-beams b b , secured together at opposite ends by cross-pieces b' b^2 , and leaving between these parts a long open space in which the trolley E can travel. Each beam b is composed of an upper compression member 23, tied by lattice-work 25 or otherwise to a lower tension member 24, and the upper member 23 is composed of two \angle -bars 3' 3', reversed with reference to each other, Fig. 3, and bolted together through their adjacent lower flanges, thus forming on the upper side of the beam a channel-way clear of all rivet-heads for the reception and guidance of the running-wheels e e of the trolley E, Fig. 3. At the same time the upwardly-projecting flanges on the bars 3' will resist any tendency to lateral buckling of the boom. The symmetrical section of each beam further prevents tendency to buckling, which is a matter of importance, because otherwise the boom would be weak, since the clear passage required for the trolley and hoisting ropes does not permit of the two beams b b being connected with each other at points between the opposite ends of the boom. To avoid distorting strains on the individual beams, I connect the lower ends of the guy-rods D D to a stirrup D', which passes under the outer end of the boom, Figs. 2 and 5, instead of connecting said rods to the flanges of the beams b b themselves. The guys cannot be connected to the webs of the beams, for then they would be in the way of the trolley.

The trolley E carries one or more sheaves 6, over which will pass the rope or ropes 7 for the hoisting of the bucket or other load-carrier. Where a clam-shell bucket is used, for example, two such sheaves and ropes will be needed, and with this in mind I have shown in the drawings two sheaves 6 6 on the trolley. The outward travel of the trolley is obtained by a rope or chain 8, secured to the outer end of the trolley and passing over a sheave 9 on the end of the boom and thence over a sheave 10 on the tower to a suitable hoisting-drum 11. The inboard travel of the trolley is obtained by the pull of the load on the hoisting-rope when the rope 8 is paid off

its hoisting-drum. The hoisting-ropes 7 will pass up from the trolley E to sheaves 12 at the top of the tower and thence to a suitable hoisting-engine 13.

5 In order that the boom may be readily moved out of the way when desired and without danger of collision with the rigging of vessels at the wharf side, I support the inner end of the boom on the tower in such a way
10 as to permit said inner end to be elevated from the position it occupies when the boom is horizontal, so that thereby the outer end of the boom supported by the guy rods or ropes D D will be brought inward into close
15 proximity to the tower, as illustrated in Fig. 1. For this purpose I prefer to provide the tower with a substantially vertical track G of suitable length, and against this track will
20 bear a roller or rollers g at the inner end of the boom B, so as to facilitate the lifting of the inner end of the boom. This lifting may be effected by a rope or chain 14, connected to the inner end of the boom, and thence passing up over a pulley 15 near the top of the
25 track G, and thence down to a suitable hoisting-drum, which may be conveniently combined with the engine of the drum for traversing the trolley on the boom.

I claim as my invention—

30 1. A hoisting-boom composed of two longi-

tudinal side beams connected together near their ends, said beams having their upper compression members composed each of two L-bars bolted together by adjacent flanges below and forming a grooved way above, as 35 and for the purpose described.

2. The combination of a hoisting-boom having a trackway and a sheave-trolley thereon with a tower having a vertical track, guy-rods extending from the upper part of the 40 tower to the outer end of the boom and means for elevating the inner end of the boom as it moves along said vertical track to bring the outer end of the boom into close proximity to the tower, substantially as set forth. 45

3. The combination of a hoisting-boom having a trackway and a sheave-trolley thereon with a tower having a vertical track and means for elevating the inner end of the boom 50 as it moves along said vertical track to bring the outer end of the boom into close proximity to the tower, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS AMORY COFFIN.

Witnesses:

F. WARREN WRIGHT,
HUBERT HOWSON.