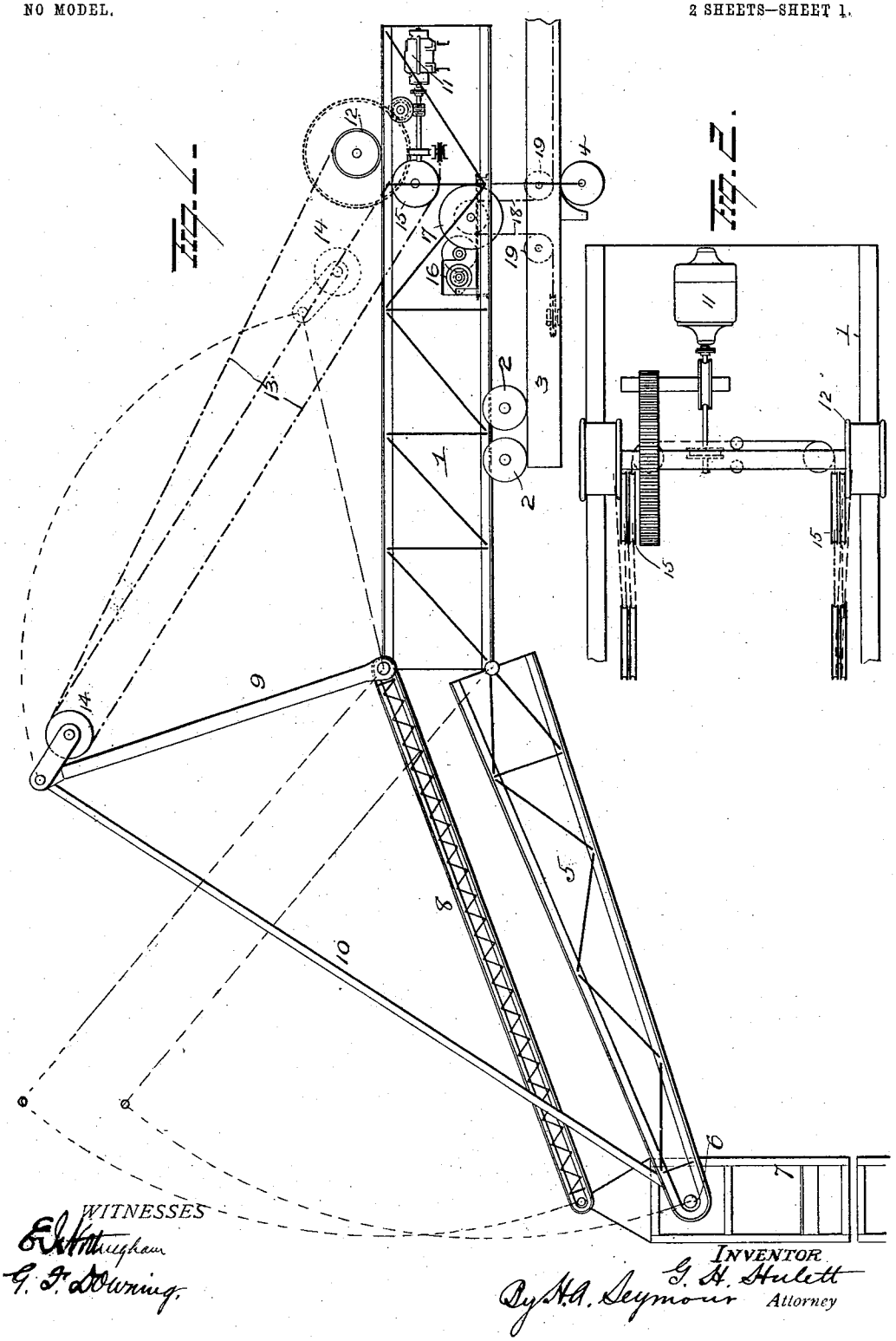
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G. H. HULETT.

SUPPORTING AND CONVEYING APPARATUS FOR ORE SCRAPERS.

APPLICATION FILED NOV. 11, 1902.

NO MODEL. 2 SHEETS—SHEET 1.



WITNESSES

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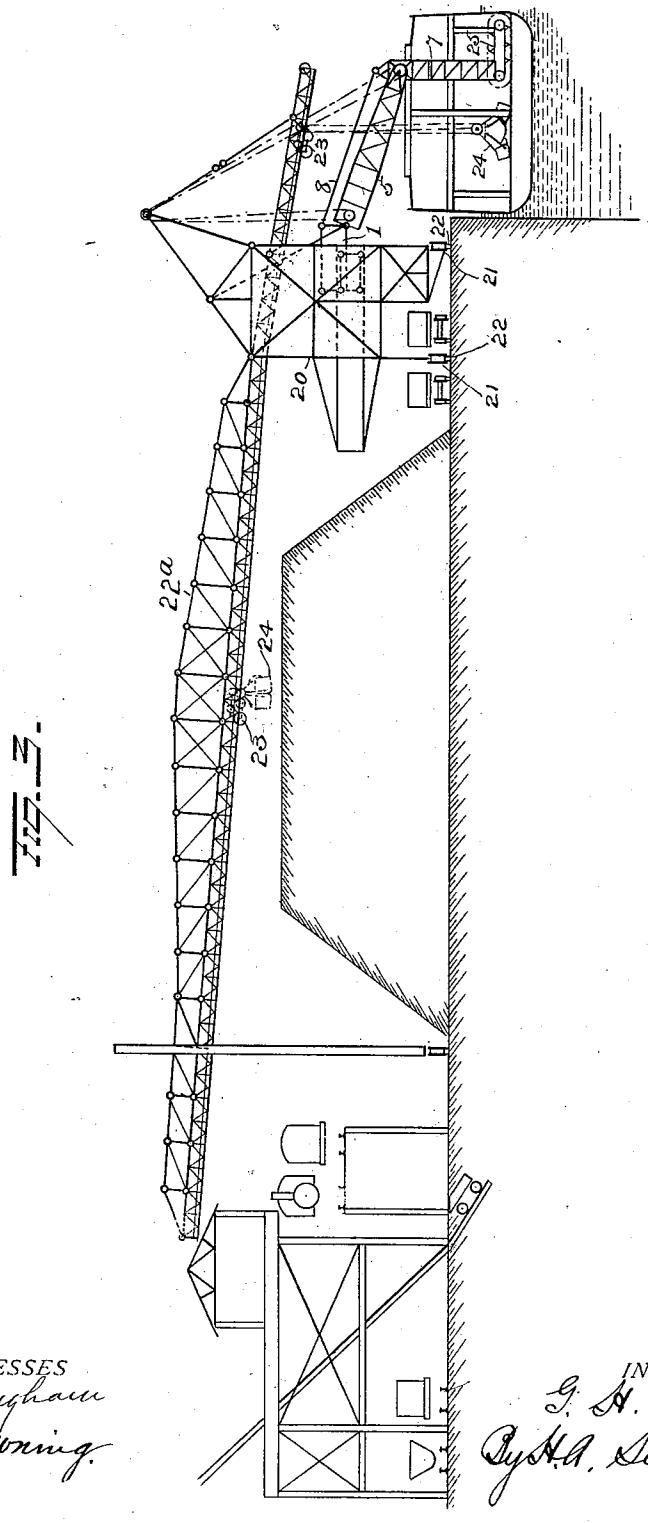


FIG. 2.

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UNITED STATES PATENT OFFICE.

GEORGE H. HULETT, OF CLEVELAND, OHIO.

SUPPORTING AND CONVEYING APPARATUS FOR ORE-SCRAPERS.

SPECIFICATION forming part of Letters Patent No. 742,436, dated October 27, 1903.

Application filed November 11, 1902. Serial No. 130,851. (No model.)

To all whom it may concern:

Be it known that I, GEORGE H. HULETT, a resident of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Supporting and Conveying Apparatus for Ore-Scrapers; and I do hereby 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.

My invention relates to an improved supporting and conveying apparatus for ore-scrapers, the object of the invention being to provide an improved apparatus of this character for conveying an ore-scraper, preferably of the character disclosed in an accompanying application, to a boat, supporting it in operative position therein, moving it throughout the hatch, and removing it therefrom when the boat is unloaded.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as will be more fully hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view illustrating my improvements. Fig. 2 is a top view of a portion thereof; and Fig. 3 is a view illustrating a complete apparatus, showing my improvements slightly modified.

1 represents a girder or frame supported on rollers 2, mounted on a track 3, forming a part of any desired conveyer or frame, and the girder or frame 1 also has connected therewith a roller or rollers 4 to run on the under side of the track and prevent tilting of the girder. On the outer end of this girder or frame 1, at its lower corner, a heavy boom 5 is hinged and is pivotally connected at its free end by a rod or shaft 6 to a scraper-frame 7, this pivotal connection being below the upper end of the scraper-frame, as shown.

To the upper corner of the outer end of girder 1 an equalizing-bar 8 is hinged, extends above and parallel with boom 5, and is pivotally connected to the top of scraper-frame 7. At this upper corner of the outer end of girder 1 a post 9 is hinged and has its upper end connected with rod or shaft 6 by means of a rod or bar 10, by means of which the scraper leg or frame 7 is raised and lowered, always maintaining its perpendicular, as will more fully hereinafter appear.

On the girder or frame 1 a motor 11 is mounted and connected by suitable gearing with a drum 12. Cables 13 are secured to these drums and extend therefrom and pass around a sheave 14 at the upper end of post 9 and around sheaves 15 on girder or frame 1, so that by operating the motor and drum the cables are shortened and lengthened to raise and lower boom 5 and the scraper frame or leg, as desired. Another motor 16 is mounted on girder or frame 1 to operate a drum 17, from which cables 18 run around pulleys 19 on track 3 in opposite directions, so that by operating this motor the girder and scraper frame or leg can be moved outward over a boat or be drawn inward inside the dock at the will of the operator.

In Fig. 3 a complete working apparatus is illustrated, in which the girder 1 is shown carried by a conveyer-frame 20, having wheels or rollers 21, mounted on rails 22, permitting movement of the apparatus in either direction.

22 represents a bridge, on which a trolley 23 is mounted and operates an ordinary excavating-bucket 24, and in this view the scraper-leg is shown provided at its lower end with a rotary or endless scraper 25 to move the material in the boat into position to be removed by bucket 24. The details of this scraper are disclosed in an accompanying application and need not be further described here.

The operation of my improvements is as follows: The girder or frame in its normal position is moved inward to hold the scraper out of the way of the ships. When a ship is to be unloaded, the bucket 24 is first lowered into the hatch and removes such material as it can reach. The motor 16 is then operated to project the girder outward and dispose the scraper leg or frame over the hatch. Motor 11 is then operated to turn drum 12, lengthen cables 13, and permit post 9 to tilt, the upper end of which latter being connected by rod 10 with the scraper-leg and boom 5 permits the leg to lower, and as the equalizing-bar 8 is always maintained in parallelism with boom 5 the scraper-leg is always maintained vertical at any elevation. It will thus

be seen that the movement of the scraper-leg is always under the absolute control of the operator, and its correct vertical position is assured.

A great many slight changes might be made in the general form and arrangements of the parts described without departing from my invention, and hence I would have it understood that I do not confine myself to the precise construction set forth, but consider myself at liberty to make such slight changes and alterations as fairly fall within the spirit and scope of my invention.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a girder and a scraper frame or leg, of a boom hinged to the forward end of said girder and hinged at the other end to said scraper-frame and an equalizing-bar disposed parallel with the boom and hinged at its respective ends to the girder and scraper-frame.

2. The combination with a traveling girder and a scraper-frame, of a boom hinged at its respective ends to the traveling girder and scraper-frame, and an equalizing-bar disposed parallel with the boom and hinged at its respective ends to the traveling girder and the scraper-frame.

3. The combination with a traveling girder and a scraper-frame, of a beam hinged to the traveling girder and scraper-frame, an equalizing-bar hinged to the traveling girder and scraper-frame, means for moving the girder horizontally and means for raising said boom and equalizing-bar simultaneously to raise the scraper-frame.

4. The combination with a girder or frame, of a boom hinged to one end thereof, an equalizing-bar also hinged to the girder and located parallel with the boom, a frame or leg to which the boom and equalizing-bar are pivotally connected, a hinged post on the girder, a rod or connecting device between the post and boom and means for swinging the post to move the boom.

5. The combination with a girder or frame, of a boom hinged to one end thereof, a frame or leg supported by the boom and to which it is pivotally connected, an equalizing-bar hinged to the girder, pivotally connected with the leg and located parallel with the boom, a post hinged on the girder, a rod or connecting device connecting the free end of the post with the boom at its pivotal connection with the leg, operating-cables passed around a sheave at the free end of said post and means for lengthening and shortening the cables to lower and raise the boom.

6. The combination with a laterally-movable frame, of a longitudinally-movable girder thereon, a boom hinged to said girder and pivotally connected with a device to be raised and lowered, an equalizing-bar parallel with the boom, hinged to the girder and pivotally connected to said device above the boom connection, and means for raising and lowering the outer end of the boom.

7. The combination with a track, of a girder or frame, wheels on the girder supported on the track and a wheel carried by the girder to run on the lower face of the track, parallel hinged bars carried by the girder and connected with a device to be raised and lowered and means for raising and lowering the bars and means for moving the girder on the track.

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

GEORGE H. HULETT.

Witnesses:
G. I. STEVENSON,
H. B. CODY.