

(No Model.)

A. H. HAWGOOD.
CARGO TRIMMER.

No. 564,150.

Patented July 14, 1896.

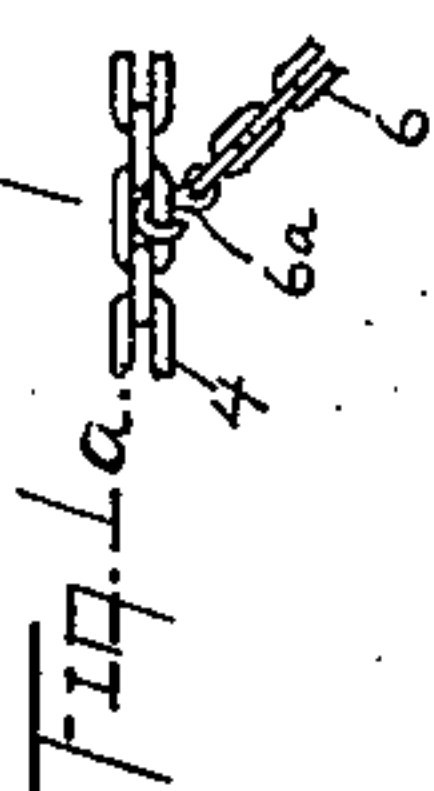
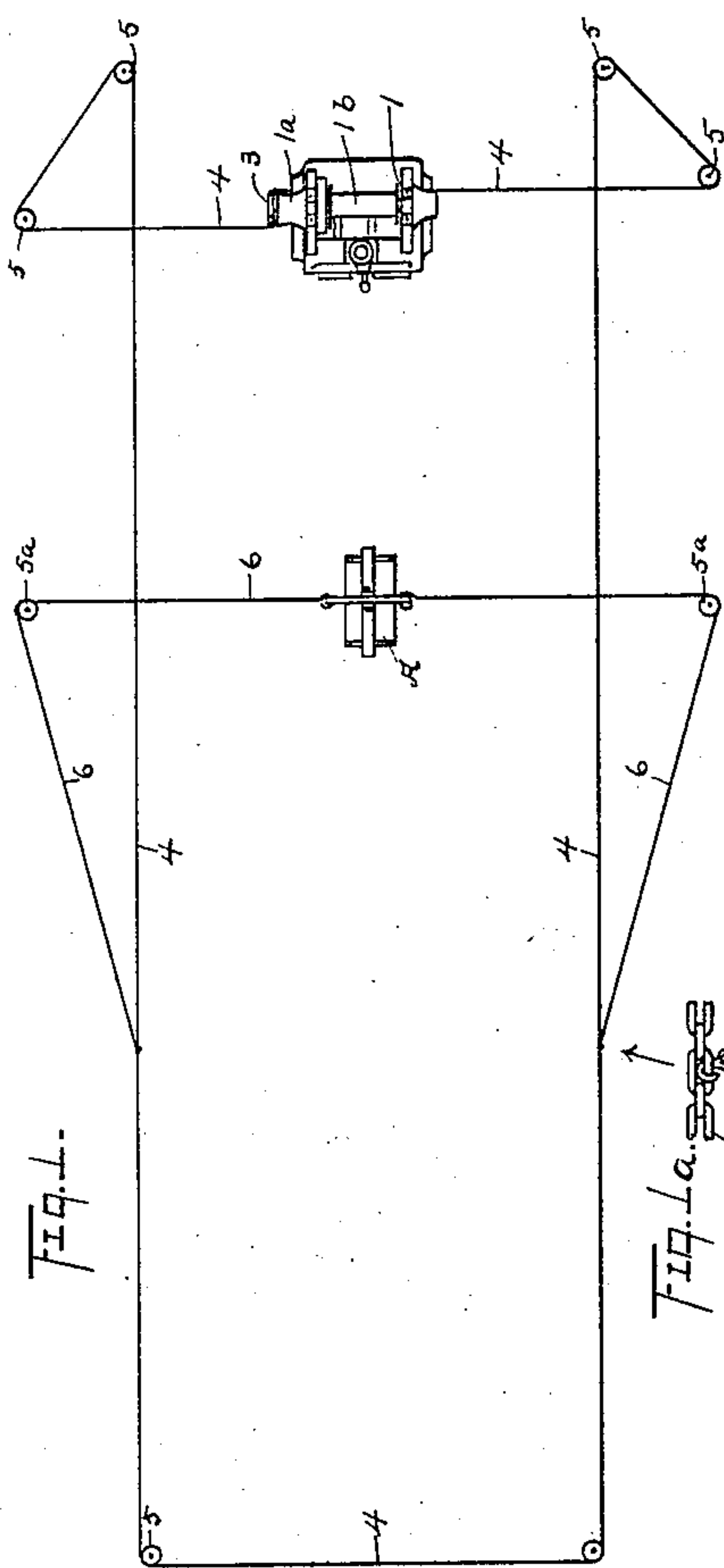


Fig. 2.

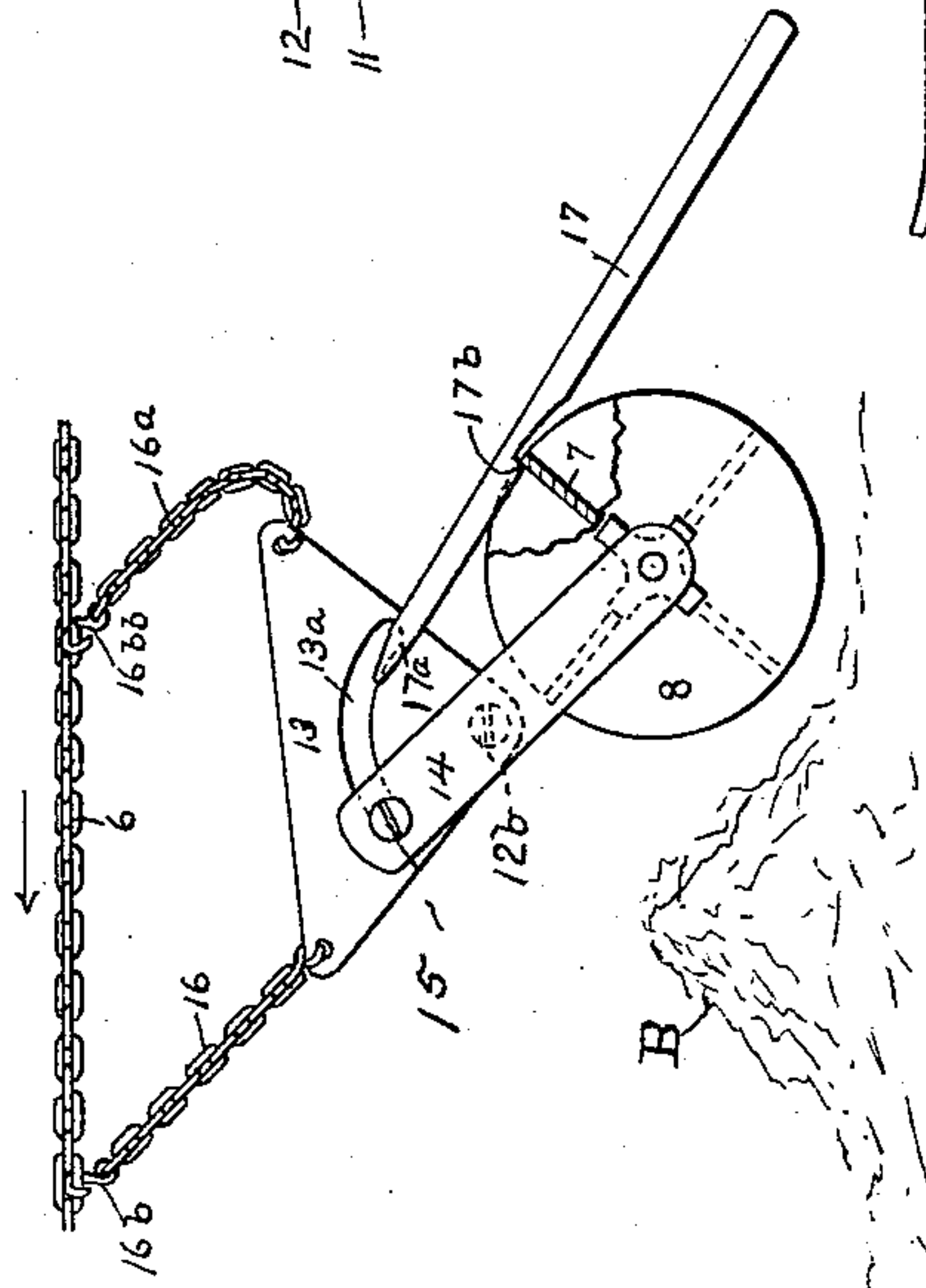


Fig. 3.

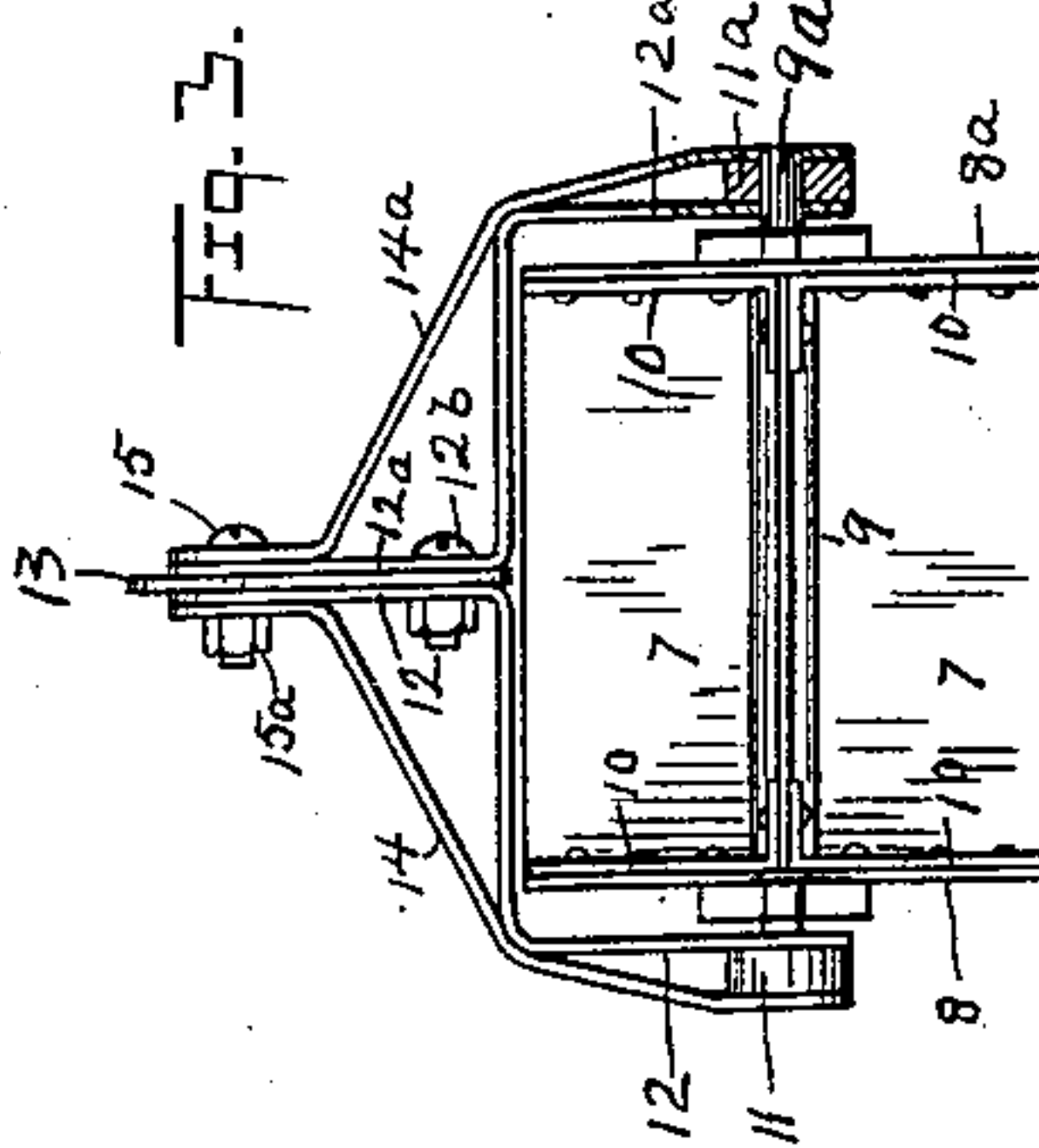


Fig. 5.

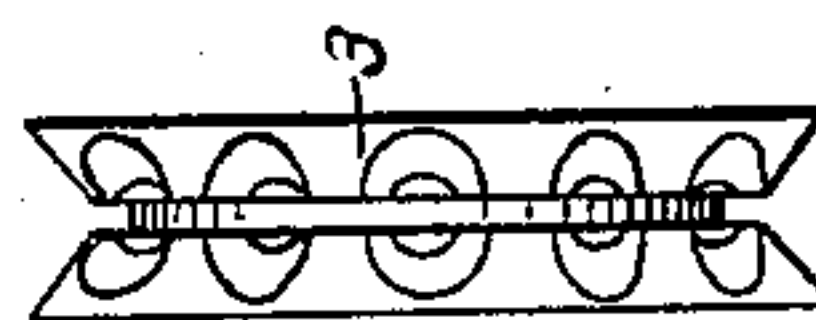


Fig. 6.

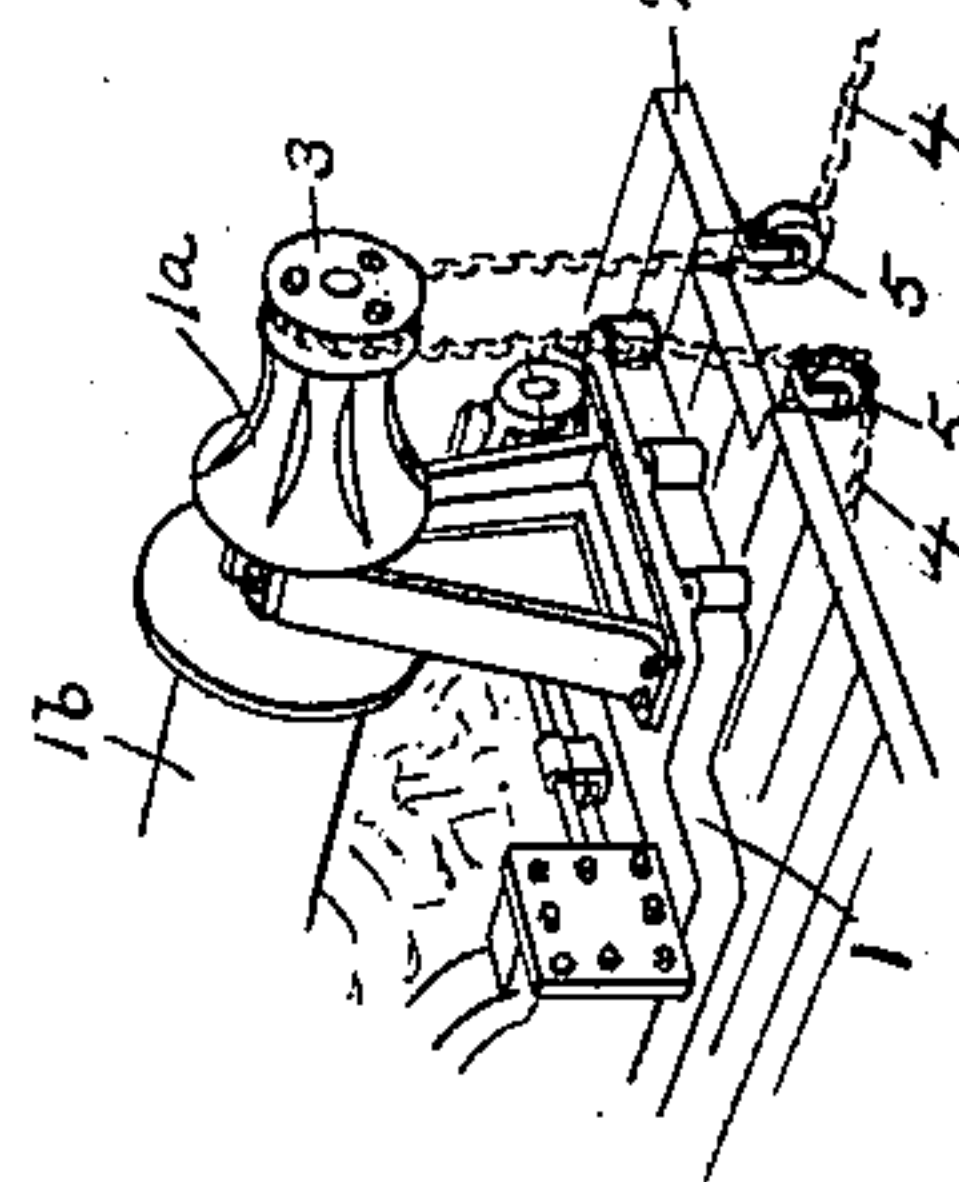
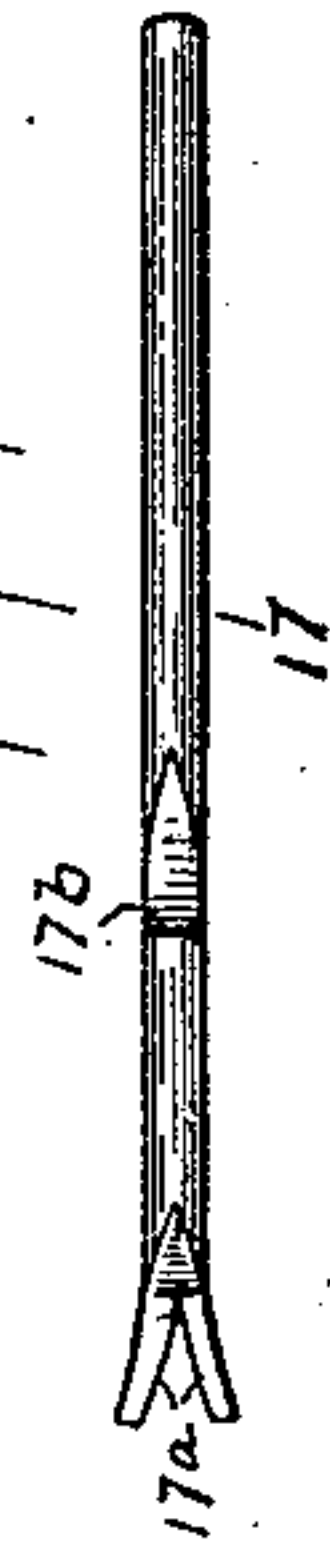


Fig. 4.



WITNESSES

Belle S. Lowrie
E. E. Osborne.

INVENTOR,
Arthur H. Hawgood,
By J. A. Osborne & Co.,

ATTORNEY.

UNITED STATES PATENT OFFICE.

ARTHUR H. HAWGOOD, OF CLEVELAND, OHIO.

CARGO-TRIMMER.

SPECIFICATION forming part of Letters Patent No. 564,150, dated July 14, 1896.

Application filed March 2, 1896. Serial No. 581,480. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR H. HAWGOOD, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga, State of Ohio, have invented certain new and useful Improvements in Cargo - Trimmers, of which the following, with the accompanying drawings, is a full, clear, and exact specification.

My invention relates to means for spreading ore in the hold of vessels, and for similar uses. This means I designate as a "cargo-trimmer."

In loading a vessel with ore the ore is emptied from carriers or otherwise in a pile or heap and has to be spread out to even the cargo in the hold of the vessel. This has heretofore been done by shovelers.

The objects of my invention are means for mechanically spreading cargoes of ore evenly in the holds of vessels, and simplicity and strength in such means, and ease of handling the same, whereby a cargo of ore may be quickly, easily, and cheaply trimmed.

My invention consists of the construction and combination of parts described herein and defined in the claims.

In the drawings, Figure 1 is a diagrammatic reduced view illustrating the application of my invention. Fig. 2 is a side elevation of my invention, illustrating its application to work. Fig. 3 is a front elevation of my cargo - trimmer. Fig. 4 illustrates the form of lever used by a workman in handling the trimmer. Fig. 5 is an enlarged elevation of a chain-wheel that is attached to the winch-head or the drum-shaft of the reversible deck-engine, and from which the ore-trimmer is operated; and Fig. 6 is a perspective view of a portion of a deck-engine, illustrating how power is communicated to the trimmer.

In all the figures of the drawings like reference-characters refer to like parts.

The deck-engine 1 stands upon the deck 2 of a vessel, and a chain-wheel 3, through which power is transmitted from the deck-engine to the chain 4 that carries the trimmer, is attached to the winch-head 1^a of the engine. The chain-wheel is illustrated as attached to the outer end of the winch-head, though it may be attached to the inner end of said head or be keyed upon the shaft of the drum 1^b.

The main drag-chain 4 passes over the chain-wheel 3 and around a set of pulleys 5, that are immediately below the deck 2. The main drag-chain is endless, and it travels in one direction or oppositely thereto with the rotation of the winch-head of the reversible deck-engine. Said main drag-chain is arranged to drag the cargo of a vessel to a level fore and aft. One or more cross drag-chains 6, arranged at each hatchway of the vessel, is employed to drag the cargo to a level athwartships. Said cross drag-chains have hooks 6^a at their ends to provide for attaching the cross-chains to the main drag-chain and for detaching them therefrom.

In Fig. 1 the cargo-trimmer is illustrated as connected with the cross drag-chain at A.

My cargo-trimmer consists of a revoluble scraper formed of vanes or scrapers 7 7, set between disks 8 8^a, and having their inner edges attached to a central shaft 9. The vanes and the end disks are preferably connected by suitable angle-irons 10 10. The ends of the shaft 9 are turned down to form spindles 9^a, that enter and turn in the boxes 11 11^a. The two sides 12 12^a, forming a yoke-frame, have openings near one end, through which pass and in which turn the spindles 9^a, the spindles forming a support for one end of the yoke-frame. Between the opposite ends of the sides of the yoke-frame is pivoted, at 12^b, a rocking coupling 13. The pivoted coupling 13 is provided with a curved slot 13^a, radial to the pivot 12^b. Braces 14 14^a are fixed to the outer ends of the boxes 11 11^a, pass over the corners of the yoke-frame, and slant inwardly, as illustrated, Fig. 3, to the forward projecting ends of the yoke-frame, where the braces are bent to lie flat against the yoke-frame. A bolt 15 passes through the braces, yoke-frame, and the slot 13^a, in the pivoted coupling 13. The bolt 15 is held in place by the nut 15^a. The braces 14 14^a not only strengthen the machine, but they relieve it of all acute angles and form fenders to deflect the machine from stanchions in a vessel's hold. To the outer corners of the pivoted coupling 13 are attached chain-couplings 16 16^a, provided with hooks 16^b 16^{bb} for coupling the machine to the drag-chains.

When the drag-chain travels in the direction indicated by the arrow in Fig. 2, the machine will be dragged along by the coupling-

chain 16. When the drag-chain travels in the opposite direction, the yoke-frame, braces, and pivoted coupling will turn on the spindles 9^a to the opposite side of the revoluble scraper, and the pull will be upon the coupling-chain 16^a, while the coupling-chain 16 will be slack. That is to say, the parts of the machine will be reversed from the position shown in Fig. 2 of the drawings.

As the revoluble scraper is drawn along by the drag-chain to which it may be coupled it will roll over the cargo until a point is reached where it is desired to have the scraper operate. The workman in charge then places the lever 17 with its forked or notched end 17^a against the edge of the pivoted coupling and having the notch 17^b engage one of the vanes, as illustrated in Fig. 2. The workman then follows the scraper, keeping the lever in place, as illustrated in Fig. 2. This will prevent the scraper from revolving and will cause the lower vane to engage the pile of ore B and scrape it down to a level. When a level shall have been reached, the workman or tender releases the notch 17^b from the vane with which it has been engaged, and the scraper will then roll along without doing any work. The lever also serves as a medium to gage the depth to which the scraper will go by downward pressure on the outer end of the lever. As the scraper rolls along the operator can guide it or keep it from sliding into undesired places by placing the forked end 17^a of the lever over one of the sides of the yoke-frame, over the braces, or over the pivoted coupling, and direct the course of the scraper with the lever.

By coupling the scraper to either lap of the main drag-chain the cargo will be leveled fore and aft. By connecting the ends of the cross drag-chains, as described, and coupling the scraper to the cross drag-chain, the operation of the main drag-chain in either direction causes the cross drag-chain and the scraper to travel athwartships. As the cross-chain 6 passes around the side pulleys 5^a 5^a and its ends are attached to the main drag-chain, the movement of the main drag-chain longitudinally gives the cross drag-chain a movement at right angles thereto.

Only a diagrammatic arrangement of the drag-chains is shown independently of a vessel, because vessels vary in construction, and the arrangement of drag-chains will depend upon the construction of the vessel and the location of stanchions therein.

Any suitable arrangement of the drag-

chains may be made, and power may be applied to said chains by any desired means.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a drag-chain, a revoluble scraper, and a coupling to connect the scraper to the drag-chain, substantially as described.

2. The combination of a revoluble scraper provided with a yoked frame adapted to be reversed on the spindles of the scraper, and means for dragging said scraper, substantially as described.

3. The combination of a revoluble scraper, a yoked frame, and a coupling pivoted to the yoked frame, substantially as described.

4. The combination of a revoluble scraper, a yoked frame reversible on the spindles of the scraper, a coupling pivoted to the yoked frame, the pivoted coupling having a curved slot, and a bolt or pin passing through said slot to limit the movement of the pivoted coupling, substantially as described.

5. The combination of a scraper consisting of vanes with disks at their ends, spindles, a yoked frame carried upon the spindles, and means for locking the scraper to prevent its turning, substantially as described.

6. The combination of a revoluble scraper consisting of vanes with disks at their ends, spindles, a yoked frame carried by the spindles, and braces arranged substantially as described.

7. The combination of a revoluble scraper with a lever having a forked end and a notch in its side, substantially as described.

8. The combination of a revoluble scraper consisting of vanes with disks at their ends, spindles, a yoke-frame carried by the spindles, braces, and a coupling pivoted to the frame, substantially as described.

9. The combination, with a ship, of drag-chains, a revoluble scraper, and means for controlling the scraper, substantially as described.

10. The combination, with a ship, of drag-chains, a scraper, a pivoted coupling connected with the scraper, and means for attaching the pivoted coupling to the drag-chains, substantially as described.

In testimony whereof I affix my signature, in the presence of two witnesses, this 29th day of February, 1896.

ARTHUR H. HAWGOOD.

Witnesses:

J. A. OSBORNE,
E. E. OSBORNE.