J. W. RENO.

APPARATUS FOR UNLOADING SCOWS.

APPLICATION FILED JAN. 7, 1909.

922,190.

Patented May 18, 1909.

2 SHEETS—SHEET 1.

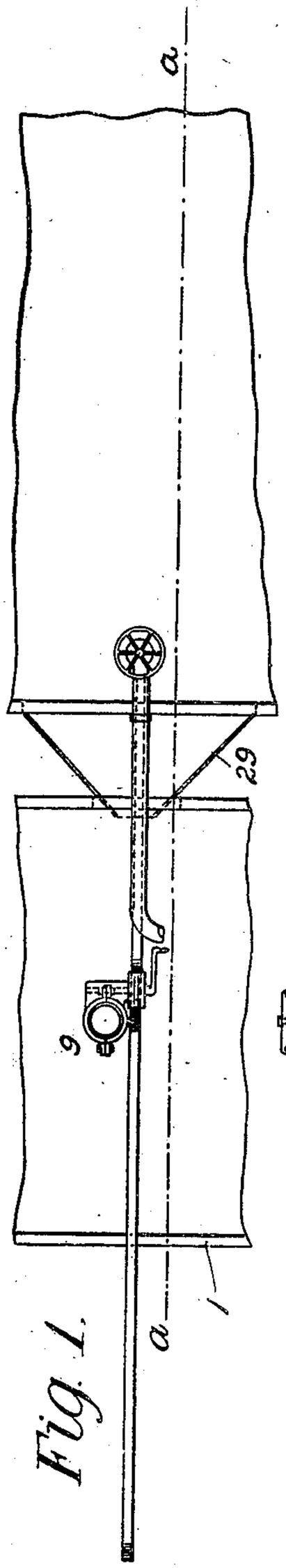

Fig. 1.

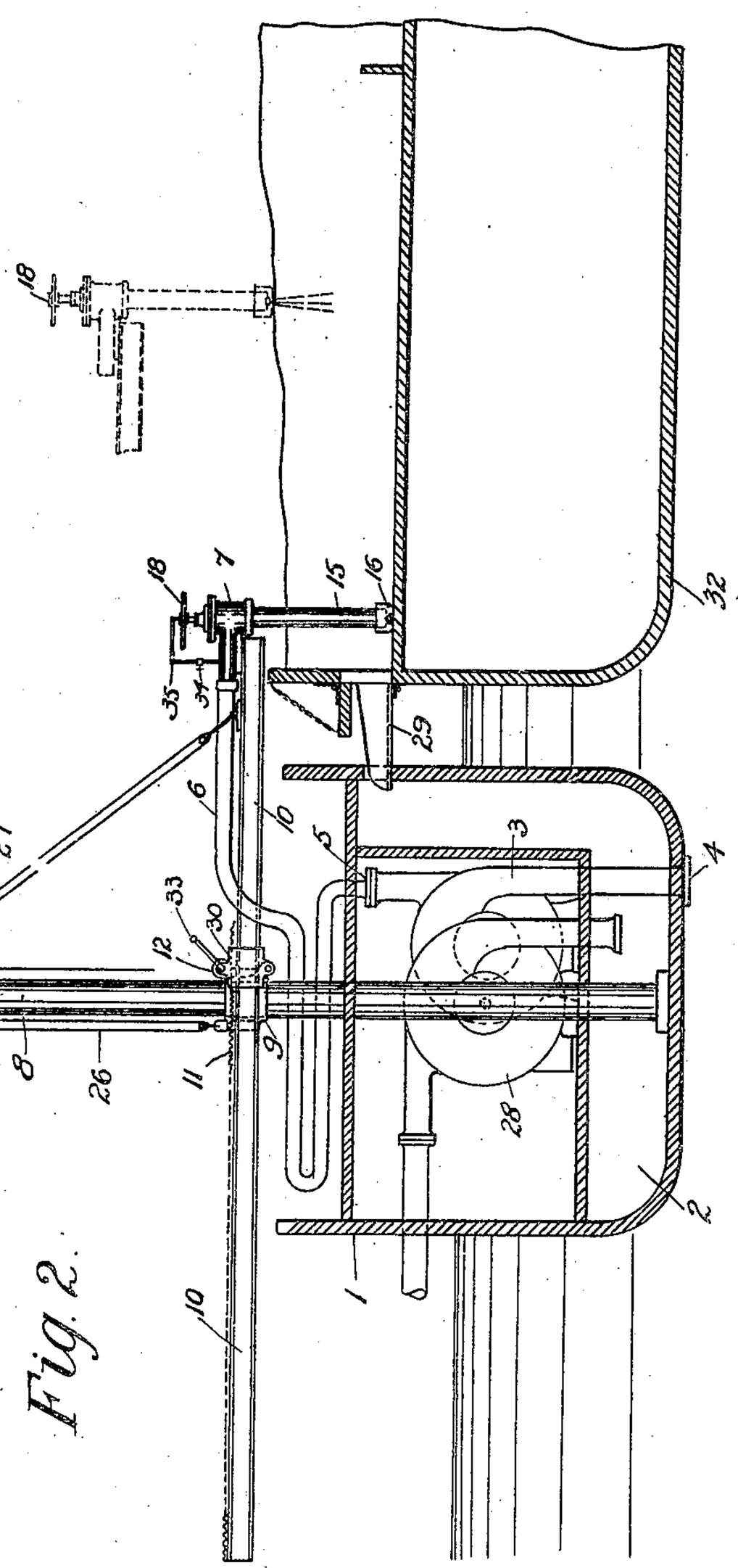

Fig. 2.

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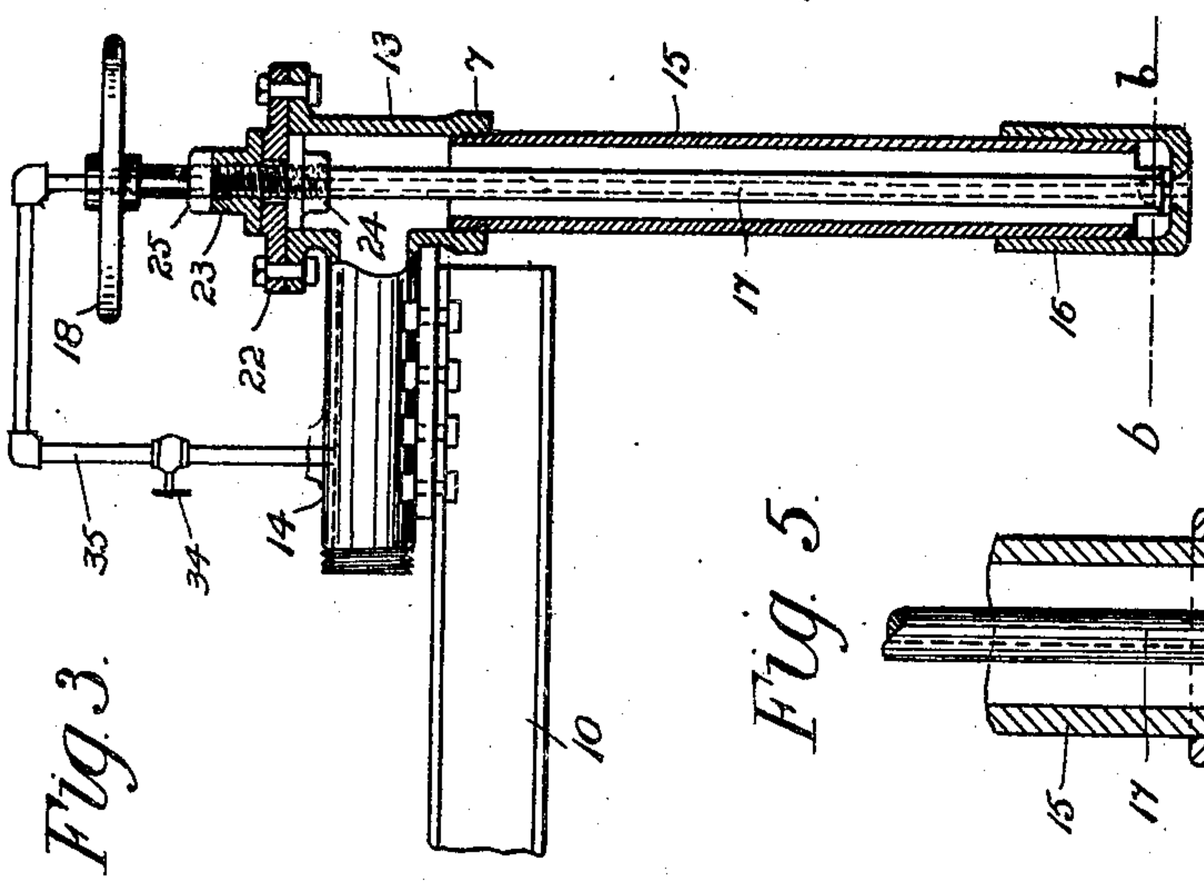

Fig. 3.

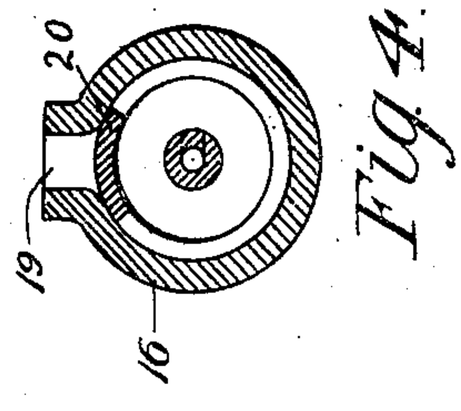

Fig. 4.

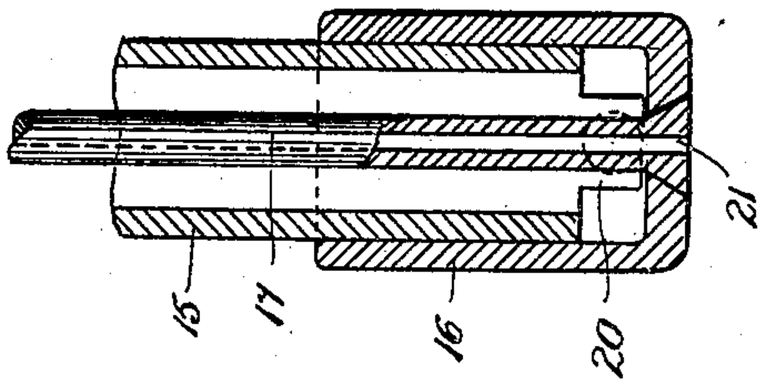

Fig. 5.

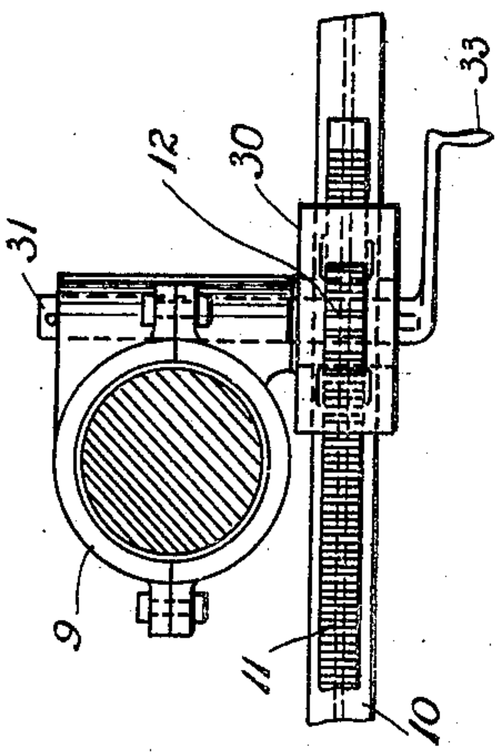

Fig. 6.

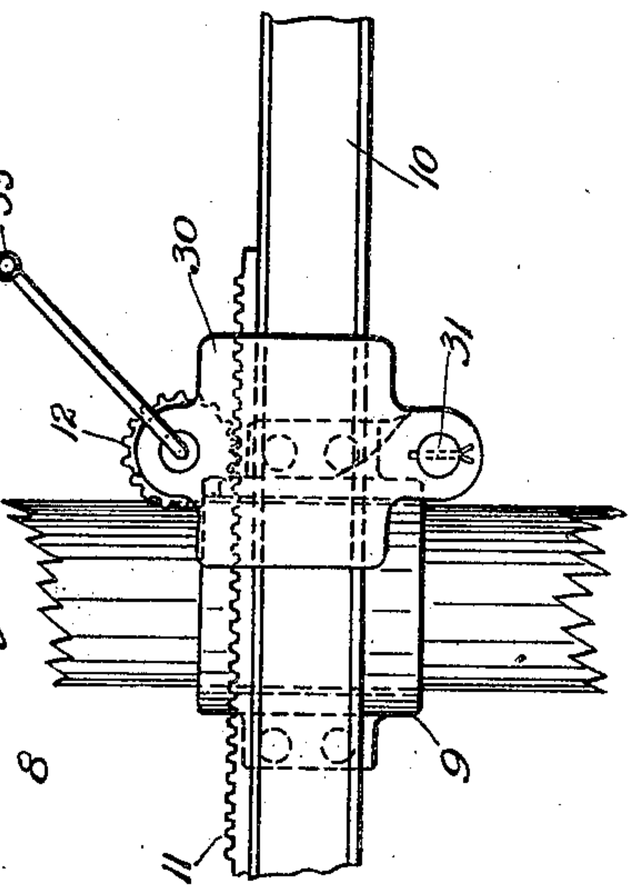

Fig. 7.

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR UNLOADING SCOWS.

No. 922,190. Specification of Letters Patent. Patented May 18, 1909.

Application filed January 7, 1909. Serial No. 471,126.

To all whom it may concern:

Be it known that I, JESSE WILFORD RENO, a citizen of the United States of America, and resident of the city, county, and State of New York, have invented certain new and useful Improvements in Apparatus for Unloading Scows, of which the following is a specification.

My invention relates to improvements in methods and apparatuses for removing loads consisting of soft or loose material, such as mud, sand, gravel, ashes, garbage, street sweepings etc., from flat boats or scows.

The object of my invention is to provide an apparatus of this character which shall be simple and effective in its construction and operation and one which can be easily transported from place to place as required.

My invention consists in providing a pump, preferably a centrifugal or rotary pump; in providing a nozzle and a jet for sinking the nozzle through the material to be removed, means for controlling the same so that it may be adjusted to various positions on the flat boat to be unloaded; in providing means for controlling the direction of the nozzle; in providing a compartment adapted to receive the material mixed with water as it is washed from the deck of a flat boat; in providing hydraulic means for taking the material out of said compartment; and in other novel features and constructions to be hereinafter more fully pointed out and described.

In the drawings accompanying and forming part of this specification, Figure 1 is a partial plan view of one embodiment of my invention; Fig. 2 is a section on line *a*—*a* of Fig. 1; Fig. 3 is a detailed view partially in section of the jet controlling mechanism; Fig. 4 is a section on line *b*—*b* of Fig. 3; Fig. 5 is an enlargement of the lower part of Fig. 3; Figs. 6 and 7 are plan and side views respectively of the mechanism for controlling the radial movement of the beam supporting the jet mechanism.

The reference characters are used in the same sense in the drawings and the specification.

Numeral 1 represents a floating hull provided with any suitable means for generating power. The hull has a compartment 2 adapted to receive material mixed with water. A pump 3 is located on the hull having a suction end 4 below the water line of the hull and a delivery end 5 connected by the hose or flexible pipe 6 to the jet mechanism 7. The hull is also provided with a vertical mast 8 upon which is mounted a vertical sliding sleeve 9. The sleeve 9 has pivoted to it by means of the pin 31 a guide 30 adapted to receive a beam 10. The beam 10 is provided with a rack 11 secured to its upper surface adapted to be engaged by the pinion 12 mounted in the guide 30 by means of which the beam is moved longitudinally in said guide. The jet mechanism 7 is secured to the end of the beam and extends downward in a substantially vertical direction. It consists of the hollow casting 13 which is bolted to the end of the beam, having an end 14 adapted to be connected to the hose 6 and having the vertical pipe 15 secured to it. A cup 16 is revolubly mounted on the lower end of the pipe 15. It has a vertical hollow spindle 17 rigidly secured to it. The upper end of the spindle 17 has a hand wheel 18 secured to it by means of which the spindle and cup may be revolved. The cup 16 is provided with a nozzle 19 and the lower end of the pipe 15 is cut away except at the portion 20, so that the interior of the pipe is in open communication with said nozzle except when the nozzle is turned to a position where it is covered by the portion 20 of the pipe. It is thus seen that by turning the hand wheel 18, the direction of the nozzle 19 may be controlled at will or brought to a position where it is shut off. The upper end of the hollow spindle 17 is connected by a pipe 35, having a valve 34, to the interior of the casting 13, or in any other convenient way, to the supply pump 3. By means of this construction the valve 34 may be opened to cause a jet of water to issue from the lower end of the hollow spindle 17 to facilitate sinking the pipe 15 into the material to be removed. A plate 22 is bolted to the casting 13 and provided with a collar 23 to support the upper end of the shaft 17. The collar 24 is fixed to said shaft below the plate 22 and a nut 25 is located on the shaft above the collar 23 to hold the spindle in vertical adjustment. A tackle 26 is arranged to connect the upper end of the mast 8 with the slide 9 and a tackle 27 is arranged to connect the upper end of the mast with the end of the beam 10, for the purpose of raising and lowering the beam. A second pump 28 is located on the hull 1 having its suction end in communication with the com-

partment 2 and its delivery end connected to a flexible hose or pipe to convey the material to the point desired.

The operation of my invention is as follows: When the scow containing loose material has been brought as near as possible to the point where it is desired to deliver the material, the apparatus is brought along side of the scow and a trough or connection 29, of any appropriate construction as shown in Figs. 1 and 2, is arranged to lead the material from the deck of the scow to the compartment 2 in the hull. The jet is then brought over a convenient point on the scow by means of the tackles 26 and 27 and the pinion 12, the nozzle 19 is closed and the valve 34 is opened and the pump 3 is started, when the vertical jet issuing from the opening 21 will make it possible to readily lower the beam as desired until the jet mechanism sinks its way through the soft material and rests upon the deck of the boat. Then by means of manipulating the hand wheel 18, the material is washed from the deck through the spout 29 into the compartment 2. The pump 28 is then started and the material is withdrawn from the compartment 2 and delivered to the point desired, where a large amount of material can be conveniently unloaded at a single position. A stationary platform may be erected to take the place of the floating hull 1, to support the mast 8 and other parts of the apparatus.

Having thus described my invention, what I claim is:

1. In an apparatus for unloading boats of loose material, the combination with a movable support, of a pipe connected with said movable support having a nozzle secured thereto and means for supplying water under pressure to said pipe.

2. In an apparatus for removing loose material from a boat, the combination with a movable support of a pipe connected with said support, a nozzle in the end of said pipe adapted to direct a stream downward for the purpose of sinking said pipe into loose material and a second nozzle in said pipe adapted to direct a stream in a direction substantially parallel to the deck of said boat.

3. In an apparatus for removing loose material from a boat, the combination with a movable support of a pipe connected with said support, a nozzle in the end of said pipe adapted to direct a stream downward for the purpose of sinking said pipe into loose material and a second nozzle rotatably secured thereto adapted to direct a stream in a direction substantially parallel to the deck of said boat.

4. In an apparatus for removing loose material from a boat, the combination with a movable support of a pipe connected with said support, a nozzle in the end of said pipe adapted to direct a stream downward for the purpose of sinking said pipe into loose material and a second nozzle rotatably secured in said pipe adapted to direct a stream in a direction substantially parallel to the deck of said boat, and means for opening and closing said second nozzle.

5. In an apparatus for unloading scows, the combination with a vertical support of a horizontal boom secured to said support, a nozzle secured to the end of said boom, a flexible hose connected with said nozzle, and means for moving said boom.

6. In an apparatus for unloading scows, the combination with a vertical support of a horizontal boom secured to said support, a nozzle secured to the end of said boom, a flexible hose connected with said nozzle, and means for raising and lowering said boom.

7. In an apparatus for unloading scows, the combination with a vertical support of a horizontal boom secured to said support, a nozzle secured to the end of said boom, a flexible hose connected with said nozzle, and means for swinging said boom in a plane normal to the axis of said vertical support.

8. In an apparatus for unloading scows, the combination with a vertical support of a horizontal boom secured to said support, a nozzle secured to the end of said boom, a flexible hose connected with said nozzle, and means for moving said boom longitudinally of its axis.

9. In an apparatus for unloading and distributing loose material from a scow, the combination with a compartment not a part of the scow of means for washing loose material from a flat decked boat into said compartment and a rotary pump having its suction end connected with said compartment.

10. In an apparatus for unloading and distributing loose material from flat boats, the combination with a hull, of a compartment in said hull, means for washing loose material into said compartment from the deck of an adjacent flat boat, and a pump having its suction end connected with said compartment to take material therefrom.

11. In an apparatus for removing material from a deck, the combination with a vertical pipe, of a nozzle at the lower end of said pipe and means for rotating said nozzle.

12. In an apparatus for unloading loose material from a deck, the combination with a vertical pipe, of a shaft centrally located in said pipe having a rotatable nozzle secured to its lower end and a hand wheel at its upper end.

13. In an apparatus for unloading scows, the combination with a vertical pipe, of an opening adapted to direct a stream in a downward direction, and a nozzle whose axis is normal to the axis of said pipe rotatably secured at its lower end.

14. In an apparatus for unloading flat boats, the combination with a deck or platform of a nozzle movably supported from said deck or platform in such a way that it may be positioned at various places upon the deck of an adjacent boat, means for changing the direction of said nozzle, a pump upon said deck or platform and a flexible hose connected with said pump and said nozzle.

15. In an apparatus for unloading flat boats, the combination with a hull, of a nozzle a movable support upon said hull to which said nozzle is secured, whereby the nozzle may be positioned at various places upon the deck of an adjacent boat, means for changing the direction of said nozzle, a pump upon said hull, a flexible hose connection between said pump and said nozzle, a compartment in said hull and a second pump upon said hull having its suction end connected with said compartment.

16. In an apparatus for unloading flat boats, the combination with a vertical cylindrical support, of a bracket encircling said support, guide ways in said bracket, a horizontal beam in said guide ways, means for moving said beam in said guide ways and a nozzle secured to the end of said beam.

17. In an apparatus for unloading scows, the combination with a vertical support, of a bracket slidably mounted on said support, a guide pivoted to said bracket, a beam slidably mounted in said guide, a nozzle secured to said beam and means for supplying water to said nozzle.

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

JESSE W. RENO.

Witnesses:
MURRAY HILL,
ERNEST MILLER.