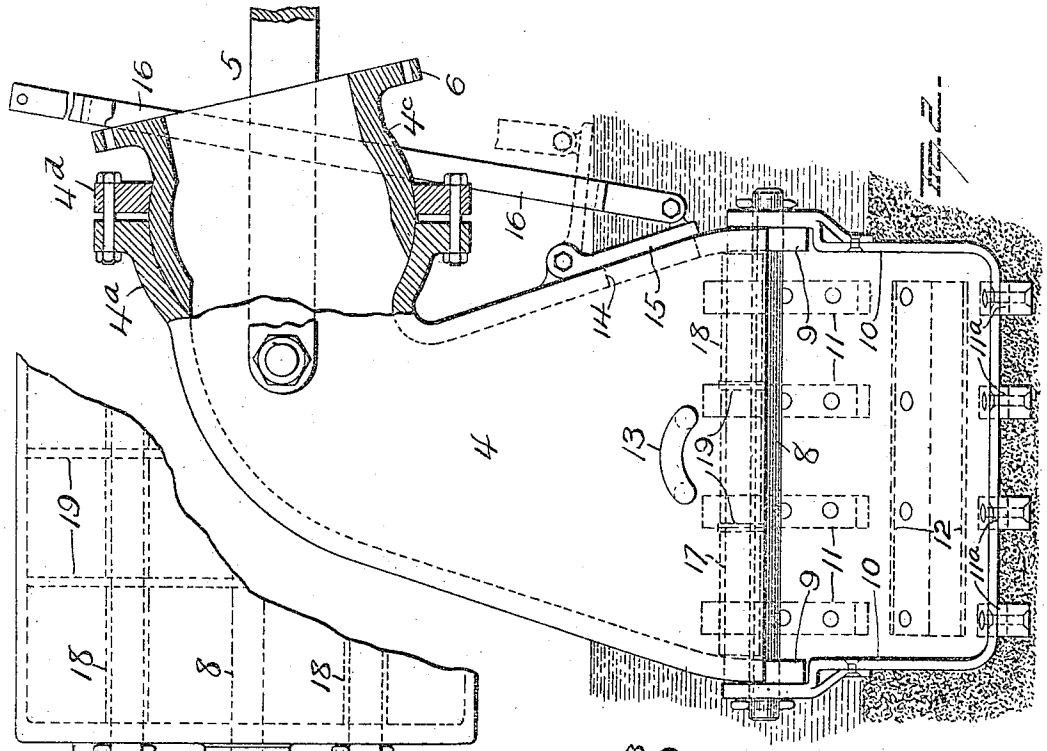
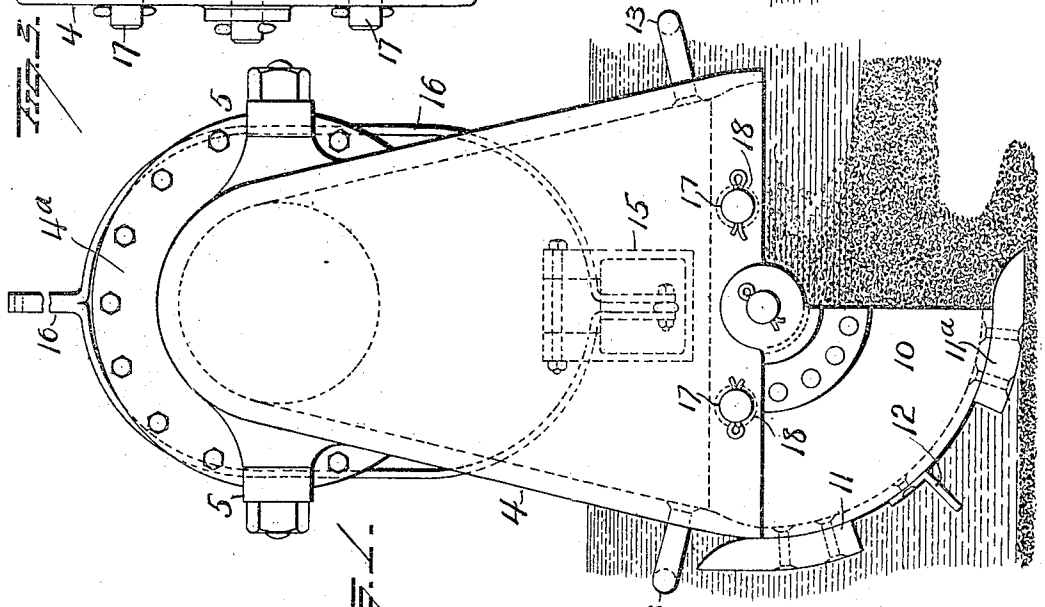
J. W. SINGLETON.

DREDGING MACHINE.

APPLICATION FILED DEC. 14, 1908.

927,690. Patented July 13, 1909.





WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES W. SINGLETON, OF COLUMBUS, GEORGIA.

DREDGING-MACHINE.

No. 927,690. Specification of Letters Patent. Patented July 13, 1909.

Application filed December 14, 1908. Serial No. 467,533.

To all whom it may concern:

Be it known that I, JAMES W. SINGLETON, of Columbus, in the county of Muscogee and State of Georgia, have invented certain new and useful Improvements in Dredging-Machines; 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.

This invention relates to improvements in dredging machines, and more particularly to a dredger head or bucket adaptable for use with a suction dredger,—one object of the invention being to so construct a dredger head or bucket that it can be operated in either direction, cross-ways, or at right angles to the longitudinal axis of the float on which the mechanism is supported, whereby a channel can be formed for said float in front of the same, and to provide means which will operate automatically to shift the scoop from one side to the other to the head or bucket when the movement of the latter is reversed.

A further object is to construct a dredger head in such manner that it will operate to loosen the material to be dredged so as to prepare such material to be withdrawn from the head by the operation of a suction pump.

A further object is to provide means which will prevent the entrance of large objects into the body of the head and also to provide means for the admission of water to prevent clogging of material within the head and to insure such material being of proper consistency to be withdrawn through a suitable conduit by the action of the suction pump.

A further object is to so mount and support the head or bucket that the latter may be kept on a level regardless of the depth of water in which it is operated.

With these objects in view the invention consists in a dredge head or bucket provided with an automatically shiftable scoop.

The invention further consists in a dredger head or bucket provided with an automatically shiftable scoop having teeth projecting from each of its ends.

The invention also consists in certain novel features of construction and combinations of parts as hereinafter set forth and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a dredger head or bucket embodying my improvements. Fig. 2 is a front elevation partly in section, and Fig. 3 is a partial plan view.

The hollow body 4 of the head or bucket has a general conical form, terminating at its smaller upper end in a neck 4^a provided interiorly with a curved seat 4^b for a partially spherical coupling 4^c, the latter being held in place by means of a ring 4^d bolted to a flange 7 at the free end of the neck 4^a. A ball and socket joint is thus formed between the head or bucket and the coupling 4^c and the latter is provided with a flange 6 for the attachment of a suitable pipe or conduit through which material can be withdrawn from the head or bucket by the use of a suction pump mounted on the float in the usual manner. The head or bucket 4 is supported by means of arms 5 and the latter will be connected in any suitable manner with the rigging on the float. A segmental scoop 10 is pivotally supported by means of a rod 8 from the lower larger end of the head or bucket, said pivotal connection being located in line with the vertical axis of said head or bucket. When in operative position, one end or the other of the scoop will rest against one-half of the lower end of the head 4 so that the other end of said scoop will be in position to receive material when the head or bucket is swung laterally by means of suitable chains connected with arms or loops 13 and operated by suitable mechanism on the float.

A series of teeth or fingers 11 is provided at each end of the scoop and these fingers project forwardly beyond the ends of the scoop and are secured to the bottom face thereof so that their rear ends will form shoulders 11^a. To the bottom of the scoop, at a point intermediate of the shoulders formed by the rear ends of the teeth or fingers, an angle iron 12 is secured. It is apparent that when the head is swung laterally, the teeth or fingers 11 will loosen and break up the earth so as to get it in proper condition to enter the head or bucket and be subsequently drawn from the latter by suction as before explained. It will be seen that when the device has been swung to its limit in one direction and then reversed, the engagement of the shoulders 11^a at the rear ends of the teeth or fingers and also of the angle iron 12 with the earth, will cause the scoop to roll and thus change its position from one side to the other of the head or bucket 4, when it will be in position to again

operate to receive material during the swinging of the head or bucket in the reverse direction. Thus it will be seen that the scoop is shifted automatically to operate in one direction or the other and that such shifting occurs immediately the direction of the head or bucket is reversed and without any necessity for raising the latter from the bed of the river.

For the purpose of admitting water into the head or bucket 4 to insure the proper consistency of the material to be withdrawn by suction, an opening 14 is provided in the wall of the head or bucket and normally closed by means of a valve 15. A suitable rod 16 is connected with said valve for controlling the opening and closing of the same. If desired a force pump may be attached at 14 for forcing water through the head or bucket. Rods 17 having thimbles 18 thereon extend across the lower open end of the head 4 parallel with the rod 8, and other rods 19 extend across said lower end of the head 4 at right angles to the rods 17 and coöperating with the rods 17 and thimbles 18 to form a grid or strainer which will prevent large and undesirable objects from entering the head 4.

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

1. A dredge head or bucket provided with an automatically shiftable scoop.

2. A dredge head or bucket provided with an automatically shiftable scoop having teeth or fingers projecting from each of its ends.

3. In a dredge head or bucket, the combination with a body portion, of a scoop pivoted centrally to the lower end thereof, and means for causing said scoop to shift when the head or bucket is moved laterally.

4. In a dredge head or bucket, the combination with a body portion, of a scoop pivoted centrally to the lower end thereof, said scoop made segmental in form and adapted to bear against the lower end of the body portion of one side or the other of the center thereof.

5. In a dredge head or bucket, the combination with a body portion, of a segmental scoop pivoted centrally to the lower end thereof.

6. In a dredge head or bucket, the combination with a body portion, of a segmental scoop pivotally connected with the lower end thereof in line with the vertical axis of said body portion, and teeth or fingers secured to said scoop and projecting beyond both ends thereof.

7. In a dredge head or bucket, the combination with a body portion, of a segmental scoop pivoted to the lower end thereof and projections on the curved bottom of said segmental scoop and adapted to operate to cause the scoop to be automatically shifted from one side to the other when the head or bucket begins its lateral throw.

8. In a dredge head or bucket, the combination with a body portion, of a segmental scoop pivotally attached to the lower end thereof, teeth or fingers secured to the bottom face of said scoop, the rear ends of said teeth or fingers constituting shoulders to engage the earth, and a projection on the bottom of the bucket between said shoulders and also adapted to engage the earth, whereby the scoop is caused to roll from one side to the other of the bottom of the body portion when the head or bucket begins its throw.

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

JAMES W. SINGLETON.

Witnesses:
J. S. JONES,
A. A. WILLIAMS.