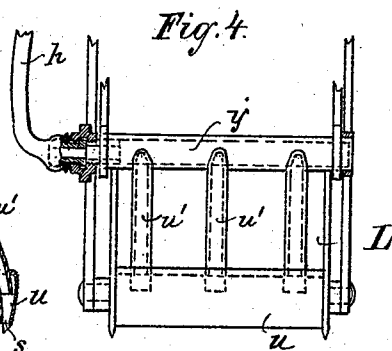
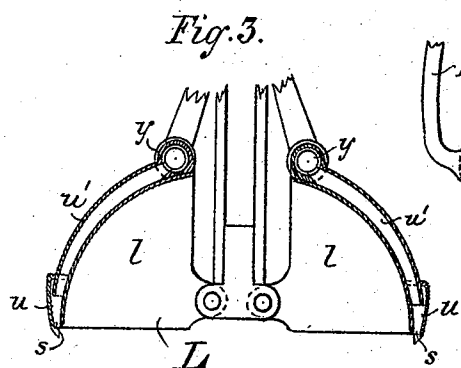
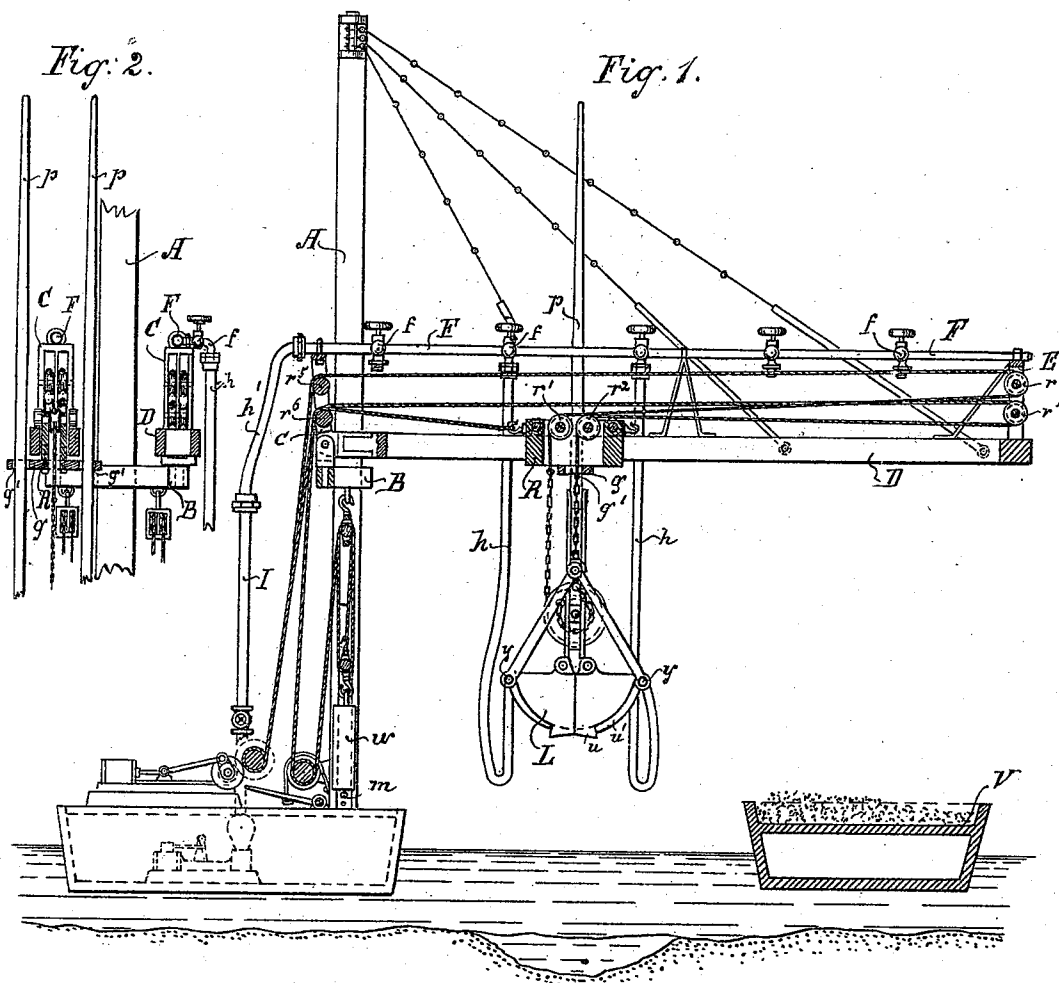


(No Model.)

J. E. WALSH.
DREDGING MACHINE.

No. 501,122.

Patented July 11, 1893.



Witnesses:

Julius Haagen
Philip Ryan.

Inventor:

John E. Walsh
per Charles Raettig
his Attorney

UNITED STATES PATENT OFFICE.

JOHN E. WALSH, OF NEW YORK, N. Y., ASSIGNOR TO MARY A. WALSH, OF
SAME PLACE.

DREDGING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 501,122, dated July 11, 1893.

Application filed February 3, 1893. Serial No. 460,864. (No model.)

To all whom it may concern:

Be it known that I, JOHN E. WALSH, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Dredging-Machines, of which the following is a specification.

My invention relates to improvements in dredging machines, and the object of my invention is to provide an apparatus by means of which hard sand and similar material can be raised with dispatch and facility, and which is also capable of being operated when rigged upon a scow, in a moderate seaway and unload upon a vessel anchored separately at a distance from the dredging apparatus.

In the accompanying drawings: Figure 1 represents a side elevation of my improved dredging machine showing a vessel anchored at a considerable distance therefrom. Fig. 2 is a detail section and end elevation of the central part of the crane and its attachments. Fig. 3 is a section through the dredging bucket. Fig. 4 is an end elevation of the dredging bucket.

Upon a mast A. is mounted an adjustable sleeve B. carrying preferably two slotted arms D., one at each side of the mast, which are capable of being swung up and sidewise, and carry each a trolley and means for operating the same, substantially alike to those described and secured by me in the Patent No. 488,044, issued December 13, 1892.

The trolley R. is preferably provided with two rollers r^1 and r^2 , over which the ropes or chains pass to the pulleys operating the dredging bucket. The bracket E. at the end of each arm is preferably provided with two sets of rollers r^3 and r^4 one above the other to prevent the pulling ropes from chaffing against each other when crossing, and which correspond with two sets of rollers r^5 and r^6 arranged in the stirrup-shaped forging or casting C. in front of each arm D. The frame of the trolley R. is extended below through the slot of the corresponding arm D. and slightly projects beyond its lower terminals and carries there the guide block g , provided with the openings g' one at each end in which the guide poles p of the dredging bucket are traveling upward and downward.

The dredging bucket L. may be selected of any ordinary pattern now in common use or preferably of the pattern illustrated in Figs. 3 and 4 of the drawings, in which each half shell l is provided above with a water pipe y , and below with a pocket u , both extending outside across the entire width of the bucket and being connected with each other by the channels u' . The pipe y is preferably closed at one end and provided with screw thread at the opposite open end to enable it to be connected by means of a hose h , having a coupling at either end with a horizontal water pipe F, one of which is secured upon each arm D. extending the entire length of it and provided with faucets f to enable hose-connections at various places. The pipe F. is also closed at the outer end and provided with screw thread for hose-connection at the inner open end. A flexible hose h' will connect each pipe F with an upright pipe I secured to a steam pump or water reservoir and thus allow water under pressure to be supplied to the bucket while dredging at various points along an arm D. A narrow slot s , reaching across the entire width of the bucket forms the outlet for the water supply and runs along the cutting edges of each half bucket at the lower edge of the pocket u . The weights w for returning the trolley should be selected heavy enough to be capable of returning the empty bucket automatically.

The operation of dredging by the aid of this apparatus is then as follows: The mast A., the brakes, windlasses, steam engines, boiler and pumps having been secured preferably upon a scow the same is anchored near the place to be dredged and the vessel V. to receive the dredged material is anchored away at a distance therefrom, yet near enough to receive the discharge of the dredging bucket or buckets while suspended from the ends of the arms D. The dredging buckets are then adjusted over the place to be dredged by moving the trolley R. with the bucket partially weighted along the arm D, and then by inserting the stop-pins or blocks m , which check the return motion of the weight w . The hose h , h' , are now secured to the nearest faucets allowing sufficient length of hose for the dropping and traveling motion of the bucket and trolley, and the work of dredging

can begin. If the dredging has to be done in hard sand, my apparatus will become especially useful for as soon as the bucket has struck the bottom, the water pressed through the slots *s, s*, will clear the way for the shells of the buckets and thus enable them to do quick and effective work, especially when both arms of the crane and two dredging buckets are employed. The distance at which the dredging machine and the receiving vessel can be held will fit this apparatus especially for outside-harbor-work, or for places at which a moderate sea is running and where vessels lying aside of each other would likely do injury to each other. If the bucket is very heavy the return of the trolley is preferably done by machinery, thereby dispensing with the weight for the automatic return of the trolley.

20 Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a dredging machine the combination of a dredging bucket with a trolley traveling upon a slotted arm secured upon a mast, said trolley having pulleys to carry the working chains or ropes and a guide-block for holding the guide-poles of the bucket, and means for

operating the bucket and the trolley as and for the purposes herein shown and described. 30

2. In a dredging machine the combination of a dredging bucket provided with water jackets and water outlet slots at its lower edges and suspended from a traveling trolley with a horizontal water pipe arranged upon an arm of a crane and provided with stop valves, an upright stationary pipe connected with a pressure pump or other source of water supply, flexible hose provided with couplings to connect the water pipes and water jackets and means for operating the bucket and the trolley as and for the purposes herein shown and set forth. 40

3. In a dredging machine the combination of the shell of the bucket *L*, with the pipes *y*, *y*, the channels *u'* and the water jackets *u, u*, having the slots *s, s*, as and for the purposes herein shown and described. 45

Signed at New York, in the county of New York and State of New York, this 1st day of February, A. D. 1893. 50

JOHN E. WALSH.

Witnesses:

ARTHUR M. WIENER,
J. MILLER.