

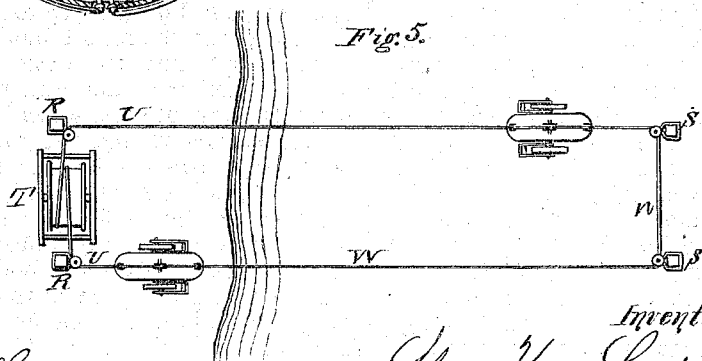
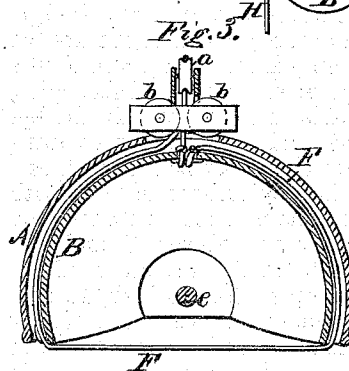
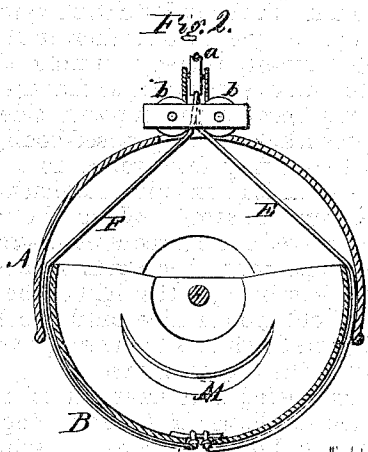
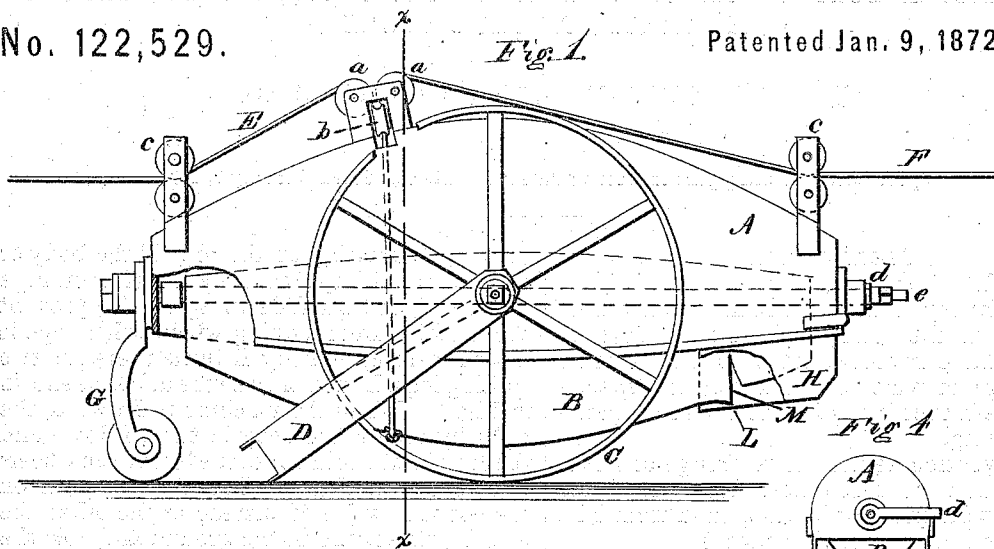
(51.)

WILLIAM H. LOTZ.

Improvement in Dredging Machines.

No. 122,529.

Patented Jan. 9, 1872.



Witnesses.

Harry King.
Phil. T. Dodge.

Inventor.

Wm. H. Lotz.
by Dodge & Mumford
Attys

UNITED STATES PATENT OFFICE.

WILLIAM H. LOTZ, OF CHICAGO, ILLINOIS, ASSIGNOR TO JOHN THORNE CLARKSON, OF SAME PLACE.

IMPROVEMENT IN DREDGING-MACHINES.

Specification forming part of Letters Patent No. 122,529, dated January 9, 1872.

SPECIFICATION.

To all whom it may concern:

Be it known that I, WILLIAM H. LOTZ, of Chicago, in the county of Cook and State of Illinois, have invented certain Improvements in Dredge, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to a dredge of novel construction, as hereinafter described, more especially adapted for hauling sand from lake and river beds and similar places.

Figure 1 is a side elevation of my dredge. Fig. 2 is a vertical cross-section of the dredge closed, as when being filled. Fig. 3 is a like view of the dredge open, as when discharging its contents. Fig. 4 is an end view of the dredge on a smaller scale, and Fig. 5 is a view illustrating the manner of operating the dredges.

A represents a hollow half-round body with tapering ends, which is mounted, with its open side downward, upon two wheels, C, and provided with a central longitudinal shaft, *e*. B is a second body or scoop similar to body A, suspended thereunder on the shaft *e*, so that it may be turned up within the body A, as shown in Fig. 3. When the body B hangs down in its normal position it forms a bottom or scoop under the body A, and the two together form a round hollow body to receive and hold the sand; but when the part B is turned on the shaft *e* it passes up into the body A, as shown in Fig. 3, out from under the sand, which is thereby discharged. The body or scoop B is provided with a slit or opening, L, and an outwardly-turned lip or knife, M, so that when the end of the body is depressed so as to bring said lip into the sand and then the machine moved forward the lip shovels up the sand, which passes through the opening into the body. On the sides of the body A, opposite the opening L, there are two blades or wings, H, which hold and retain the same so as to be taken up by the lip. The machine is provided with two ropes, E and F, at its opposite ends for hauling it into and out of the water, respectively. The ropes are passed over guide-pulleys *a b* on the body A and then through a hole into the interior of the same, where they are passed around opposite sides of the body or scoop B and secured to the back of the same,

so that by drawing on the rope E the body or scoop is turned up, while by drawing on rope F the body is turned down again. To prevent the machine from moving when either rope is drawn, before the body B turns there are two trailing legs, D, attached to the axles, as shown in Fig. 1. When the machine is drawn to the right by rope F the body is turned down and the legs trail behind or to the left of the wheels C, as shown in Fig. 1. But if the rope E on the left is now pulled instead of the other, the legs D will engage in the ground and hold the machine until the body B turns upward, when, as the rope can yield no further, it draws the machine forward, thereby turning the legs upon end and over forward, so that their lower ends swing back to the opposite side of the wheels, the machine being raised bodily by the legs as they swing forward, so as to deliver the scoop of its load and raise the machine over and free from the same. When the machine has been moved out the required distance into the water the rope F is again hauled upon, when, the legs being to the right of the wheels, they will hold the machine until the body or scoop B turns down and then swing over again and trail to the left, as at first.

The parts being thus arranged, the machine is operated as follows: After first being hauled upon shore full of sand by rope F said rope is slackened and the rope F hauled upon, which serves first to turn the bottom or scoop B up so as to dump the sand, and then to haul the machine back into the water again. Rope E is then slackened and the rope F hauled in, which first turns the body or scoop down, so that its lip will enter the sand, and then draws the machine ashore full of sand gathered in the passage. A roller or wheel, G, is mounted under the rear end of the body A to prevent the same from dropping down and catching on the ground or bottom when the machine is being hauled out into the water. The ropes E and F pass between pulleys *c*, mounted on the ends of the body A, and thus serve to maintain the body in the proper position. By making the pulleys *c* adjustable vertically the position or inclination of the body, when being hauled back and forth, may be varied as desired, and thus the lip M caused to cut to a greater or less depth. The method in which the ma-

chines are ordinarily operated is shown in Fig. 5. Two posts or piles, R, are driven down at any desired distance from the shore, but near each other, and then two posts, S, driven down on shore at about the same distance apart as the others. A drum, T, is placed between the posts R and provided with an engine or horsepower for driving it, and each of the four posts or piles is provided with a pulley or sheave. A rope, W, is then passed around the pulleys on posts S and its ends attached to the rear ends of two of the dredges, and a rope or chain, U, passed around the drum T, and its ends carried around the pulley on posts R and secured to the forward ends of the respective machines, as shown. On turning the drum in one direction one machine is drawn toward shore full of sand, while the empty machine is carried out into the water; but upon reversing the drum the first machine is emptied and carried outward and the other one hauled ashore, the two machines always moving in reverse directions.

Among the many advantages of my dredge over others are, first, that, being round, with rounded or pointed ends, it displaces the water easily and gently, and does not cause the sand to be washed away from in front of it as it advances; second, that, being round, it is stronger and more easily made than the angular machines heretofore in use; third, that, as its

lip or knife cuts a semicircular furrow, it will repeatedly cut to its full capacity in moving over the same course or furrow, while in a machine opening a square furrow the sand only fills into the corners of the furrow, so that after the first trip the shovel or knife gathers sand only at its two sides or ends, and not at the middle; fourth, that my machine dumps or discharges automatically; and fifth, that it fills easily, as all the water entering with the sand can escape between the two parts of the body.

Having thus described my invention, what I claim is—

1. A dredging-machine, consisting of a body, A, mounted on wheels or their equivalents, and a revolving body or scoop, B, suspended therein, when constructed and arranged to operate as described.

2. The combination of the wheeled body A, the trailing legs D, the revolving body or scoop B, and the ropes E and F, when arranged to operate as described.

3. In combination with the revolving scoop B, I claim the turned lip or knife M, when constructed and arranged to operate substantially as and for the purpose set forth.

WILLIAM H. LOTZ.

Witnesses:

THEO. KARLS,
JAKOB STIERLIN.

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