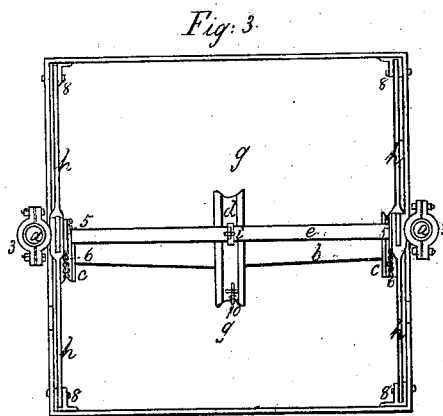
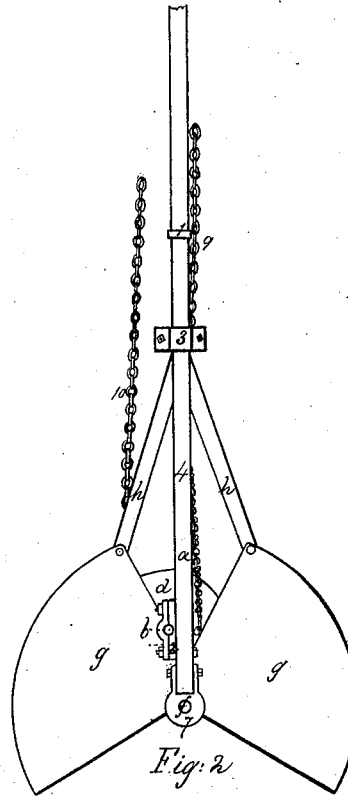
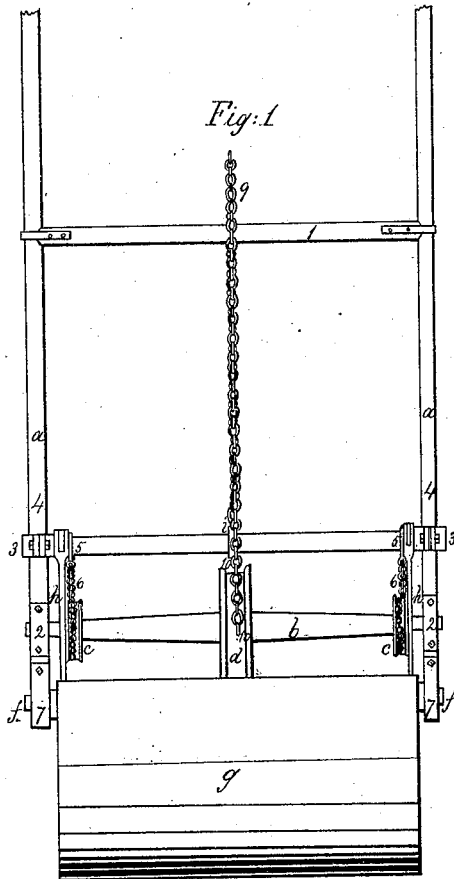


E. Morris.
Mud Scoop.

No 5,900.

Patented Dec 12. 1848.



Witnesses
W. Ferrell
Samuel W. Ferrell

Inventor
Ephraim Morris

UNITED STATES PATENT OFFICE.

EPHRAIM MORRIS, OF NEW YORK, N. Y.

SCOOP AND ELEVATOR.

Specification of Letters Patent No. 5,966, dated December 12, 1848.

To all whom it may concern:

Be it known that I, EPHRAIM MORRIS, of the city, county, and State of New York, mechanical engineer, have invented and made and applied to use certain new and useful improvements in the application, construction, and arrangement of mechanical means for raising mud or sand or loose earth or gravel from the bed of a river or out of a vessel or from any other situation and transferring and depositing the same to or at any other and near given point by a two-part scoop that is made to load and close itself and open to discharge the load by ropes or chains and pulleys that govern toggle-joint arms jointed to the upper parts of the scoop, the whole being attached to a movable boom derrick or shears that sustain the machine by the same ropes or chains that control the movements of the working parts, for which improvements I seek Letters Patent of the United States, and that the said improvements are set forth and shown in the following description and in the drawings annexed to and making part of this specification, wherein—

Figure 1 is a front elevation; Fig. 2, an end elevation, and Fig. 3 a plan, showing the construction of a machine for the above purposes as arranged and applied by me.

The like marks of reference apply to the same parts in each of the several figures.

a, a , are two sides of a ladder frame, and 1., is a tie stretcher, to connect the two sides a, a , these are shown dwarfed, or shortened, in the drawing, but the sides a, a , may be made of any required and convenient length, to suit the intended use, and may be connected by any competent number of ties 1, 1. A pair of journal boxes 2, 2, are affixed near the lower ends of the vertical frame pieces, to carry an intermittent and alternately rolling shaft b , fitted near each end, with a small feathered drum, or grooved pulley c , and in the middle a larger feathered or grooved drum or pulley d . Above these, the frame sides a, a , are inclosed at the parts 4, 4, by a pair of flanged slide clasps, or collars 3, 3, made each in two parts, that are secured together by screws, passing through the flanges, so that they may be conveniently removed, and repaired, or renewed, in case of accident, without disconnecting or detaching any other parts; these collar slides 3, 3, are fitted to receive the ends of a moving shaft, or cross bar

e , fitted near the ends with eyes 5, 5, beneath, that take the upper ends of ropes or chains 6, 6, the lower ends of which are secured to the grooves, in the small pulleys or drums c, c . The lower ends of the frame pieces a, a , are fitted with sling journals 7, that carry a shaft f , which may either be made in one continuous length, across the machine, or in a short length, at each end, but in either way of fitting this shaft, it is to carry, by a semi-rule joint, the corners of two quadrant scoops g, g , that have near each outer angle, either inside or outside the scoop, a lug 8, 8, to connect the scoop, by knuckle joints, to the outer ends of four toggle joint arms h, h , the inner ends of which are connected, by rule or knuckle joints, to the ends of the shaft e , between the eyes 5, 5, and slide collars 3, 3. An eye i , on the upper side of the shaft e , receives the lower end of the lowering and discharging chain or rope 9, and the larger drum or pulley d , has attached, the lower end of the loading and hoisting chain or rope 10. When thus constructed, and adjusted, the machine is to be used as follows.

The upper ends of the side pieces a, a , are to be led through staples, or cleats, on one side of a boom or derrick arm, to guide the vertical movements of the apparatus, and then the farther, or opposite ends, of each rope or chain 9 and 10, are to be led through blocks, on the derrick or boom, and attached, each, to a separate barrel, worked by any competent power, but for these purposes, I prefer the hoisting and lowering machine, patented by me, the fifth day of July 1845.

By hoisting on the rope or chain 9, the parts of the machine will assume the positions, shown in Fig. 2, as the sliding upward, of the shaft e , will unwind the ropes 6, 6, from the drums c, c , and wind the rope 9, on the drum d , and also bring the toggle joint arms nearer together, and separate the lower portions of the scoops g, g , and cause them to form a wide open mouth. When in this situation, the rope 9, is to be lowered by the barrel controlling it, and the derrick or boom, and the apparatus, is guided so as to place the scoops upon, and into, the mud, sand, or earthy material it is intended they shall remove. When so placed, the chain or rope 9, is to be easily slacked out, as the rope or chain 10, is hoisted on, and this, winding off the drum d , turns that, and the drums c, c , so as to take on the ropes or chains 6, 6,

and forcing the toggle joint arms *h*, to expand, the scoops close, and the parts assume the position, shown in Fig. 1, with the mouth of the scoops shut and a load of mud or earth within them. Continuing to hoist on the chain 10, the scoops and load come up, and are to be swayed by the derrick, or boom, to the place of discharge, when, by hoisting on the rope 9, and slackening the rope 10, the former movements are reversed, and the parts again assume the positions, shown in Fig. 2, and the earthy material is discharged, at the mouth formed by the separation of the scoops, and the scoops are in a position for moving to take another load.

The foregoing description shows the mode, and effect, of using this machine, to raise and discharge mud, and earthy matter, but it will be evident, that the same mechanical means will load, raise, and transfer, any kind of loose grain, and corn, or seed, from a ship, or barge, or other position, to another place or position, and therefore I do not intend to limit the use of this apparatus, to raising earthy matters, but to use the same, for any purpose to which it can be usefully applied.

It is well known, that all the parts herein described have been long in use, for various purposes, therefore it is not intended to claim any of them, except in connection, in the manner, and for the purposes, for which they are herein shown to be used by me. But I do not know of any other, or similar

apparatus, in which a twofold scoop is made to close and load itself, with any given article, and open to discharge itself, by the operation of toggle joint arms, whose movements are controlled by the ropes or chains that also serve to lower the machine to load, and hoist and discharge the load, when taken up.

I therefore claim as new, and of my own invention, and desire to secure by Letters Patent of the United States,

The application of the two part scoop *g, g*, at the lower end of the frame *a, a*, conjointly with the arrangement described and shown, by which the toggle joint arms *h, h, h, h*, close the scoops to load, when acted on by the rope or chain 10, which afterward raises the scoops and load and through which arrangement the same parts open the scoop, to discharge the load, when acted on by the rope or chain 9, both the chains or ropes 9, and 10, operating on the toggle joint arms, through the shafts *b*, and *e*, and drums *c, c*, and *d*, substantially in the manner hereinbefore described and shown.

In witness whereof, I have hereunto set my hand, in the city of New York, this fourteenth of September, one thousand eight hundred and forty-seven.

EPHRAIM MORRIS.

Witnesses:

W. SERRELL,
LEMUEL W. SERRELL.