John Ebbert.
Dredging Machine.

116282

PATENTED JUN 27 1871

Fig 1

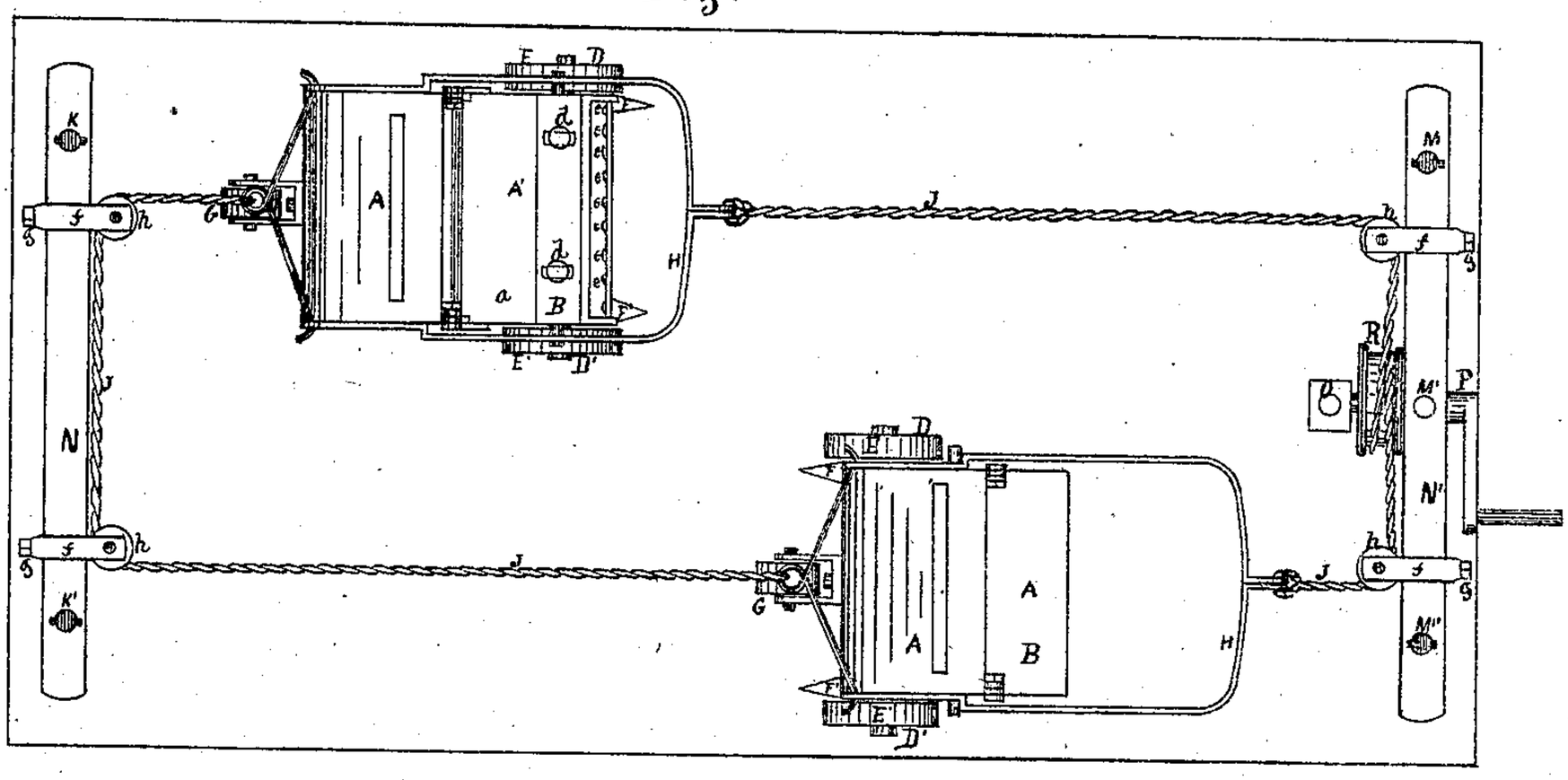


Fig 2.

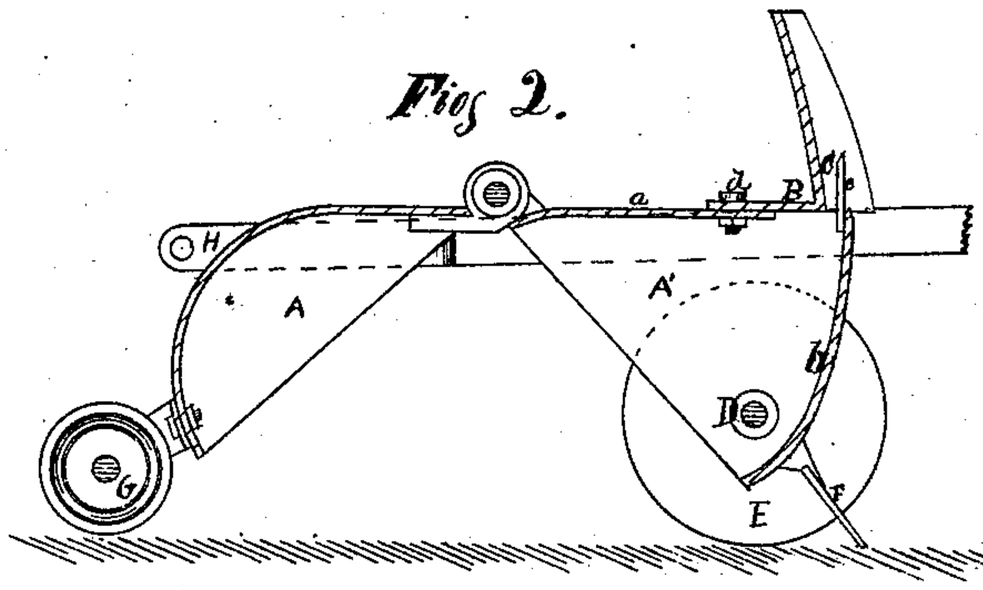
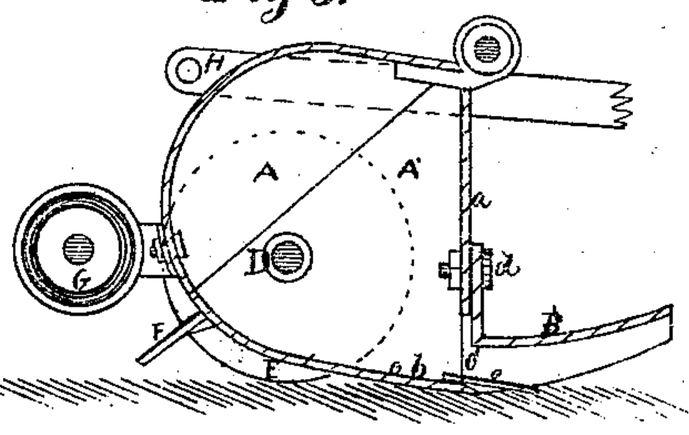


Fig 3.



Witnesses.
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UNITED STATES PATENT OFFICE.

JOHN EBBERT, OF CHICAGO, ASSIGNOR TO HIMSELF AND JOHN CLARK, OF MARENGO, ILLINOIS.

IMPROVEMENT IN DREDGING-MACHINES.

Specification forming part of Letters Patent No. 116,282, dated June 27, 1871.

To all whom it may concern:

Be it known that I, JOHN EBBERT, of the city of Chicago, in the county of Cook and State of Illinois, have invented a new and useful improvement in Dredging-Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which—

Figure 1 is a top view of the carrying-buckets, showing their position and manner of attachment when in use. Fig. 2 is an enlarged vertical longitudinal central section of the carrying-buckets when opened preparatory to discharging the contents therefrom; and Fig. 3 is an enlarged vertical longitudinal central section of the same when closed preparatory to filling.

Similar letters of reference indicate corresponding parts in the several figures of the drawing.

My invention has for its object to provide an apparatus for removing earth or sand from the bed of a lake, river, or other similar channel, and also for grading highways; and to this end it consists in the carrying-buckets, which are made in two parts and hinged together in such a manner as to be opened or closed as the action of the rope or chain by which the same are drawn is reversed; also, in providing the front wall of said bucket with an adjustable fender-plate, the object, construction, and arrangement of which are hereinafter fully described.

In the drawing, A and A′ represent the two parts of the bucket, which are hinged together, as shown in Figs. 2 and 3, and are shaped in a manner which describes at their rear end an annular form when closed. The upper portion *a* of the part A′, as shown in Fig. 2, forms the front wall of the bucket when closed, as shown in Fig. 3, and is provided on its front edge with an adjustable L-shaped fender-plate, B, which is secured thereto by screw-threaded bolts *d d*, which pass through longitudinal mortises cut through the plate. The outer extremities (laterally) of said plate are bent at right angles to its plane, and are slightly curved, forming runners, upon which the forward end of the bucket is supported; they also serving as guides through which the earth or sand is forced by the forward movement of the same. The front edge of the lower plate *b* of part A′ is made sharp, forming a cutting-edge, to the upper surface of which is firmly affixed a series of guard-fingers, *e*, and is so arranged as to provide an opening, C, between its upper side and the lower surface of the fender-plate, through which the earth or sand is forced into the bucket. Firmly affixed to the sides of said part A′ are axles D D′, upon which are mounted auxiliary wheels E E′, the diameter of which is such as to support the rear end of the bucket. Affixed to said axles, or to the sides of the bucket near said axles, are the shear-pointed levers F F′, which extend outward beyond the periphery of the wheels, and are so arranged as to engage the earth as the movement of the bucket is reversed, thus securing the lower portion of the part A′ in a fixed position until the part A is moved upon its hinges to or from the same, which part A′ is then tilted past its center by the forward or backward movement, by which means the bucket is closed or opened and the points disengaged from the earth, and the weight of the bucket is then supported upon the wheels. Attached to the lower portion of part A is a caster-wheel, G, which is so arranged as to support the said part when open. Firmly secured to the upper and opposite sides of the said part A is a stirrup-formed bale, H, to which the rope or chain J is attached. K K′ are piles, which are driven into the bed of the lake or river at the proper point from the shore to form the graduated distance the buckets are to be moved. M M′ M″ are also piles, which are driven into the ground at the required delivering point upon the shore. Secured to the upper ends of said piles are beams N N′, upon which are loosely fitted stirrups *f f f f*, so arranged as to be moved laterally to or from the center of the beam, and firmly secured at any adjusted point by set-screws *g g g g*, affixed in the outer end of the same, which engage the beam. Loosely affixed within the inner ends of said stirrups are sheave-wheels *h h h h*, around which the rope or chain J of the buckets is passed. Secured to the piles M′ and O is the main driving-shaft P, to which power may be applied by any suitable known means which will impart the required rotary motion. Mounted upon this shaft is a drum-wheel, R, around which the rope or chain J is wound; thus, as said shaft P is rotated the rope or chain upon one side of the drum is wound around the same as it is unwound from the other,

by which means the one bucket is drawn to the shore as the other recedes therefrom. The bucket moving toward the shore, being filled by its forward movement, is drawn to the desired point of delivery; the motion of shaft P is then reversed, thus reversing the movement of the bucket, which brings levers F F′ in contact with the ground, holding part A′ in a fixed position until the part A is moved back upon its hinges, which opens the bucket, and its contents are discharged; the bucket then receding in an open condition. The levers F F′ of the opposite bucket are then brought in contact with the earth by its reverse movement, closing it, and it is also filled and discharged in like manner.

It will be observed that the arrangement of the stirrups, within which the sheave-wheels carrying the rope or chain are secured, is such as to admit of their being moved laterally to or from the center of the beam, the object of which is to change the path of the buckets, when desired. It will also be noticed that by means of the auxiliary wheels the buckets can be drawn over an inclined surface, thus enabling the machine to be operated upon rough and uneven ground.

In using my invention in deep water the beam N may be disconnected from the top of the piles and arranged against the side of the same, opposite from the shore, in any suitable manner which will admit of being raised or lowered, thus enabling the buckets to come in contact with the bed of the stream.

In using my machine for grading highways or for railways I arrange the several parts to which the rope or chain is connected in such a manner as to allow the buckets to cross the line of the road, by which means the earth may be moved to any desired point.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The hinged parts A and A′ of the carrying-bucket, substantially as and for the purpose described.

2. The adjustable fender-plate B, in combination with the part A′, arranged as described, whereby the opening C is formed, substantially as and for the purpose described.

3. In combination with the parts A and A′, the shear-pointed levers F and F′ and auxiliary wheels E and E′, the whole arranged to operate substantially as and for the purpose described.

The above specification of my invention signed by me this 4th day of January, 1871.

JOHN EBBERT.

Witnesses:

N. C. GRIDLEY,

N. H. SHERBURNE.