No. 669,446. Patented Mar. 5, 1901.

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DREDGING BUCKET.

(Application filed Mar. 6, 1899. Renewed Feb. 5, 1901.)

(No Model.)

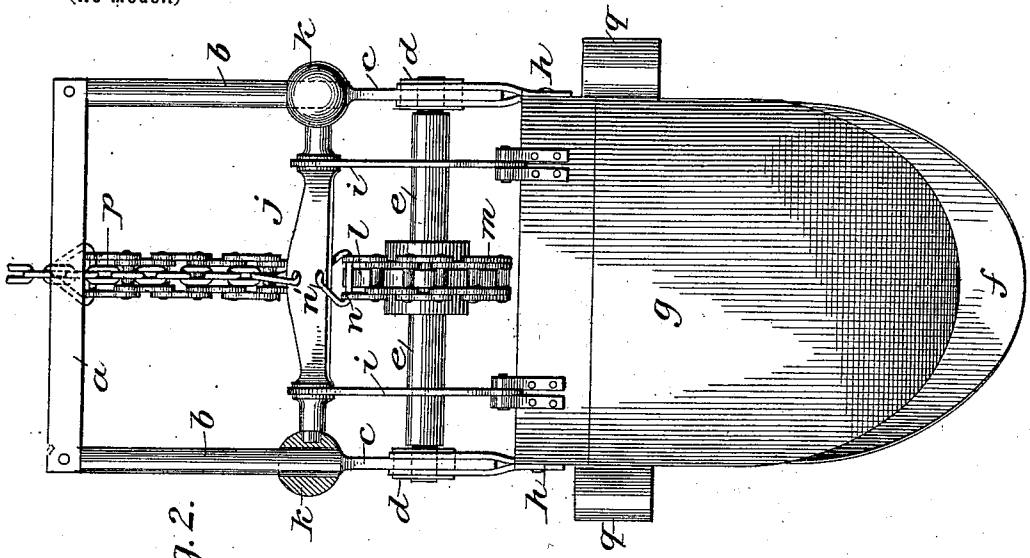


Fig. 2.

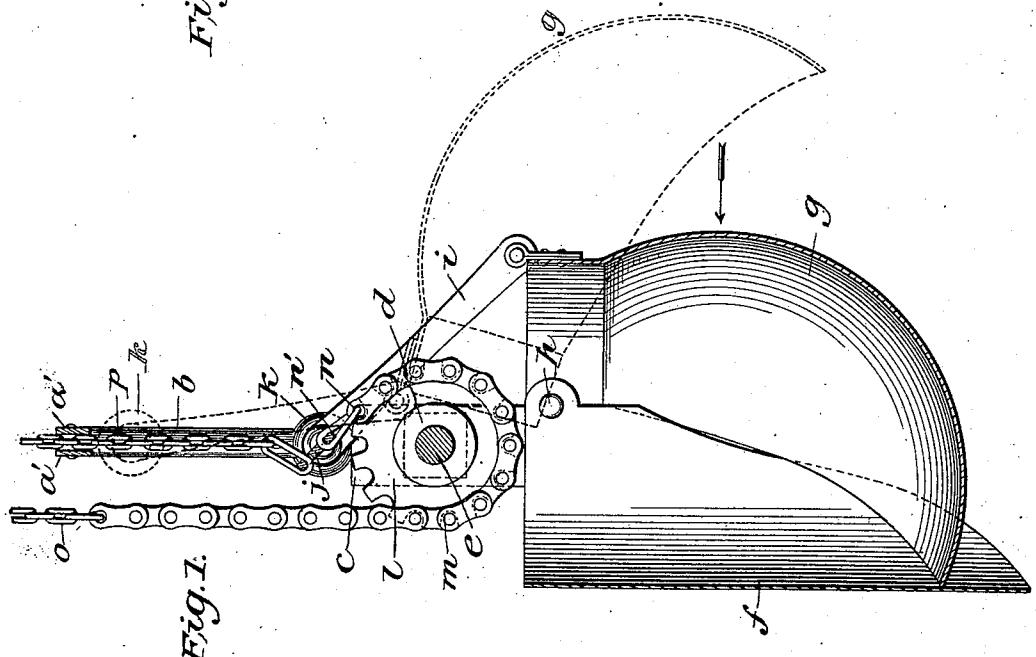


Fig. 1.

Witnesses.

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UNITED STATES PATENT OFFICE.

OCENA B. MORRIS, OF CAMDEN, NEW JERSEY, ADMINISTRATRIX OF JOSEPH F. MORRIS, DECEASED.

DREDGING-BUCKET.

SPECIFICATION forming part of Letters Patent No. 669,446, dated March 5, 1901.

Application filed March 6, 1899. Renewed February 5, 1901. Serial No. 46,151. (No model.)

To all whom it may concern:

Be it known that JOSEPH F. MORRIS, deceased, late a resident of Camden, in the county of Camden and State of New Jersey, did invent a new and useful Improvement in Dredging-Buckets, of which the following is a full, clear, and exact specification.

This invention relates to that class of dredging-buckets which are commonly known as "clam-shell" buckets; and the object of the invention is to provide such a bucket which is simple in construction and which is also simple and effective in operation.

The invention consists of a dredging-bucket of the clam-shell type comprising two members or jaws, one a rigid or stationary jaw and the other a pivoted or swinging jaw, and means for opening and closing said pivoted or swinging jaw, substantially as hereinafter more particularly set forth and finally claimed.

In the accompanying drawings, illustrating the invention, in the two figures of which like parts are similarly designated, Figure 1 is a side view, partly in elevation and partly in section; and Fig. 2 is an elevation looking in the direction of the arrow, Fig. 1.

As shown in the drawings, the invention comprises a framework consisting of a cross-bar *a*, constructed of two parallel and separated members *a' a'*, (see Fig. 1,) and two uprights or arms *b b*, the lower ends *c* of which are enlarged and provided with boxes or bearings *d* to receive the journals of a shaft *e*, to be hereinafter referred to.

To the lower enlarged ends of the arms *b b* is rigidly secured in any suitable manner the stationary member of jaw *f* of the bucket, which, as herein shown, is constructed somewhat after the form and having the function of an ordinary shovel or spade and having a substantially semicircular upper end—that is to say, said member *f* is adapted to be forced into the earth or other substance to be removed thereby—as will be hereinafter more fully explained.

g is the swinging scoop-like member or jaw of the bucket, also having a substantially semicircular upper end pivoted at *h* to the rigid or stationary member *f*, or, in other words, said jaws are pivoted at their meeting upper ends. The said scoop-like jaw *g* is so constructed and arranged as to make a close joint with the edges of the stationary jaw *f* when in the closed position, as clearly shown in Fig. 1.

To the upper outer edge of the swinging jaw or member *g* of the bucket are pivoted in any suitable manner the links *i i*, and at their other ends said links *i i* are loosely connected to a cross bar or beam *j*, said cross bar or beam being provided at its ends with blocks or collars *k k*, arranged and adapted to slide upon the uprights or arms *b b* of the framework in the operation of the bucket.

Rigidly secured upon the shaft *e* is a sprocket or chain wheel *l*, and engaging said sprocket or chain wheel is a chain *m*, one end of which, as at *n*, is connected by a link *n'* to the cross bar or beam *j*, and the other end of said chain being connected by a chain or other connection *o* to a suitable power mechanism. (Not shown.) The cross bar or beam *j* is also connected by a chain *p* or other suitable connection to a suitable power mechanism, and said chain *p* is preferably passed between and guided by the members *a'* of the cross-bar *a* of the framework. (See Fig. 1.)

To the opposite sides of the stationary or shovel member of the bucket are secured sockets or ears *q q* to receive the ends of the mast or driving arm of the dredging apparatus.

In the operation of the device the power mechanism is put into operation to exert pull upon the chain *p*, thereby drawing up the cross bar or beam *j* and through the links *i* raising the swinging or scoop member *g* of the bucket clear of the stationary or shovel member, as clearly indicated by the dotted lines, Fig. 1. The stationary or shovel member is then driven into the earth or other substance to the proper depth, and the power mechanism of the chain *p* is released and the power mechanism of the chain *o* put into operation to exert pull upon said chain *o*, thereby drawing the cross bar or beam *j* back to its normal position and through the links *i* forcibly closing the swinging or scoop jaw of the bucket, thereby confining a load of material within the jaws of the bucket. Power is retained upon the chain *o* to hold the swinging jaw

tightly closed until the bucket is hoisted and ready to be dumped, when the power mechanism of chain *o* is released and the contents of the bucket discharged of its own weight, or it may be so arranged that the power mechanism of the chain *p* may be put into operation to discharge the contents of the bucket.

It is not intended to limit the invention to the specific details of construction shown, as they may be varied without departing from the spirit of the invention.

Having thus described the invention, what is desired to be secured by Letters Patent is—

1. A dredging-bucket, comprising a stationary, rigid, shovel-like jaw or member, having a substantially semicircular upper end, and a movable jaw also having a substantially semicircular upper end, the said jaws being pivotally connected at their meeting upper ends, substantially as described.

2. A dredging-bucket, comprising a stationary, rigid, shovel-like jaw or member, having a substantially semicircular upper end, a movable jaw also having a substantially semicircular upper end, said jaws being pivotally connected at their meeting upper ends, and means for operating said movable jaw to open and close the bucket, substantially as described.

3. In a dredging apparatus, the combination of a framework, a bucket suspended from said framework and comprising a stationary, rigid, shovel-like jaw or member having a substantially semicircular upper end, and a movable jaw also having a substantially semicircular upper end, the said jaws being pivotally connected at their meeting upper ends, and means carried by said framework for operating said movable jaw to open and close the bucket, substantially as described.

4. In a dredging apparatus, the combination of a framework, comprising a cross-bar and uprights, a bucket having a stationary, shovel-like jaw rigidly secured to said uprights, and a movable jaw pivoted to said rigid jaw, a cross bar or beam adapted to slide upon said uprights, and link connections between said beam and movable jaw, whereby said movable jaw is opened and closed by the movement of the beam, substantially as described.

5. In a dredging apparatus, the combination of a framework, comprising a cross-bar and uprights, a bucket having a stationary, shovel-like jaw rigidly secured to said uprights, and a movable jaw pivoted to said rigid jaw, a cross bar or beam adapted to slide upon said uprights, link connections between said movable jaw and beam, whereby said movable jaw is opened and closed by the movement of the beam, a shaft journaled in said uprights, a sprocket or chain wheel carried by said shaft, a chain engaging said sprocket or chain wheel and having one of its ends connected to said sliding beam and its other end connected to a suitable power mechanism, and a power connection for said sliding beam, substantially as and for the purpose described.

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