J. B. WOOD.

Dredging Buckets.

No. 150,647. Patented May 5, 1874.

Fig: 1.

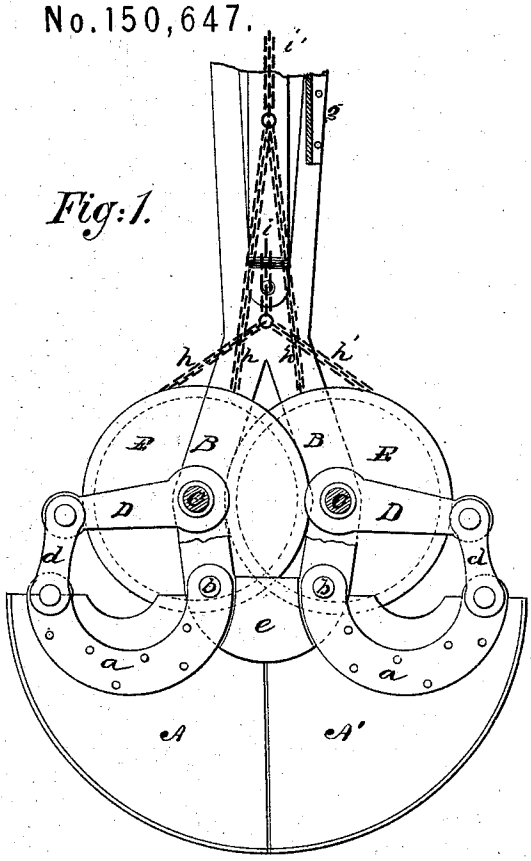


Fig: 2.

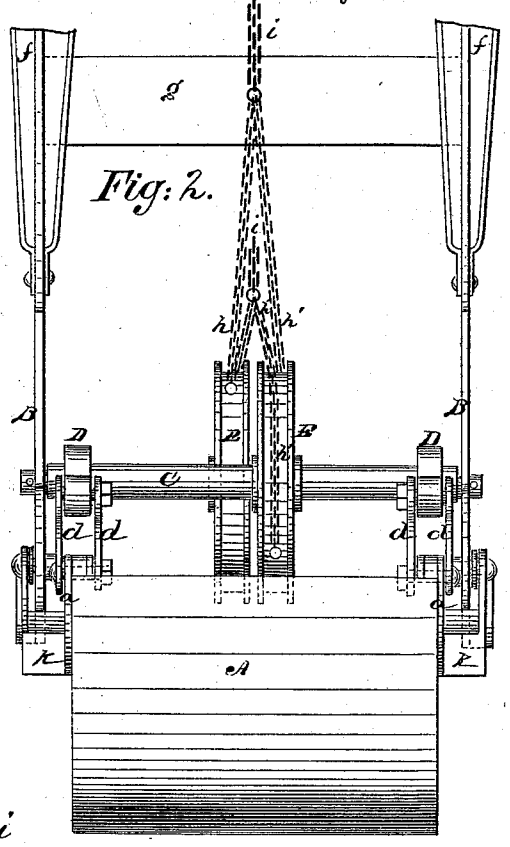
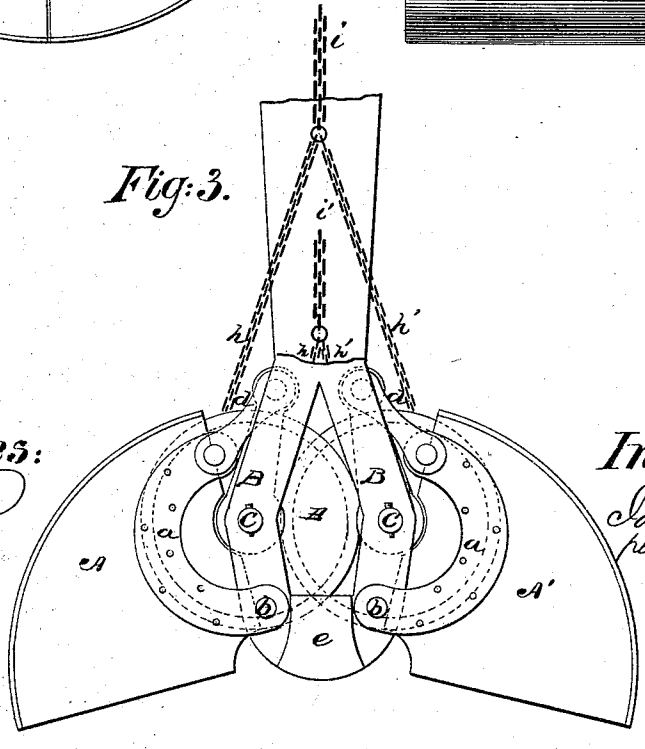


Fig: 3.



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JOHN B. WOOD, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN DREDGING-BUCKETS.

Specification forming part of Letters Patent No. **150,647**, dated May 5, 1874; application filed March 31, 1874.

To all whom it may concern:

Be it known that I, JOHN B. WOOD, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Dredging-Bucket; and that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

This invention is in the nature of an improvement in dredging-buckets; and the invention consists in a dredging-bucket of the kind known as a "clam-shell" bucket—that is, a bucket formed of two quadrants of a cylinder.

The novel features of this invention are the hinging, and the manner of opening and closing, the quadrants by means of crank-arms secured to two transverse shafts, the shafts being operated by pulley-wheels and chains, as is hereinafter fully described and shown.

In the accompanying sheet of drawings, Figure 1 is a side elevation of my invention; Fig. 2, an end elevation of same, and Fig. 3 view of open bucket.

Similar letters of reference indicate like parts in the several figures.

A and A′ represent the quadrants of my bucket. These quadrants may be constructed of any desirable material, and they may be of any desired size. Securely bolted on each side of the upper part of each quadrant are straps or plates *a*, the ends of these plates projecting above the edges of the quadrants. Through the inner ends of these plates pass bolts *b*, the bolts also passing through the lower part of the frame-work B, so that each of the quadrants is secured to said frame-work by hinge-joints, which will permit the quadrants to readily open outward, and to come together, the bolts *b* acting as pivotal points. Passing from one side of the frame B to the other side, immediately above and nearly in line with the pivotal bolts *b*, are two shafts, C, the ends of these shafts resting in suitable bearings formed in the frame-work B, so that the shafts may freely turn therein. Firmly secured to the shafts C, near their ends, and just inside of the frame-work B, are crank-arms D. From the outer ends of each of these crank-arms extend links *d*, the upper ends of the links being bolted to the crank-arms, and the lower ends to the projecting outer ends of the plates *a*. To the shafts C, near their centers, are secured two pulley-wheels, E. To the lower part of the frame B, and on each side of the same, are secured stop-blocks *e*. Into the upper part of the frame-work B are secured, by straps, in the ordinary manner, the guide-poles *f*, the frame-work being secured by a brace, *g*. Secured to each of the pulley-wheels E are chains *h* and *h′*, in such manner that while the ends of the chains are fastened—one to one wheel, and one to the other—they are joined to chains *i* and *i′*, which extend to the derrick and hoisting mechanism on the dredge-boat.

Having now described the construction of my bucket, its operation is as follows: The bucket having been suspended from the end of the derrick or boom, the chain *i* is wound in, and as it is drawn upward it causes the pulley-wheels E, by the action of the chain *h*, to revolve, forcing the shafts C to turn, and as they turn the crank-arms D are raised to a vertical position. As they assume that position the quadrants A and A′ are brought, by reason of the links *d*, to the inverted or open position, as shown in Fig. 3. The bucket being in this way opened, it is lowered to the mud, &c., to be excavated. The chain *i* is then slackened, and the chain *i′* is wound in; and as it is wound in it causes the pulley-wheels E to revolve, by the action of the chain *h′*, in a reverse direction, revolving the shafts C in like manner, and forcing the crank-arms D from a vertical to a horizontal position, which bring the quadrants A and A′, by means of the links *d*, to the closed position, as shown in Fig. 1, in which position they are held, retaining the mud, &c., they may have scooped up, as the chain *i′* is wound in. When the bucket has reached the place of deposit, the chain *i′* is slackened, and the chain *i* is wound in, causing the quadrants to open, as before described, and thus discharge their load.

To prevent the possibility of the inner edges of the quadrants from interlocking or passing each other as they are brought together in their closed position, the inner halves of each of the straps or plates *a* stand out slightly from the sides of the quadrants, bolsters *k* being

secured between the sides of the quadrants and the inner halves of the straps or plates *a*, so that as the quadrants come together to form the closed bucket the projecting halves of said straps or plates *a* will abut directly against the stop-blocks *c*, and prevent their edges from lapping. To prevent the quadrants from being thrown too far open, they are so constructed as to permit their upper edges to come in contact with the base of the crank-arms D or the shafts C. Instead of the pulley-wheels E, levers may be secured at right angles to the shafts C, having grooved arcs at their outer ends to receive the chains.

From the foregoing description of the construction and operation of my dredging-bucket, it is apparent that it is not only exceedingly strong and simple in construction, but it possesses the additional advantages of occupying less room, by reason of its compactness, than is required for dredging-buckets as usually constructed, and of obviating the necessity of using fine chains, and other fine and closely-fitting parts, which the friction, water, and grit rapidly cut out and render inoperative, compelling frequent and expensive repairs. Besides, a bucket constructed as hereinbefore described can be made to open and shut with great promptness.

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

1. In a dredging-bucket, stop-blocks secured to the lower part of the sustaining frame-work, against which abut corresponding stops when the quadrants of the bucket are closed.

2. In a dredging-bucket, a combination of two quadrants with two shafts having crank-arms and pulleys thereon, in connection with links, substantially in the manner and for the purpose described.

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