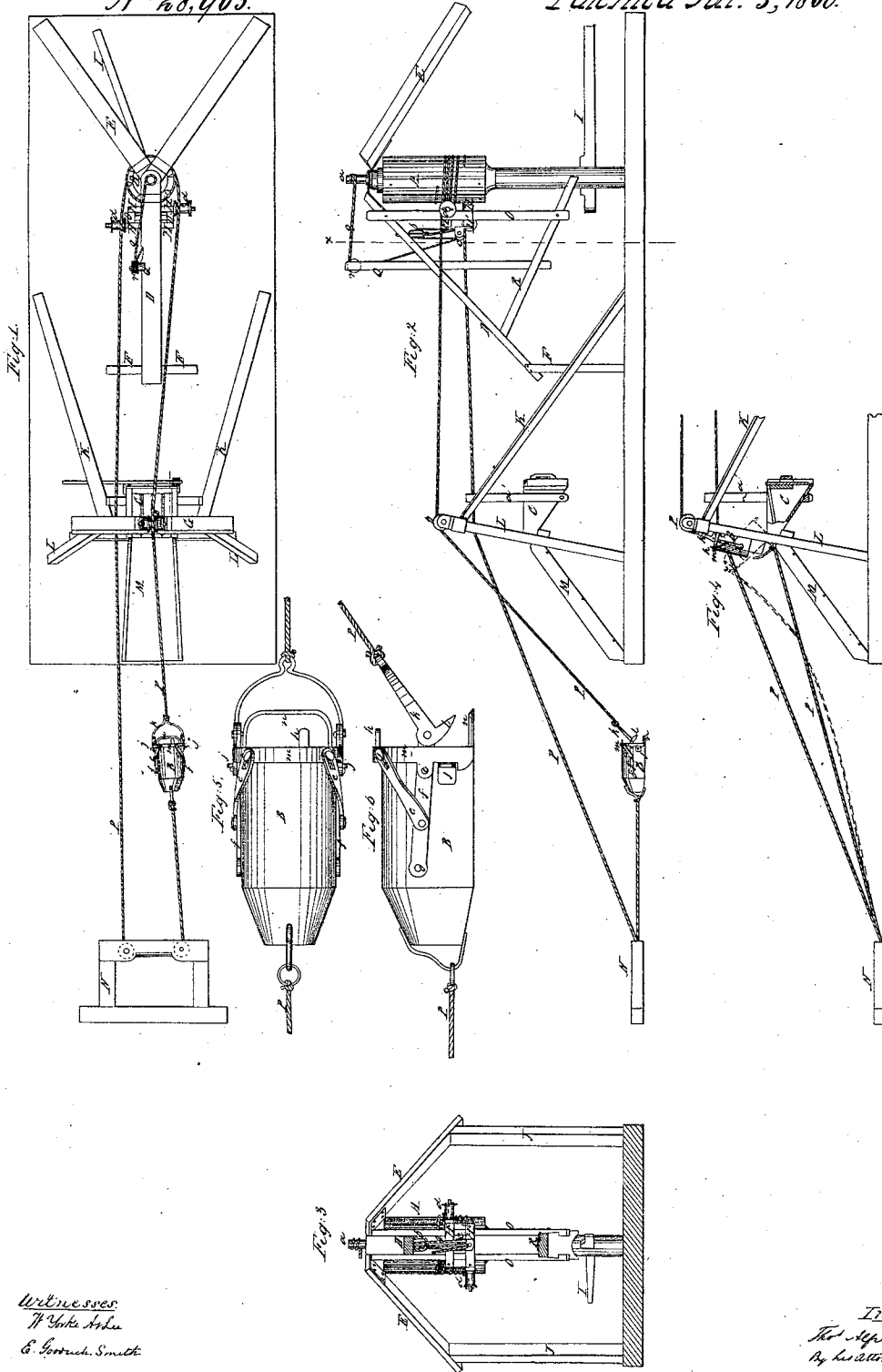


T. A. Bryan.
Dredging Machine.

N^o 28,963.

Patented Jul. 3, 1860.



Witnesses
Wm. H. Allen
E. Goodrich Smith

Inventor
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By his attorney J. K. Riddle

UNITED STATES PATENT OFFICE.

THOS. ALFRED BRYAN, OF QUEENSTOWN, MARYLAND.

DREDGING APPARATUS.

Specification of Letters Patent No. 28,963, dated July 3, 1860.

To all whom it may concern:

Be it known that I, THOMAS ALFRED BRYAN, of Queenstown, in the county of Queen Anne and State of Maryland, have
5 invented a new and improved apparatus for removing mud from the bottoms of creeks, rivers, coves, &c., and depositing the same upon the adjacent shore; and I do hereby declare that the following is a full
10 and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1, is a top view of the aforesaid apparatus; Fig. 2, a side view of the same;
15 Fig. 3, a transverse section, in the line *x, x*, of Fig. 2; Fig. 4, a side view of a portion of said apparatus, representing the parts in a different position from that shown in Fig. 2, and Figs. 5 and 6, are enlarged representations
20 of the bucket B, detached from the aforesaid apparatus.

Similar letters indicate corresponding parts in each of the drawings.

The four principal elements of my apparatus for scooping up the mud in the bottoms of creeks, coves, &c., and then removing the same to the adjacent shore, are a vertical horse power drum A, a cable P, a bucket B, and a pulley-float N, the drum A,
25 being supported by means of a suitable frame, erected on the shore of the water from which the mud is to be taken, the pulley-float N, being anchored at a short distance from the shore of said water; and
30 the bucket B, being connected to both ends of the lengthy cable P, which passes in its course several times around the drum A, and also around one or two pulleys pivoted on board the float N.

40 Motion is imparted to the drum A, in either direction, by the power of a horse attached to the lever I, which projects from the shaft of said drum.

The pulley-float N, having been properly
45 located and secured, and the ends of the cable P, having been made fast, the one to the bail and the other to the bottom of the bucket B, a motion in one direction imparted to the drum A, will drag the bucket
50 outward to the desired position at the bottom of the cove or creek, from which the mud is to be removed; and then by reversing the motion of the said actuating drum A, the bucket B, will be drawn forward and
55 shoreward; the peculiar shaped mouth of said bucket causing it to fill with mud as it

advances, and on reaching the shore it will be drawn up the inclined guiding-way M, to the position shown in Fig. 4; when, by means which will hereinafter be explained, 60 the said bucket will be instantly thrown into the reversed position shown by the red lines in Fig. 4, and will discharge its contents into the receptacle C, from which by opening a gate, the mud will discharge itself into 65 carts to be removed to the positions where it may be required for manuring purposes.

The frame work which sustains the drum A, may be constructed in the manner represented in the drawings, or any other that 70 may be deemed expedient.

The cable P, is made to lay itself evenly upon the drum A, by means of the guiding pulleys *d, d*, whose pivot-pins project from a sliding frame H, H', that works between 75 the vertical ways O, O; the said sliding frame being suspended and operated within its guiding bearings by means of the rope *q*, which passes from the small drum *a*, at the projecting upper end of the shaft of the 80 main drum A, first over the pulley *r*, at the upper end of the upright Q, and thence, after passing alternately over a series of pulleys within the block *c*, which is secured to the said sliding frame, and a series of 85 pulleys within the block *b*, which is suspended to the frame-brace D, the said rope *q* is made fast to the strap of the last mentioned pulley-block *b*, as shown in the drawings. It will therefore be perceived that the 90 motion of the drum A, in one direction, will impart an upward movement to the sliding frame H, H', which carries the aforesaid pulleys *d, d*; and the motion of said drum in an opposite direction, will allow the said 95 frame to descend; and consequently, it will be an easy matter to so graduate the aforesaid movements of the sliding frame H, H', as to cause its pulleys *d, d*, to lay the cable P, evenly and uniformly over the face of 100 the drum A. The frame work which supports the inclined way M, and the mud receptacle C, is represented in the drawings as being composed of the horizontal beam G, the nearly vertical posts L, L, and the in- 105 clined braces K, K; but the said frame-work may be constructed in any manner that may be deemed expedient.

The portion of the cable P, which draws the bucket B, inward, passes over a guiding 110 pulley *p*, which is pivoted between blocks that rise from the upper side of the beam

G; and the portion of said cable which draws the bucket outward, passes over a guiding pulley, or through a guiding aperture, in a block that descends from the under side of said beam.

The bucket B, is made of iron, and the cable, or cables, which draw the said bucket outward and inward, should be sufficiently slack to allow the said bucket to readily sink to the bottom of the water. The bottom of the bucket is tapering on all the sides thereof, which enables it to be drawn rearward with the least possible obstruction.

The float N, may be in the shape of a timber frame, or it may be in the form of a scow or a boat, at the option of the builder.

The bucket B, is of such a shape that as it is drawn forward, it naturally rolls on to its broad flat side, or the side thereof which extends beyond the other sides of the bucket and forms a sort of shovel *n*, for scraping up the mud and conveying the same into the bucket.

The extremities of the bail *h*, of the bucket are jointed to side-bars *f*, which extend along the sides of the bucket to the pivot-pins *o*, which connect the said bars to the bucket at points near to the lower end of the same and also near to the curved side of said bucket. A curved latch-strap *m*, which embraces the entire mouth of the bucket, with exception of the broad flat side thereof upon which it is represented as resting in the drawings, is pivoted to the side bars *f*, *f*, by means of the pivots *i*, and the said latch-strap is also connected to the said side-bars *f*, *f*, by means of the oblique bridle straps *e*, in the manner represented in the drawings: viz: in such a manner that the said latch strap can be vibrated upon its pivot-pins *i*,

to such a degree as to detach the latch-hooks at the extremities of said latch-strap, from the ears *j*, at the sides of the bucket, whenever it is desired to cause the bucket to capsize itself for the purpose of discharging its contents.

When the bucket B, is elevated to the position shown in Fig. 4, a man standing at the head of the inclined way M, strikes upon the projection *h*, from the central portion of the latch-strap *m*, of the bucket, with sufficient force to detach the hooks at the extremities of said strap from the ears *j*, when the upper end of the bucket will fall forward into the capsized position shown by the red lines in Fig. 4; a position which will discharge the entire contents thereof into the mud receptacle C.

I am aware that the arrangement of the vertical drum, the cable, the bucket, and a fixed pulley, for giving the bucket the alternate or reciprocating motion, is not new; and therefore I do not claim this arrangement broadly; but

What I claim as my invention and desire to secure by Letters Patent, is—

The arrangement of the vertical drum A, with the cable P, the pulley-float N, the bucket B, and the mud receptacle C, substantially in the manner and for the purposes herein set forth.

The above specification of my improved apparatus for removing mud from the bottoms of rivers, creeks, coves, etc., signed and witnessed this 6th day of May, 1859.

THOS. ALFRED BRYAN.

Witnesses:

Z. C. ROBBINS,
J. QUINCY ADAMS.