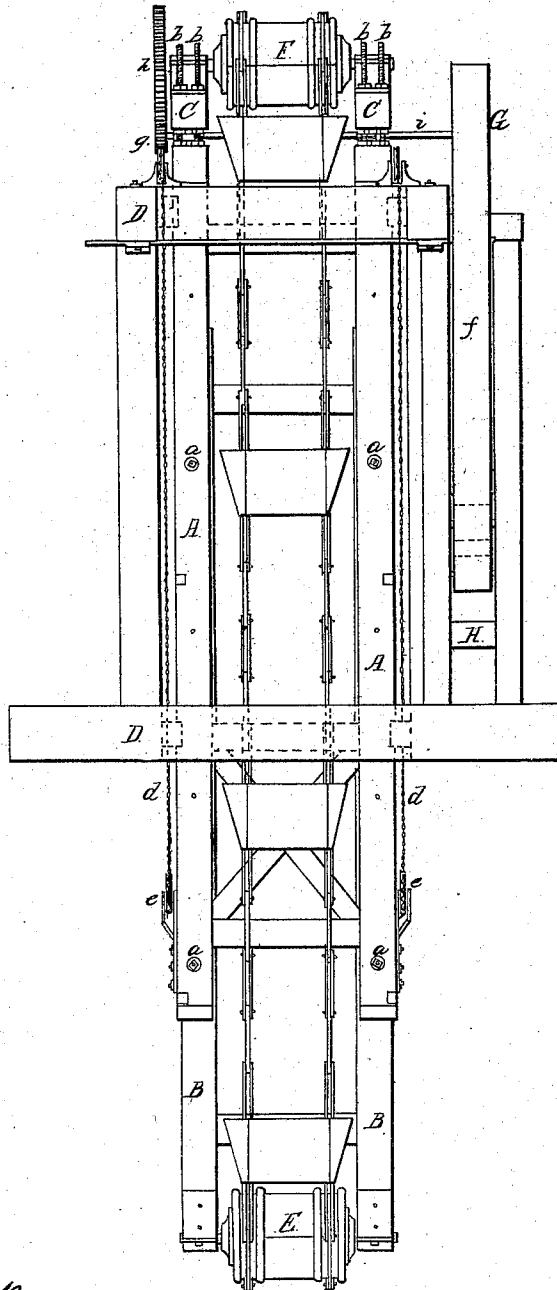


O. CHANUTE & G. S. MORISON.
DREDGING MACHINE.

No. 98,848.

Patented Jan. 18, 1870.



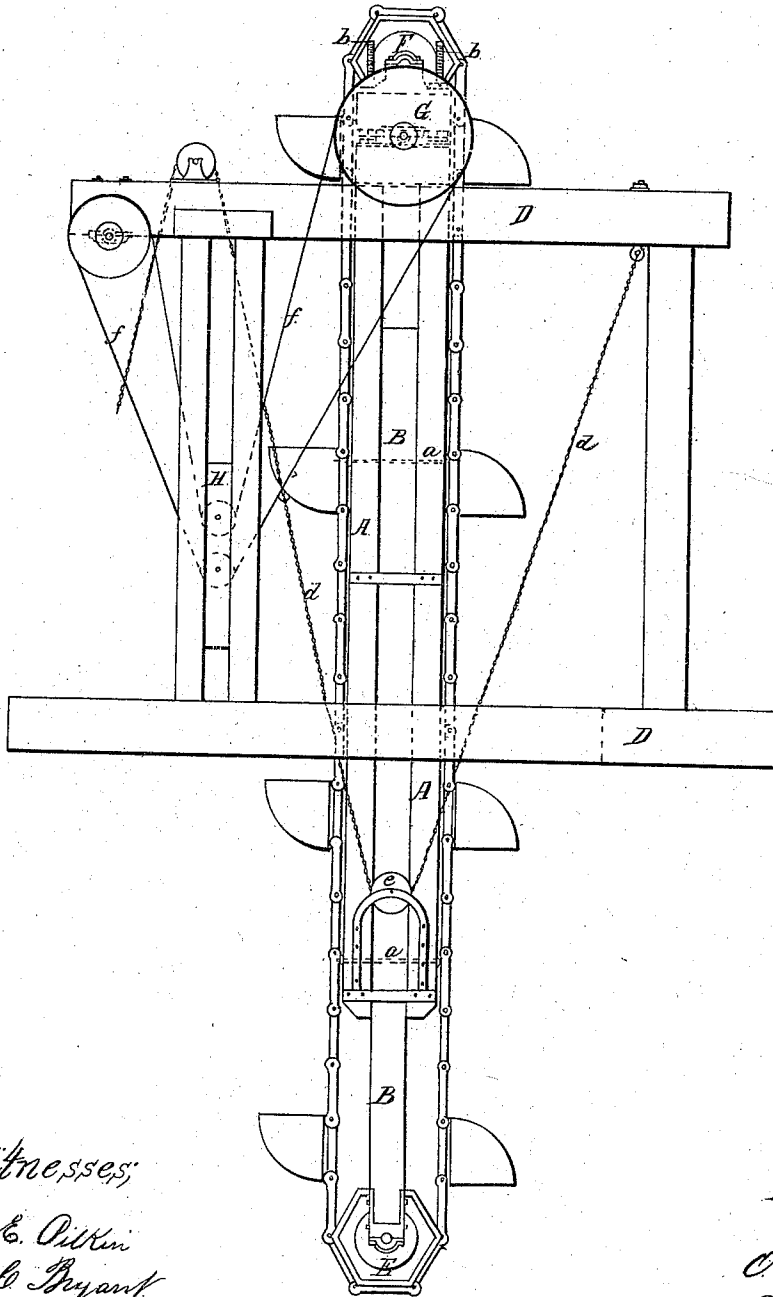
Witnesses;
Geo. E. Pittkin
H. C. Bryant.

Inventor;
O. Chanutte
G. S. Morison.

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UNITED STATES PATENT OFFICE.

O. CHANUTE AND G. S. MORISON, OF KANSAS CITY, MISSOURI.

IMPROVED DREDGING-MACHINE.

Specification forming part of Letters Patent No. 98,848, dated January 18, 1870.

To all whom it may concern:

Be it known that we, OCTAVE CHANUTE and GEORGE S. MORISON, of the city of Kansas, in the county of Jackson and State of Missouri, have invented a new and useful Improvement in Dredging-Machines, the object of which improvement is to increase the range of the machine, thereby enabling the same machine to work at greatly-varying depths.

The nature of this invention consists in so mounting an endless-chain dredging-machine that the frame carrying the chain and buckets may be lengthened to suit an increased depth of excavation, and also be raised and lowered independently of such lengthening, to follow the varying levels of the material excavated, as will appear more fully from the following specification and accompanying drawings.

The frame carrying the chain and buckets is of two parts—a double outer frame, A A, and a single inner frame, B B, movable within the former—the two being held together by the bolts *a a a a*. The lower tumbler, E, is mounted at the foot of the inner frame, and the upper tumbler, F, on the head-blocks C C, also carry the counter-shaft *i*. These head-blocks are carried by the screws *b b*, set in the head of the double frame A A, and passing through the head-blocks, which may be raised or lowered by the adjusting-nuts above and below. The bucket-frame is free to move vertically in the stationary frame D D, and may be raised and lowered by the chains *d d* passing through the sheaves *e e* on each side of the double frame A A. The length of the bucket-frame may be increased by adding additional lengths to the bucket-chain, withdrawing the bolts *a a a a*, and raising the double frame A A upon the single frame B B till the desired length is obtained. The two frames should then be reunited by replacing the bolts *a a a a*, and any slack remaining in the bucket-chains taken up by the adjusting-screws *b b*. The frames A A and B B should be bored to receive the bolts *a a a a*, the distance from hole to hole being one-half the distance from bucket to bucket, or, in a machine like that shown in the drawing, three times the length of each link of the bucket chain. The driving-power is communicated by the belt *f f*, which turns the upper tumbler, F, by means of the pinion *g*, working on the gear-wheel *h*, the adhesion of the belt being secured by the weight of the tightener H, sliding in a vertical frame. The buckets are made with curved or inclined bot-

toms, as shown on the drawing, so that the form of the inverted bucket shall throw forward the excavated material falling from the bucket above, thereby dispensing with the rockers usually needed to shed the sand from vertical endless-chain dredges.

This improvement may be applied to any dredging-machine of the endless-chain pattern; but it is especially used in excavating for deep sand foundations, and wherever excavations of great depth are to be made within a limited area.

The machine should be so mounted that at the beginning of operations the buckets will scrape the sand when the bucket-frame, set at its shortest length, is raised as high as convenience allows. As the excavation proceeds the bucket-frame should be fed down by the chains *d d* as far as the driving-gear will admit. An additional length of bucket-chain should then be added, the bucket-frame lengthened by raising the outer frame, A A, and the dredging continued as before, the same process being repeated until the excavation is carried to the desired depth.

For very deep work the bucket-frame may be made of three or more parts sliding within one another, in place of two; or the combination of the two motions may be obtained by some other appliance; and the frame may be mounted on an incline, instead of vertically, if preferred.

A system of gear-wheels may be substituted for the driving-belt and tightener, and the bucket-frame may be raised and lowered by screws or a pinion and ratchet in place of the chains *d d* and the sheaves.

What is claimed in this invention is—

1. The combination of the two motions—of the motion within the bucket-frame, by which the distance between the tumblers is varied to suit the depth of excavation, and of the motion of that frame independently of this change of length, by which the buckets are fed into the material excavated.

2. The compound or telescopic bucket-frame, of two or more parts, sliding within one another.

3. The adjustable head-blocks, regulated by screws, substantially as described.

O. CHANUTE,
G. S. MORISON.

Witnesses:

GEORGE E. PITKIN,
H. C. BRYANT.