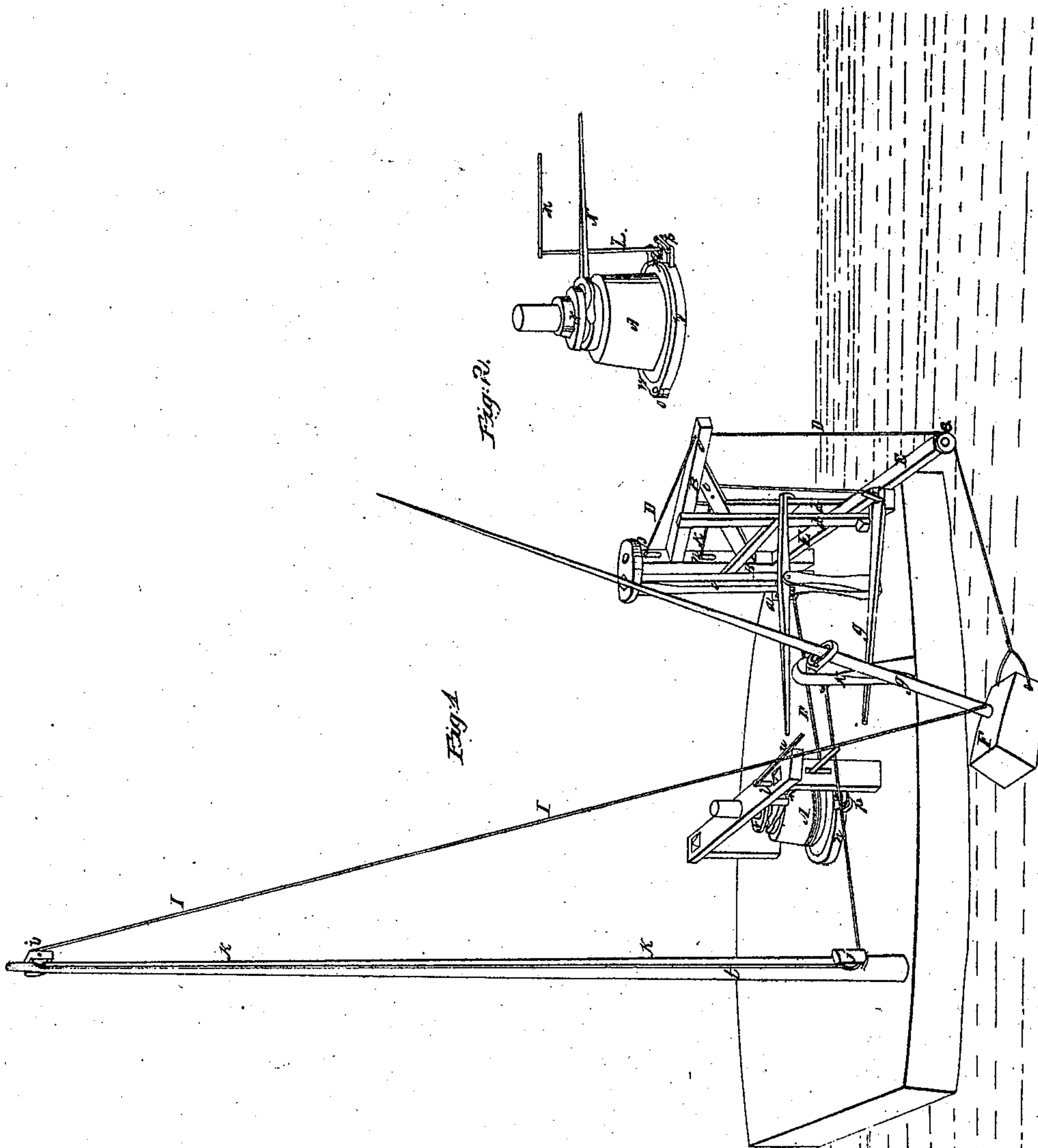


O. Allen.

Dredging Machine.

N^o 1,591.

Patented May 8, 1840.



UNITED STATES PATENT OFFICE.

OLIVER ALLEN, OF NORWICH, CONNECTICUT.

DREDGING-MACHINE FOR EXCAVATING UNDER WATER IN RIVERS, DOCKS, &c.

Specification of Letters Patent No. 1,591, dated May 8, 1840.

To all whom it may concern:

Be it known that I, OLIVER ALLEN, of Norwich, in the county of New London and State of Connecticut, have invented certain

5 Improvements in Dredging-Machines for Excavating Under Water in Rivers, Docks, &c.; and I do hereby declare that the following is a full and exact description thereof.

A main object in my improvements is so to
10 construct this machine as that the bucket by which the earth is to be raised shall be taken back by its own gravity to any desired point on the bottom of the river, dock, or other water where the excavating is to be effected,
15 instead of drawing it back by manual labor, as has usually been done.

Figure 1 in the accompanying drawing is a perspective view of the whole machine. A, is the main drum, or capstan, to which
20 the power is to be applied. This may be driven by horse power, or by any other adequate means. B, is the crane to which the dredging bucket is to be suspended, and by which it is to be moved to the required point
25 for delivering its load, and C the post firmly fixed to the deck of the machine, and sustaining the cap in which the upper gudgeon of the crane is received. D, D, D, is the main chain, or rope upon which the capstan
30 A, operates. This passes from the drum or capstan around a sheave in a snatch block at *a*, thence over a sheave in the upper end of the crane post at *b*, and thence over the
35 sheave at the end of the arm of the crane at *c*, from which the bucket is suspended. E, E, is a lever which works on a joint pin in the crane post B, allowing it to rise and fall, for a purpose to be presently explained. It
40 is guided up and down immediately under the arm B', between the cheeks *d*, *d*, attached to the crane. This lever has on its outer end a sheave *e*, around which the chain D, D passes, and which is prevented from
45 leaving it by means of a metallic loop, or cheek piece, between which and the sheave said chain passes up and down. The lever E, E, is represented as down, and resting on the deck of the machine, which is its position when the excavating bucket F, is being
50 charged with earth, and raised up to a certain height when in this position it is held down by the latch *f*, but it may be disengaged by making pressure with the hand or foot upon the lever *g*. G, is a pole firmly at-
55 tached to the back of the excavating bucket

F, which pole slides up and down freely in a hole in the swivel piece *h*, which turns in the upright post H, and which thus serves to keep the bucket in a proper position, while it admits of its moving freely in the act of ex-
60 cavating. I, I, is a rope which is made fast to the middle of the back of the bucket, whence it passes to a sheave *i*, at the upper end of the mast K, K, down which it descends, passing around the sheave *j*, where
65 its slack may be taken in, and the rope made fast to a cleat on the post H, or elsewhere, thus placing it under the control of one of the attendants, to haul in or out, as may be
70 necessary. *k*, *k*, is a rope attached at one end to the lever E, E, and passing over sheaves at *l*, and *m*, in order to have a weight attached to its opposite end as a counterpoise to the lever E, E.

Fig. 2 is a separate view of the drum or
75 capstan A, and its appendages, and is intended to exhibit more clearly the manner of constructing the brake by which it is to be checked when necessary. This brake consists of an iron ring, or hoop, *n*, *n*, in two
80 parts connected by a joint pin at *o*, which passes into the deck. L, is a vertical rod, which may be turned by the lever M, and carrying at its lower end two connecting
85 links *p*, *p*, attached by joint pins to the respective sections of the brake, so that by turning the lever M, they may be made firmly to embrace the drum, and hold it in
90 check. N, N, is the engaging and disengaging apparatus by which the drum or capstan may be thrown into and out of gear. There is not anything novel in this part.

When this machine is to be used, the bucket being allowed to descend by raising
95 the disengaging apparatus, it will swing back by its own gravity, in consequence of its connection with the post H, and the line I, I, by which the depth of its descent is to be regulated. The main drum or capstan
100 is then to be thrown into gear, and the propelling power applied, which will draw the bucket forward and cause it to receive its load. When it comes nearly under the lever
105 E, E, it will be raised, and as it comes into contact, or nearly so, with the end of this lever, the latch *f*, is to be withdrawn, and the rise of the bucket will carry the lever with it. When raised to the proper height for dumping the crane is swung around, so
110 as to carry the bucket over the lighter and

the load is dumped by opening the bottom of the bucket, which, as in many other machines, is so constructed as to admit of this being done. The crane is then brought back,
5 the bottom of the bucket closed, and the disengaging apparatus raised, so as to throw the drum out of gear, and allow the bucket and lever to descend, and the operation to be repeated.

10 Having thus fully described the construction of my improved dredging machine, and shown the manner in which the same

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

The manner in which I govern and direct 15 the operation of the excavating bucket F, by the combined operation of the lever E, E, and the rope or line I, I, arranged and operating substantially in the manner and for the purpose herein set forth.

OLIVER ALLEN.

Witnesses:

LA FAYETTE L. FOSTER,
J. B. BIRHEE.