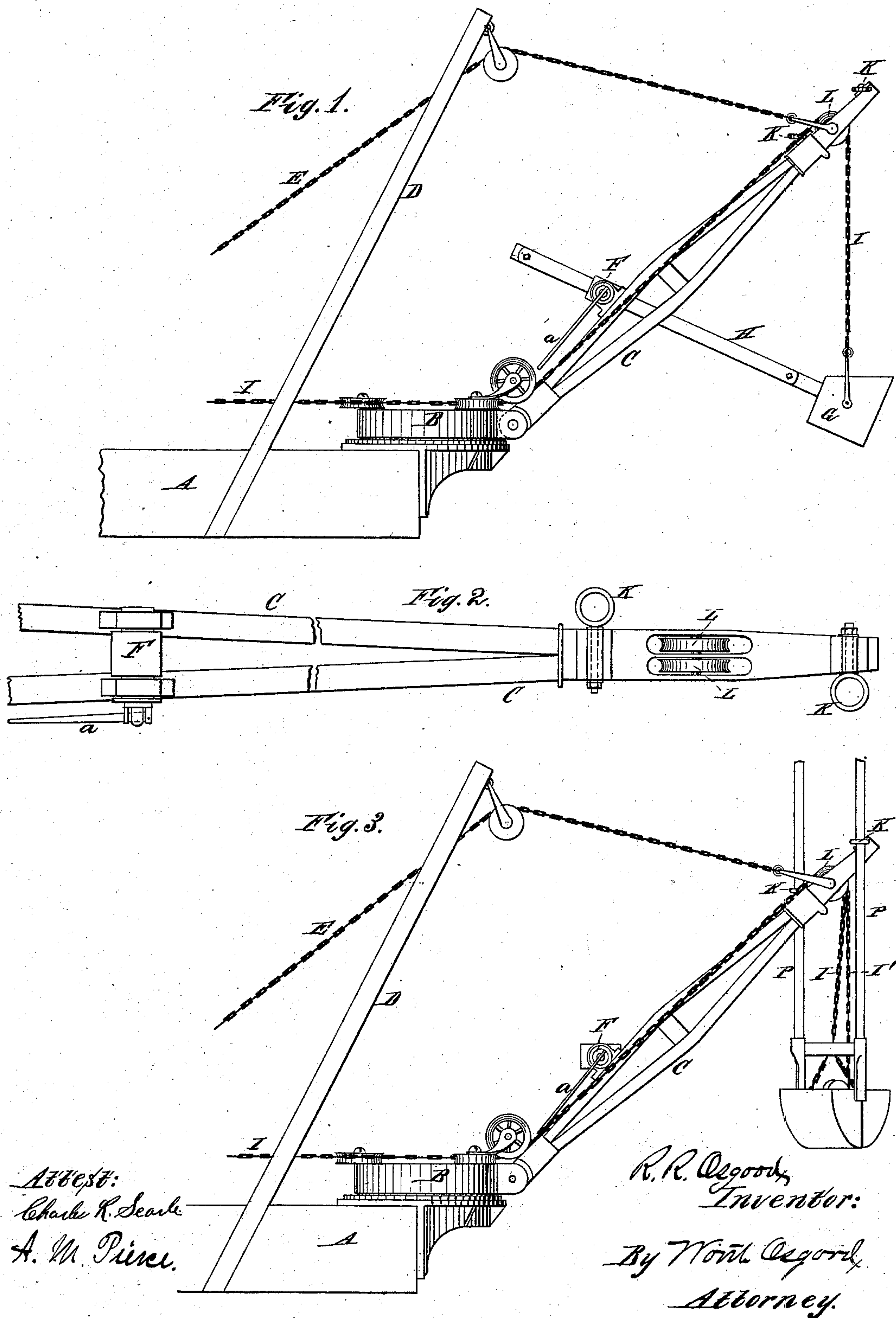


(No Model.)

R. R. OSGOOD.  
DREDGER AND EXCAVATOR.

No. 257,888.

Patented May 16, 1882.





# UNITED STATES PATENT OFFICE.

RALPH R. OSGOOD, OF TROY, NEW YORK.

## DREDGER AND EXCAVATOR.

SPECIFICATION forming part of Letters Patent No. 257,888, dated May 16, 1882.

Application filed May 27, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, RALPH R. OSGOOD, of Troy, county of Rensselaer and State of New York, have invented certain new and useful  
5 Improvements in Dredges and Excavators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

10 My invention has relation chiefly to that class of machines used for under-water excavating or dredging, and for that purpose generally mounted upon a boat, though the improvements might, if found desirable, be applied in some  
15 instances to a machine mounted upon a platform intended to run upon rails or other suitably-prepared road-bed; and the invention has for its principal object the construction of a dredge or excavator of the class shown in pat-  
20 ents of the United States granted to me July 13, 1875, and October 23, 1877, numbered, respectively, 165,608 and 196,378, in such manner that one and the same machine may be employed either with the scoop or shovel, as  
25 shown in said patents, or with the ordinary or any approved pattern of "clam-shell" dipper, as circumstances may require, thus practically making the two kinds of machines in one, and obviating the expense of the boat or platform  
30 and machinery for the second style of dredge or excavator. To accomplish this the invention involves certain novel and useful combinations or relative arrangements of parts, all of which will be hereinafter first fully described,  
35 and then pointed out in the claims.

In the drawings, Figure 1 is a side elevation of a machine embodying my improvements, the scoop or shovel and its attached handle being shown in position ready for use and the pole-  
40 guides for the clam-shell-dipper poles being shown as mounted upon the extremity of the same boom that carries said dipper-handle, but without the poles in place. Fig. 2 is a plan view of one part of the boom, showing the lo-  
45 cation of the shovel-handle guide and the pole-guides mounted thereon, neither the handle nor the poles being in place. Fig. 3 is a view similar to Fig. 1, except that the clam-shell dipper and poles are mounted in place for use, while  
50 the shovel-handle is omitted or withdrawn from its mountings.

Like letters of reference, wherever they occur, indicate corresponding parts in all the figures.

A dredging-machine, especially such an one as is used for under-water excavations, is fre- 55  
quently required to change from a hard to a soft bank, or the reverse, the material to be excavated varying greatly in hardness and consistency. In a hard bank the scoop or shovel is only available for effective work, and in a 60  
soft bank—such as mud, light sand, and debris—the clam-shell dipper is most advantageous, being easier and more rapid in its operations. Upon such works as require the peculiar capabilities of both kinds of machines 65  
it has been customary to employ two separate dredges or excavators, necessitating practically as much outlay for machinery and fittings in one machine as in the other. To obviate this expense I combine the two machines in 70  
one, as will hereinafter appear.

A is the boat or platform upon which the engine is mounted; B, the turn-table carrying the boom C; and D is the frame or support which maintains the boom in any position to 75  
which it may be adjusted through the medium of chain or cable E.

F is the guide for the handle H, mounted in trunnions upon the boom and so arranged that the handle may travel in the guides in the di- 80  
rection of its length as well as revolve upon the trunnions when clamped by the holding mechanism, which is brought into play by movement of the lever a.

G is the ordinary scoop, or "shovel," as it is 85  
called, mounted upon the extremity of handle H and operated by the operating chains or cables, (but one of which is shown in Fig. 1, as at I.)

K K are the guides for the poles of the clam- 90  
shell dipper, and these I mount upon the same boom which carries the guide and trunnions for the shovel-handle H. The guides K K project beyond the sides of the boom and are jour-  
naled so as to turn thereon in any approved 95  
way, so that the poles P P of the clam-shell dipper, when located in the guides, may automatically assume a vertical position independently of the position of the boom, and they (the guides K K) are located one forward of the 100  
sheaves L L, over which the operating-chains are passed, and the other on the opposite side



of the boom and in rear of the sheaves, so that they or the poles when located in place will not interfere with the proper operation of the machine. The handle H, as also the poles P P, are made so as to be readily detached and as readily inserted in their proper bearings.

With the improved machine as thus constructed, to use the shovel alone it is mounted in place, as at Fig. 1, the pole-guides being entirely out of the way and not interfering with any of the workings of the machine. If it be desired to replace the shovel by the clam-shell dipper, or to convert the machine into one of the other class, then the handle H is withdrawn from its mountings and the poles P P inserted in their proper guides, as at Fig. 3. In this latter case the operating-chains I and I' are both employed in the same relative positions as with the other style of machines—one, as I, being used for the opening of the buckets, and I' being employed to close them after the usual manner. Thus it will be seen that the compound or combined machine requires only an additional outlay for the second form of buckets in order to make it readily convertible from one class to the other, and the changes may be easily and quickly accomplished with very little trouble or delay.

Instead of the peculiar form of boom illustrated, any style of crane might be employed; but the boom shown is that best adapted for either class of machines, and I therefore prefer it to indicate the character, scope, and simplicity of my improvements.

The improvements will readily recommend themselves for adoption in any case when their obvious advantages in point of time-saving and expense are in fact or likely to be desirable.

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

1. In a dredging-machine or excavator, the combination, with the swinging boom or crane, carrying the shovel-handle guide, of the pole-guides for the clam-shell-dipper poles mounted upon said boom or crane, and adapted to operate, substantially in the manner and for the purposes set forth.

2. In combination with the swinging boom or crane, the guide for the dipper-handle axled upon said boom, and the pole-guides also axled thereon on opposite sides thereof and on opposite sides of the sheaves for the operating-chains, substantially as shown and described.

3. The herein-described convertible excavator, the same being composed essentially of the boom or crane carrying the movable dipper-handle guide and fittings, and the clam-shell-pole guides mounted upon said boom or crane, the whole being adapted for use, substantially in the manner and for the purposes set forth.

In testimony that I claim the foregoing I have hereunto set my hand in the presence of two witnesses.

RALPH R. OSGOOD.

Witnesses:

GERALD G. RIORDAN,  
N. DANNPERLE.