

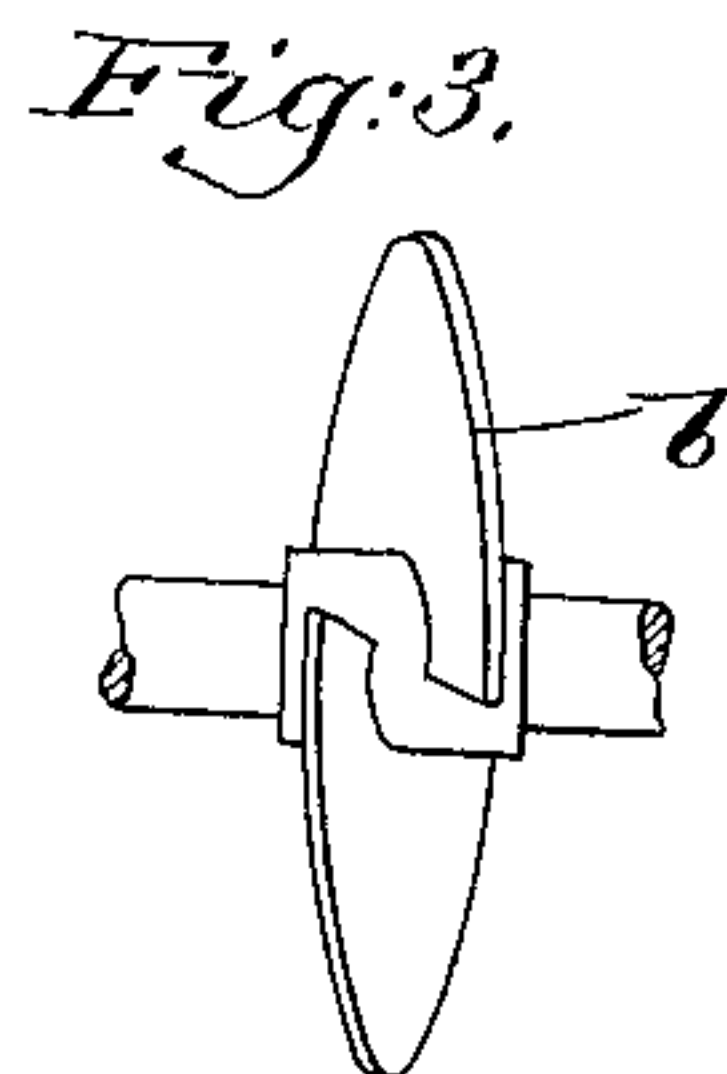
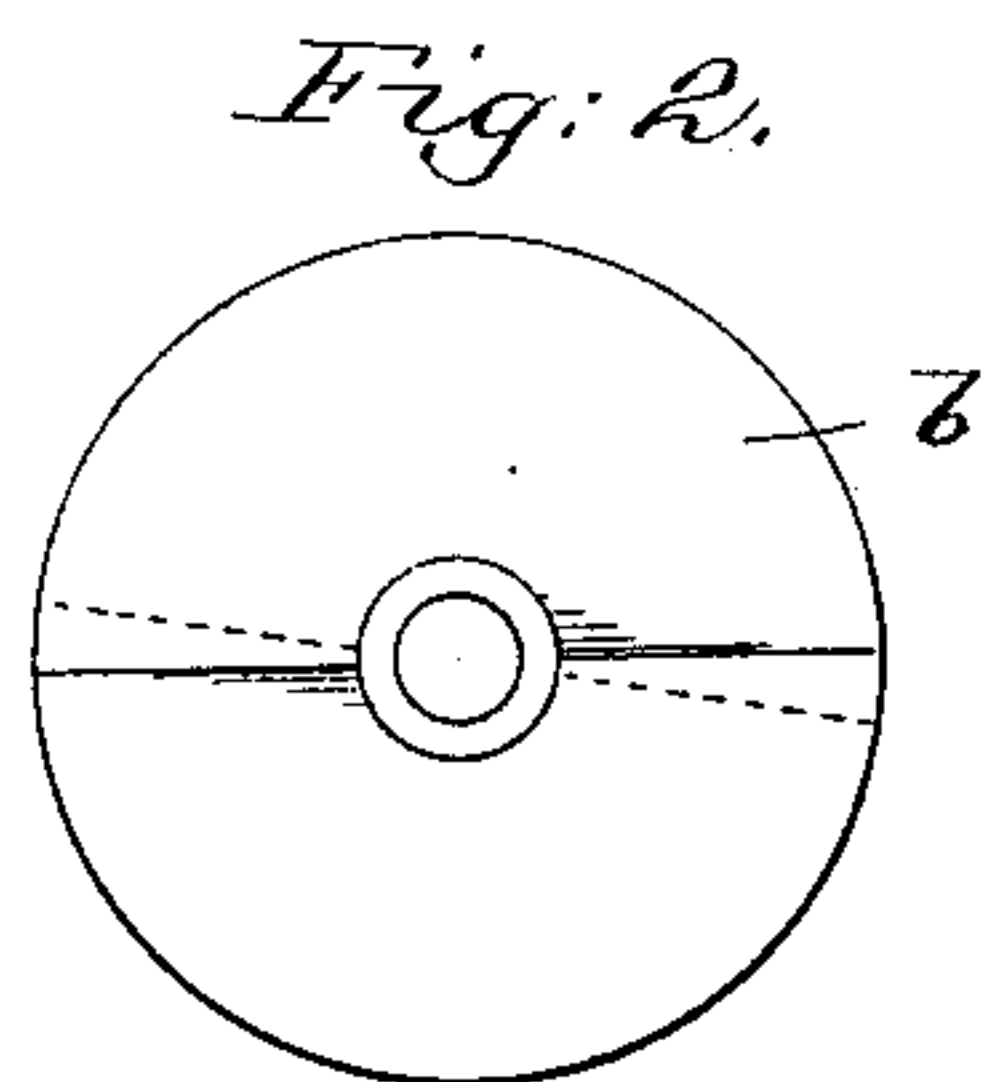
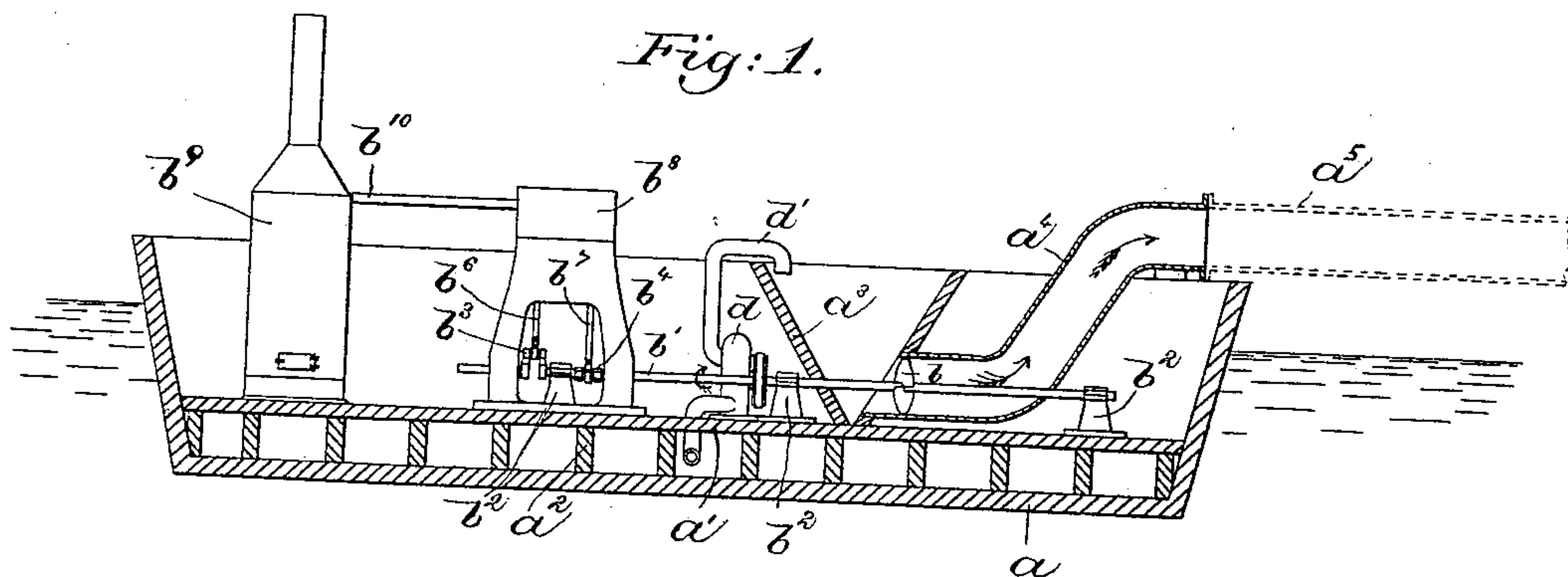
(No Model.)

F. A. LOCKWOOD.

SCOW.

No. 386,712.

Patented July 24, 1888.



Witnesses.  
Howard F. Eaton.  
Fred. S. Grunleaf

Inventor:  
Frederic A. Lockwood  
by Leroy & Gregory.  
attys.

# UNITED STATES PATENT OFFICE.

FREDERIC A. LOCKWOOD, OF BOSTON, MASSACHUSETTS.

## SCOW.

SPECIFICATION forming part of Letters Patent No. 386,712, dated July 24, 1888.

Application filed April 30, 1888. Serial No. 272,343. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERIC A. LOCKWOOD, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Scows, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to provide scows or vessels, such as are usually employed with dredging-machines, with apparatus, as will be described, by which the material—usually mud—deposited in the said scow or vessel by the dredging-machine may be carried therefrom a substantially long distance.

In accordance with my invention the scow or vessel, which may be of usual construction, is provided with a hopper having connected to it, near its bottom, a discharge pipe or outlet, in which is preferably located a screw-propeller mounted on a shaft driven by an engine carried by the scow or vessel, the said discharge pipe or outlet having connected to or forming part of it a preferably flexible pipe, which may be of any desired length, and through which the material discharged into the hopper may be forced by the screw-propeller.

My improved scow or vessel is especially adapted to be used as an auxiliary to the dredging-vessel shown and described in United States Patent No. 299,945, dated June 10, 1884, wherein the material is elevated by an endless chain of buckets to a considerable height and discharged into a chute, which in practice may be extended to a considerable distance from the dredge, and with my improved scow material may be discharged from the chute referred to into the hopper of the scow and then discharged from the scow at a considerable distance therefrom.

My improved scow may also be used as an auxiliary to excavators or laborers in excavating on the banks of rivers and canals.

My invention therefore consists, essentially, in the combination, with a scow or vessel having a hopper to receive mud or other material, of a discharge-pipe connected to said hopper, and a rotating screw located in said discharge-pipe to force the material from the

hopper through the discharge-pipe, substantially as will be described.

Figure 1 is a vertical longitudinal section of a scow or vessel embodying my invention, the screw-propeller, engine, and its boiler being in elevation; Figs. 2 and 3, details of the screw-propeller.

The scow or vessel *a*, of usual construction, and having the deck *a'*, supported, as shown, by braces or beams *a''*, is provided with a V-shaped hopper or receptacle, *a'''*, having connected to it, near its apex or bottom, a pipe, *a''''*, (herein shown as carried aft above the scow,) the said pipe having connected to or forming part of it a preferably flexible pipe, *a'''''*, (indicated by dotted lines, Fig. 1,) the said flexible pipe being extended from the scow any desired distance or to the place or locality in which it is desired to discharge the material deposited in the hopper. The material referred to—usually mud from the bottom of a river or harbor or bay—is made plastic, to facilitate its passage through the discharge-pipe, by water forced into the hopper by a pump, *d*, driven, as herein shown, from the screw-shaft *b'*. The material, in a plastic state, is fed from the hopper into and through the discharge-pipe by a screw, *b*, on a shaft, *b'*, having bearings, as shown in uprights *b''*, the said shaft being provided with cranks *b'''* *b''''*, having joined to them connecting-rods *b''''''* *b''''''''* of a compound engine, *b'''*, (herein shown as upright,) the said engine being supplied with steam from a boiler, *b''''*, through a pipe, *b''''''*, in usual manner.

When the material to be dredged is easily disintegrated or of the nature of silt, it may be sucked up by the pump and discharged through the pipe *d'* into the hopper, from whence it is forced through the discharge-pipe, as above described.

I claim—

1. The combination, with a scow or vessel having a hopper, of a discharge-pipe connected to said hopper and a rotating screw located in said discharge-pipe, substantially as described.

2. The combination, with a scow or vessel having a hopper, of a discharge-pipe connected to the said hopper, a rotating screw located in said discharge-pipe to force the ma-



terial from the hopper through said discharge-pipe, an engine to drive said screw, and a boiler carried by the scow or vessel, substantially as described.

- 5 3. The combination, with a scow or vessel having a hopper, of a discharge-pipe connected to the said hopper, a rotating screw located in said discharge-pipe to force the material from the hopper through said discharge-  
10 pipe, an engine to drive said screw, a boiler,

and a pump, all carried by the scow or vessel, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

FREDERIC A. LOCKWOOD.

Witnesses:

JAS. H. CHURCHILL,  
T. L. EMORY.