

J. Stever,
Ship Pump.

N^o 5,395.

Patented July 22, 1856

Fig. 1

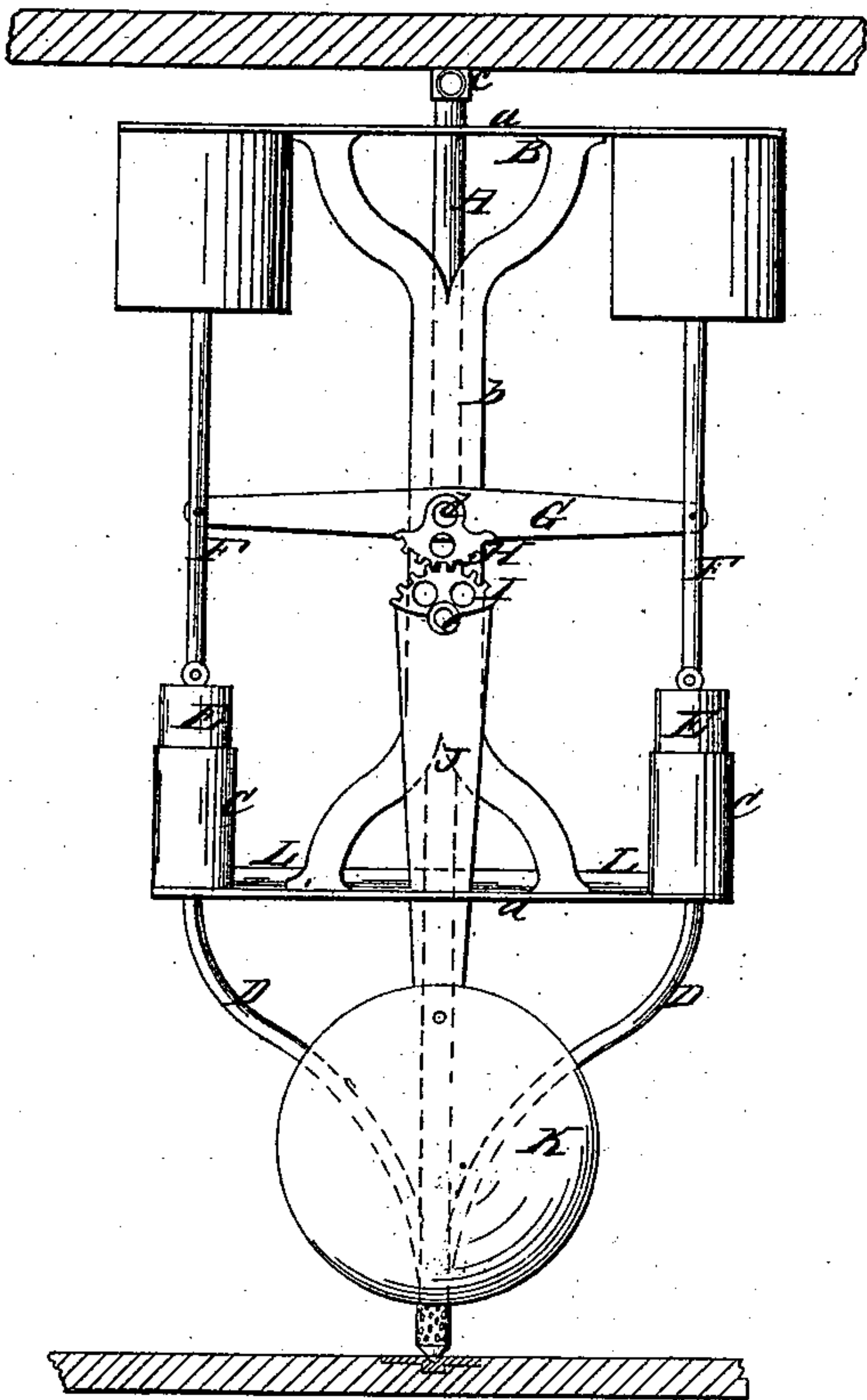
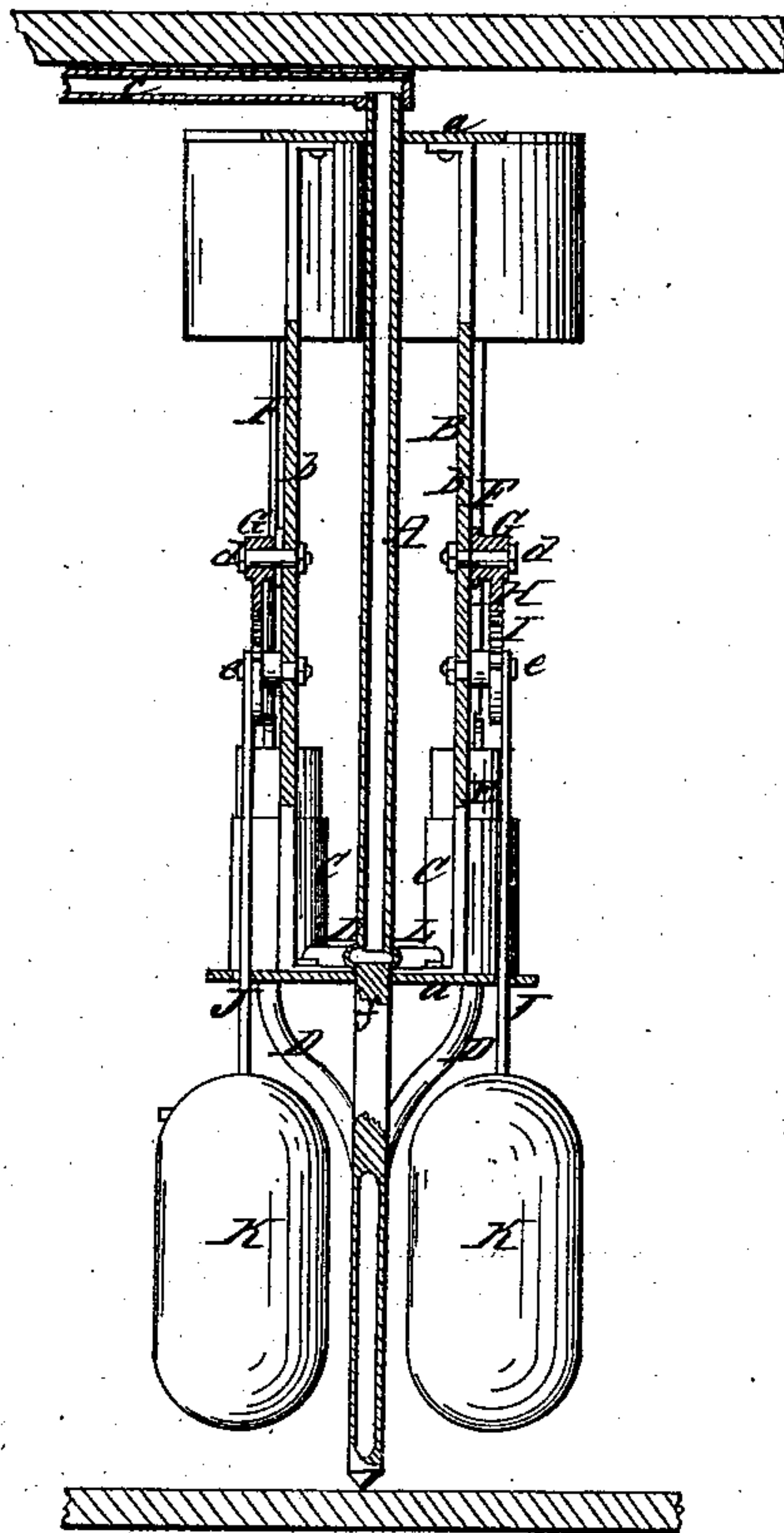


Fig. 2



UNITED STATES PATENT OFFICE.

J. STEVER, OF BRISTOL, CONNECTICUT.

ARRANGEMENT OF MEANS IN PENDULUM-PUMPS FOR SHIPS.

Specification of Letters Patent No. 15,395, dated July 22, 1856.

To all whom it may concern:

Be it known that I, J. STEVER, of Bristol, in the county of Hartford and State of Connecticut, have invented a new and Improved
5 Mode of Operating Ships' Pumps; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in
10 which—

Figures 1 and 2 are side views of my improvement.

Similar letters of reference indicate corresponding parts in the two figures.

15 My invention consists in attaching a series of pumps to a frame which is secured to a hollow vertical shaft which is allowed to turn freely in its bearings, the pumps communicating with the hollow shaft and
20 having weights or bobs connected by gearing and levers with their pistons so that the pumps will be operated by the motion of the ship or vessel, the hollow shaft serving as the force and suction pipe as will be
25 presently shown and described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

30 A represents a vertical hollow shaft which is secured within the hold of a ship or vessel. This shaft is allowed to turn in its bearings and has a frame B, attached to it. The frame B, is formed of two horizontal plates (a), (a), through the centers of which
35 the shaft A, passes, the plates being secured to the shaft and connected by strips or uprights (b), (b), one at each side of the plates.

40 To the lower plate (a), there are attached pumps, C, four are shown in the drawings, one at each corner, but more or less may be used. The lower ends of the cylinders of these pumps are connected with the hollow shaft A, by pipes D.

45 The lower end of the hollow shaft A is perforated and the upper end is fitted with in the end of a horizontal pipe (c) which forms the upper bearing of the shaft.

50 E, represents the plungers of the pumps and F, the plunger rods. The plunger rods of the two pumps at each side of the lower plate (a), are connected with the ends of levers G, and the center of the levers G, are connected by pivots (d), with the strips or
55 uprights (b), (b). To the center of each lever G, there is attached a geared sector H. These sectors H, gear into sectors I, which

are attached to the upper ends of vertical bars J, secured by pivots (e), to the strips or uprights (b), the bars J being hung
60 loosely on the pivots (e). To the lower ends of the bars J, weights K, are attached, one to each.

The lower ends of the cylinders of the pumps, C, communicate with the shaft A, 65 by pipes L, the shaft A, having a partition (f) within it directly underneath the pipes L, so that the upper part of the shaft A, is a discharge or force pipe, and the lower part below the partition a suction pipe. 70 The lower part of each cylinder has a valve in it directly over its pipe D.

The operation of the pumps will be readily understood. The frame B, and shaft A, will move or be inclined of course 75 corresponding to the movement or inclinations of the ship or vessel and the sectors I, will be moved by the swing of the weights K, and the levers, G, and the plungers E, will be operated the bilge water being 80 drawn up through the lower end of the shaft A, into the pipes D, as the plungers rise and forced through the pipes L, into the shaft A, above the partition (f) and out of the end of the pipe (c). And as the 85 shaft A, turns in its bearings as previously stated it will be seen that the shaft A and frame B, will turn and consequently the direction of the movement or swing of the weights K, will always be in the same plane 90 with the movement of the ship or vessel, so that the pumps will be operated whether the ship is rolling from side to side or pitching fore and aft. Air pumps may be operated in the same manner and at the same 95 time by attaching them to the frame B, and having suitable pipes connected to them so that a ship or vessel may be ventilated by the same device.

Having thus described my invention what 100 I claim as new and desire to secure by Letters Patent is—

Attaching a series of pumps, C, to a hollow shaft A, which is allowed to turn freely in its bearing, and connecting the 105 weighted bars J, J, to the plunger rods, F, of the pumps by means of the geared sectors, H, I, and levers G, substantially as shown for the purpose specified.

J. STEVER.

Witnesses:

JAMES F. BUCKLEY,
WM. TUSCH.