

(No Model.)

W. W. MALLORY.
Hand Force Pump.

No. 237,193.

Patented Feb. 1, 1881.

Fig: 2.

Fig: 3

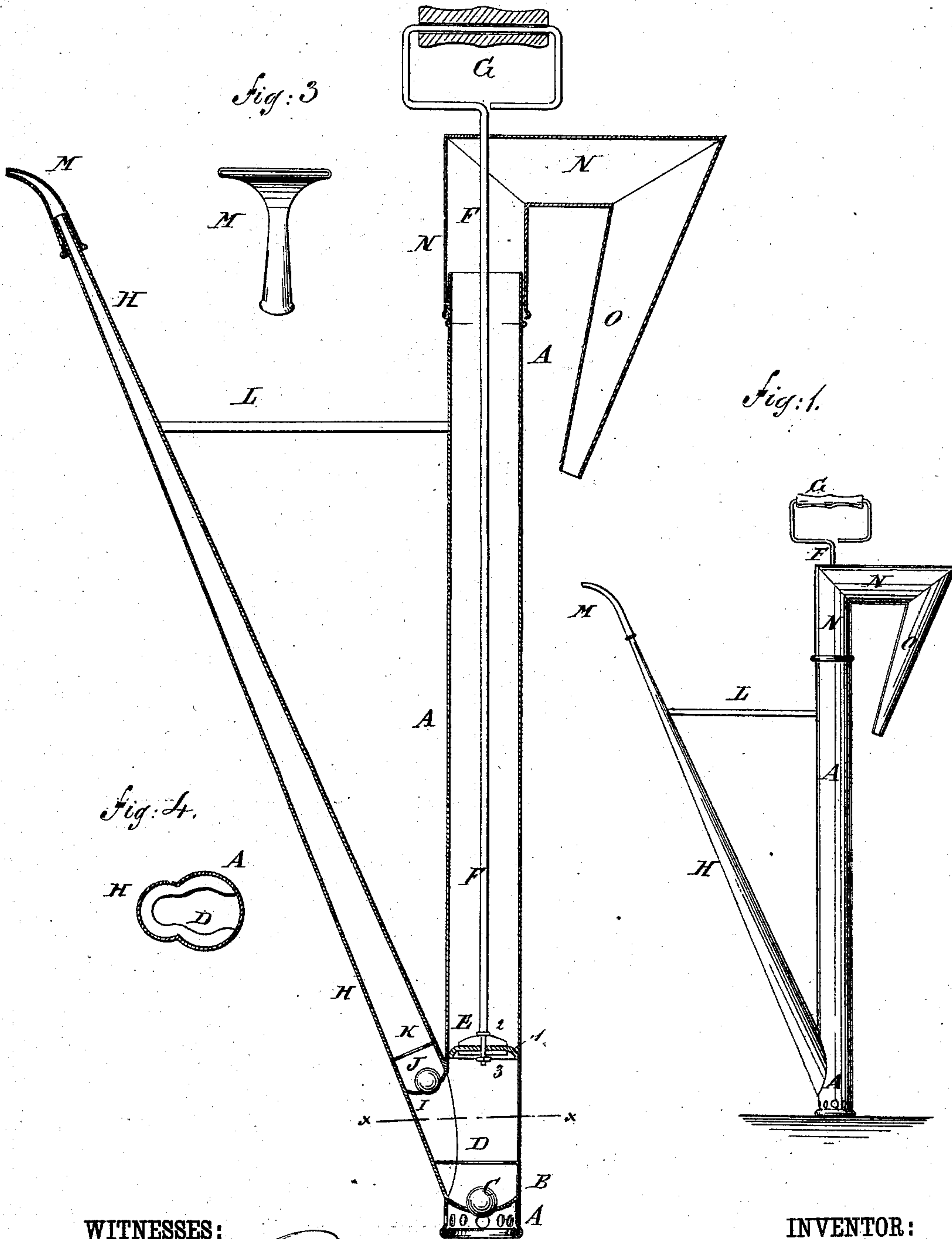


Fig: 4.

WITNESSES:

Chas. Nida.
C. Sedgwick

INVENTOR:

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UNITED STATES PATENT OFFICE.

WILLIAM W. MALLORY, OF HOLLAND PATENT, NEW YORK, ASSIGNOR TO
SARAH A. MALLORY, OF SAME PLACE.

HAND FORCE-PUMP.

SPECIFICATION forming part of Letters Patent No. 237,193, dated February 1, 1881.

Application filed October 9, 1880. (No model.)

To all whom it may concern :

Be it known that I, WILLIAM W. MALLORY, of Holland Patent, in the county of Oneida and State of New York, have invented a new and
5 useful Improvement in Hand Force-Pumps, of which the following is a specification.

Figure 1 is a side elevation of the improvement. Fig. 2 is a sectional side elevation of the improvement enlarged. Fig. 3 is a front
10 elevation of the nozzle. Fig. 4 is a cross-section taken through the line *xx*, Fig. 2.

Similar letters of reference indicate corresponding parts.

The object of this invention is to furnish
15 hand force-pumps for sprinkling plants, washing windows and carriages, and other uses, which shall be so constructed as to carry the overflow back into the reservoir, and which shall be simple in construction and convenient in use.
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In the accompanying drawings, A is the pump-cylinder, which is made of sheet metal and of a convenient length and size. In the cylinder A, around its lower end, are formed
25 perforations to prevent the entrance of water from being stopped by the lower end of the cylinder A, resting upon the bottom of the pail or other reservoir, from which the water is to be pumped.

30 To the cylinder A, at a little distance from its lower end, is attached a plate, B, which is concaved upon the upper side, and has a hole through its center to form a seat for the ball C, and cause the said ball to always return to
35 its seat after being raised by the entering water.

To the cylinder A, a little above the ball-valve B C, is attached a cross plate or bar, D, of such a width as to prevent the ball C from
40 rising above it, and at the same time not so wide as to prevent the free passage of water.

E is the piston which is formed by clamping a leather or other suitable packing, 1, between two washers, 2 3. The piston E has a hole
45 through its center to receive a tenon formed upon the lower end of the piston-rod F, where it is secured in place by a nut screwed upon the said tenon. The piston-rod F passes up through the center of the cylinder A, and has
50 a handle, G, formed upon its upper end.

H is the discharge-pipe, which may be made tapering or of uniform diameter. I prefer to make the discharge-pipe H tapering, as giving greater force to the discharged stream of water.

In the discharge-pipe H, at or a little above
55 its junction with the cylinder A, is secured a plate, I, concaved upon its upper side, and having a hole through its center to form a seat for the ball J, and to cause the said ball to return to its seat after being forced up by the
60 pressure of the escaping water.

To the discharge-pipe H, a little above the ball-valve I J, is secured a plate, K, of such a width as to prevent the ball J from passing it, but not wide enough to prevent the water from
65 passing it freely. The discharge-pipe H, as it passes upward, inclines from the cylinder A, and its upper part is connected with the upper part of the cylinder A by a brace or stay, L, attached to it and to the said cylinder.
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To the upper end of the discharge-pipe H is attached a nozzle, M, which is curved outward, and may be made with a wide and thin discharge-orifice, as shown in Fig. 3, to discharge the water
75 in a thin sheet; or the discharge-orifice may be made small and round to discharge the water in a stream or jet; or it may be made large and provided with a perforated plate or cap to discharge the water in a spray, as the purpose for which the pump is to be used may re-
80 quire.

To the upper end of the cylinder A is attached an elbow-pipe, N, through a hole in the upper side of which the piston-rod F passes, so as to cause the said piston-rod to work up
85 and down in a straight line. The elbow-pipe N also serves as a handle to hold the pump in place while being worked.

To the outer end of the elbow-pipe N is attached the upper end of a short downwardly-
90 projecting pipe, O, which is made tapering, and inclines toward the cylinder A, so as to guide any overflow water that may rise above the piston E against the side of the cylinder A, so that it will run down into the reservoir.
95

With this construction, when the piston E is drawn upward the pressure of the air upon the water in the reservoir will cause the water to raise the ball C and enter the cylinder A, the pressure of air upon the ball J holding
100

the said ball upon its seat. As the piston E is forced downward the pressure of the water forces the ball C to its seat and raises the ball J, so that the water will be forced out through the discharge-pipe H with more or less force, according as more or less force is applied to the piston E.

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

1. A hand force-pump constructed substantially as herein shown and described, consisting of the cylinder A, having a ball-valve, B C, at its lower end, the piston and piston-rod E F, the inclined discharge-pipe H, connected at its lower end with the lower part of the cyl-

inder A, and having a ball-valve, I J, at its lower end, the curved nozzle M, and the elbow-pipe N, having a tapering overflow-pipe, O, attached to its outer end, as set forth. 20

2. In a hand force-pump, the combination, with the upper end of the cylinder A and the piston-rod F, of the elbow-pipe N and the inwardly-inclined tapering pipe O, substantially as herein shown and described, to serve as a guide to the piston-rod, a handle to the pump, and to guide the overflow back to the reservoir, as set forth. 25

WILLIAM W. MALLORY.

Witnesses:

W. W. DE ANGELIS,
A. RIVERS.