J. M. HOLLAND.

Hand-Pump.

No. 206,451. Patented July 30, 1878.

Fig 1.

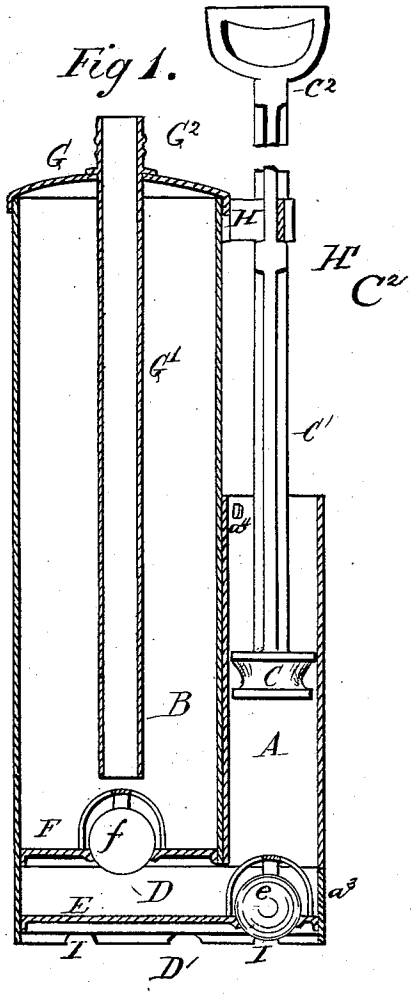


Fig 2.

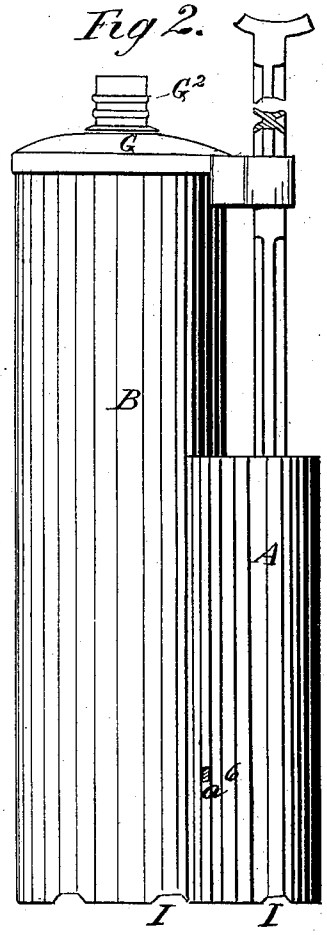


Fig 3.

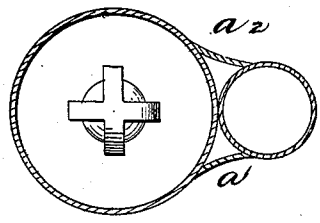


Fig 4.

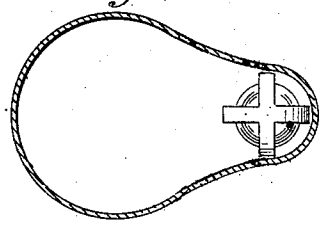


Fig 5



WITNESSES

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UNITED STATES PATENT OFFICE.

JAMES M. HOLLAND, OF WILMINGTON, DELAWARE.

IMPROVEMENT IN HAND-PUMPS.

Specification forming part of Letters Patent No. **206,451**, dated July 30, 1878; application filed June 13, 1878.

To all whom it may concern:

Be it known that I, JAMES M. HOLLAND, of Wilmington, in the county of New Castle and State of Delaware, have invented certain new and useful Improvements in Hand-Pumps; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to that class of hand-pumps which are made use of for washing windows and sprinkling gardens; and the nature thereof consists in certain construction and combination of parts, all of which is hereinafter more fully explained by reference to the drawings, in which—

Figure 1 is a sectional side elevation of the pump. Fig. 2 is a side elévation of the pump. Fig. 3 is a sectional plan of Fig. 1. Fig. 4 is a sectional plan of Fig. 2. Fig. 5 is a cross-section of plunger-rod.

This pump consists in the construction of two cylinders, A and B, which are arranged alongside of each other, as shown in the drawing, and they are attached together by means of the connections a^1 a^2. The cylinder A forms the barrel for a plunger, C, and is arranged at the lower end so as to permit the extension a^3, in connection with the connections a^1 and a^2, to form a chamber, D, when the plate E with valve *e* is in position, and also allows for the second chamber, D′, under the plate E. The valve *e* is of the ordinary ball or flap form. At the bottom of the cylinder B is placed a plate, F, having a valve, *f*. This plate is placed in position before the plate E, as the latter closes all of the bottom in, forming the before-mentioned spaces D and D′.

At the upper end of the cylinder B is the cover G, securely fastened on the cylinder B. This said cover G is provided with a drop-pipe, G^1, which is made to extend down the center of the cylinder B until it is just clear of the guard of the valve *f* when a ball-valve is used, or say within one inch of the plate F with any ordinary valve. This pipe G^1 passes through the cover G, and is provided at its upper end, G^2, with recesses, such as are known in the art, for the purpose of receiving the impress of hose-pipe when the same is wired on. Also, as part of this cover G, or as a separate piece, is the bracket H, supporting the guide H′ for the plunger-rod. This is provided with the guide H′, to act as a stop for the rod C^1, which has stops C^2, and the end of the plunger-rod is provided with a suitable handle. The plunger is arranged to be packed so that the water will not escape; and that water which shall escape and get above the plunger is made to escape through the cutting a^4 at the top of the cylinder A, and is let into the chambers formed by the connections a^1 and a^2. It is then allowed to return to the pail or bucket through holes a^6 at or near the bottom of the said connections a^1 and a^2. In the pump, to enable the water to freely enter the cylinder A when the plunger is drawn out, there are provided either gaps I or perforations, these being beneath the plate E and in the chamber D′ at bottom of pump.

In order to construct the pump as cheaply as possible, the plunger C, rod C^1, and stops C^2 are cast of malleable iron with the handle, and the form (Fig. 5) given illustrates the construction for the purpose of strength.

On the top of the pipe G^1, at G^2, is either screwed or fastened on a piece of hose-pipe having a nozzle, and the operation is simply this, that by working the handle of the rod C^1 the water is taken in and fills the chamber D, and by forcing down the plunger the water is discharged through valve *f* into chamber B, the valve *e* of plate E preventing the return of the water to the pail or bucket, and upon continuing to operate the plunger C up and down the cylinder A the water is made to rise in the cylinder B against the force of the air, which fills the space between the pipe G^1 and interior of the cylinder B. The water is driven up the pipe G^1 and discharged through the end of the same or the hose and nozzle that may be attached. To hold the pump perfectly secure in the pail or bucket, there is provided the loop or eyelet K at the side. Through this is simply placed a strap.

Having thus described the construction and operation of my invention, what I claim as mine, and desire to secure by Letters Patent of the United States, is as follows:

1. In a force-pump, the combination of the cylinder A with cylinder B, having the downward tube G^1 from top G arranged with plates E and F and valves *f* and *e*, operated by a plunger, C, with guide, substantially for the purpose set forth.

2. In a force-pump provided with double cylinders A and B, the escape-water tubes formed by connections a^1 and a^2, substantially as herein shown and described.

3. In a plunger in one cast piece, the piston C, rod C^1, ribbed for strength, stops C^2, and handle, substantially as herein shown and described.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

JAMES M. HOLLAND.

Witnesses:
BENJAMIN C. POLE,
JOHN C. COLE.