

# B. Holly, Pump Lift.

N<sup>o</sup> 17,820.

Patented July 14, 1857.

Fig: I.

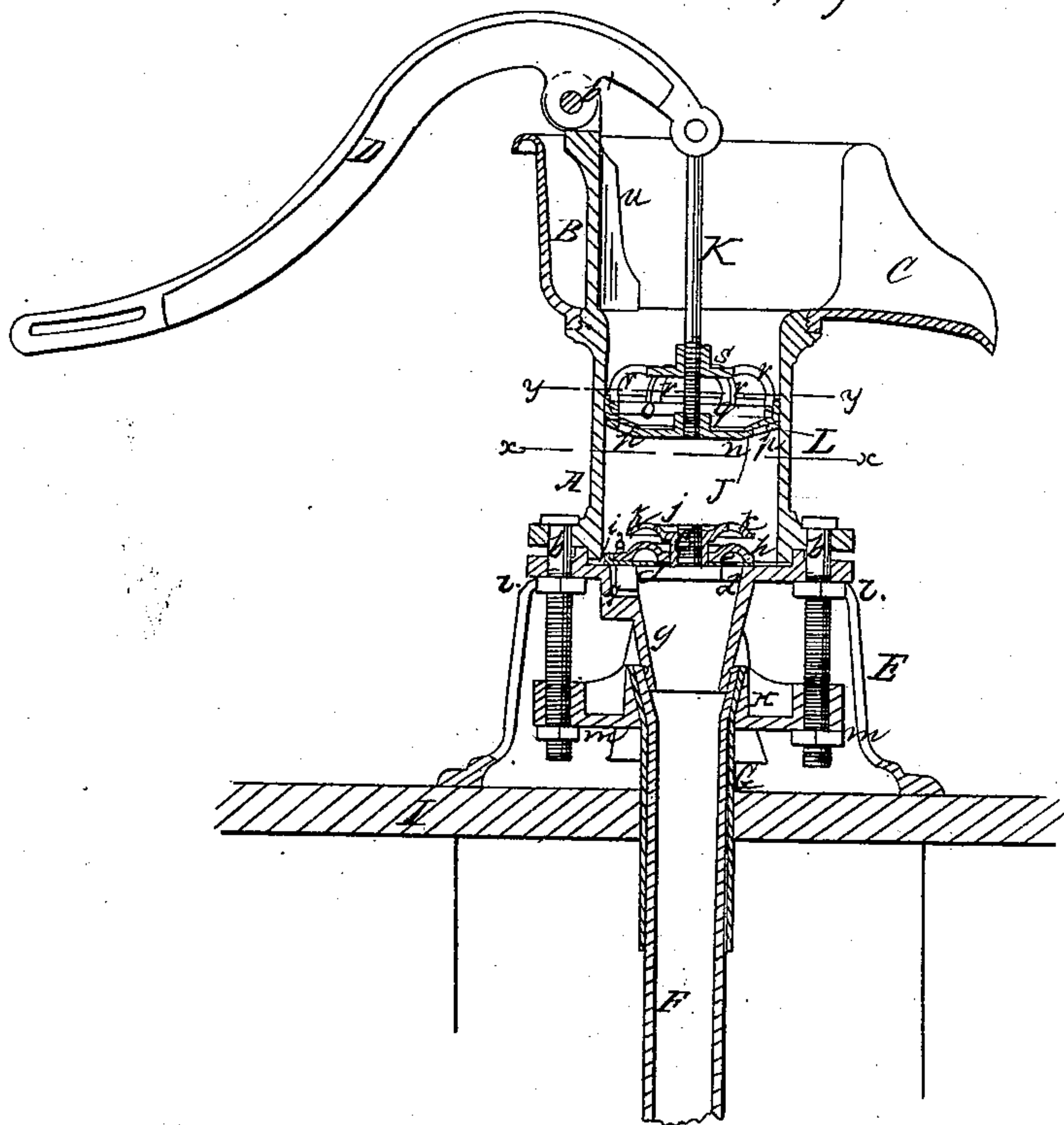


Fig: 3.

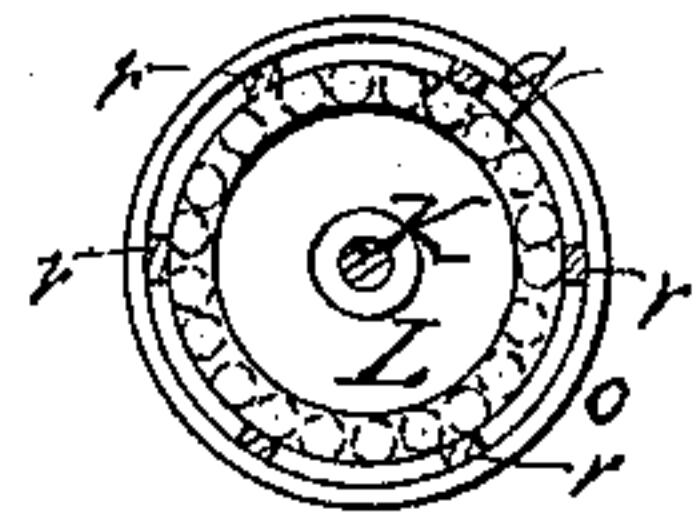


Fig: 4.

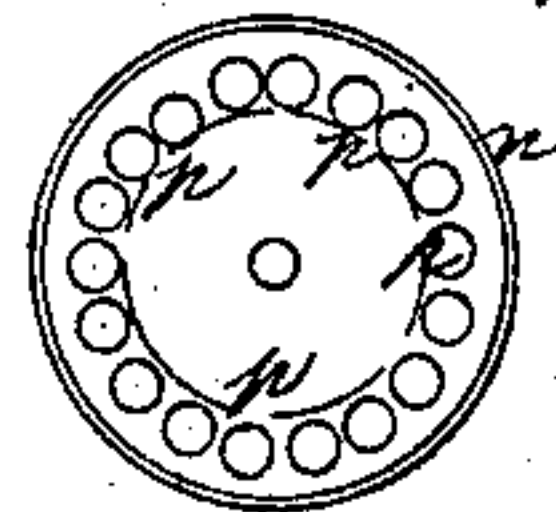
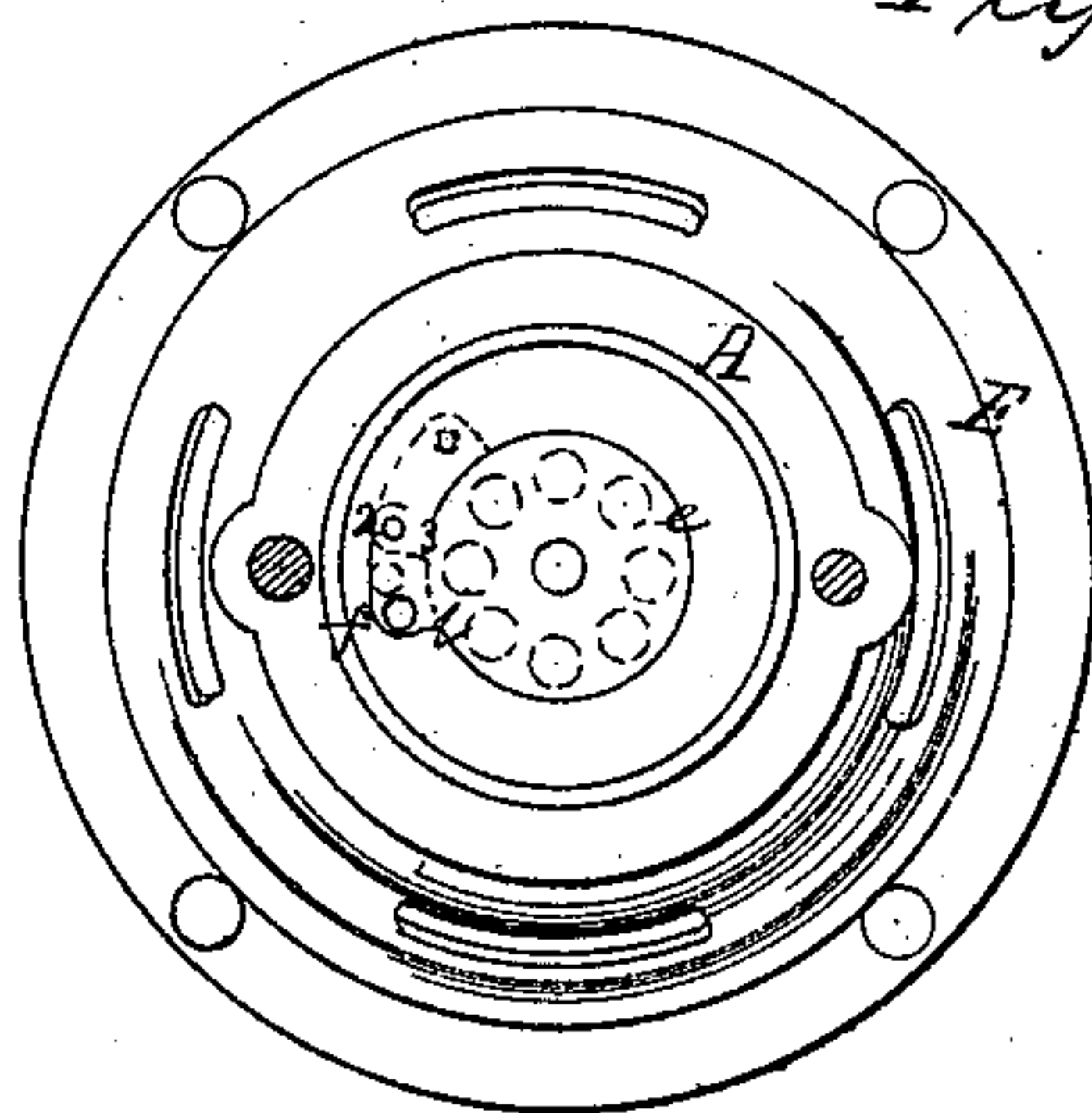


Fig: 2.





# UNITED STATES PATENT OFFICE.

BIRDSILL HOLLY, OF SENECA FALLS, NEW YORK, ASSIGNOR TO SILSBY, MYNDERSE AND SHOEMAKER, OF SAME PLACE.

## PUMP.

Specification of Letters Patent No. 17,820, dated July 14, 1857.

*To all whom it may concern:*

Be it known that I, BIRDSILL HOLLY, of Seneca Falls, in the county of Seneca and State of New York, have invented a new and Improved Pump; 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 which—

Figure 1 is a vertical central section of my improvement. Fig. 2 is a horizontal section of the same, taken in the line (x) (x) of Fig. 1. Fig. 3 is a horizontal section of the piston, taken in the line (y) (y) of Fig. 1. Fig. 4 is an inverted plan of the same.

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

This invention relates to certain improvements in lifting-pumps, and consists in the peculiar means employed for allowing, when necessary, the waste or surplus water to escape from the cylinder.

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

A, represents the pump cylinder which may be constructed of cast metal and of suitable dimensions. On the upper end of this cylinder, a bowl or dish-shaped flanch B is screwed, one side of which has a spout C. The flanch B is also constructed of cast metal. On the upper end of the cylinder A, an upright projection (a) is formed, through the upper end of which the fulcrum pin (b<sup>1</sup>) of the handle D passes. The projection (a) is cast with the cylinder A.

The lower end of the cylinder A, is secured by bolts (b) (b) to a hollow base E, which is also constructed of cast metal. At the center of the top of the base E, a screw (c) is secured, and the top of the base, around the screw (c), is perforated with holes (d), as seen in Fig. 1, and also in dotted lines in Fig. 2. These holes (d) are covered by a circular piece of leather (e), which has a projecting flap (f) at one part of it. This flap (f) has two holes (1) (2) made through it, and a pin (3), attached to the top of the base, is fitted in either of these holes. When the pin (3) is fitted in hole (1) a passage (4) is exposed, said passage leading into the suction flanch or socket (g); and when the pin (3) is fitted in the hole (2) the orifice of said passage (4) is closed. This will be understood by referring to Fig. 2, in which the flap (f), as shown

in black, covers the orifice of passage (4), but exposes it when in the position as shown in red.

On the upper surface of the leather (e), an annular chamber (h) is placed, the screw (c) passing through the center. The inner and outer edges of this chamber rest or bear snugly on the leather (e), as shown clearly in Fig. 1. This chamber (h) has a projecting flanch (i) formed on it, said flanch being also provided with two holes through either of which the pin (3) passes.

On the screw (c) a circular plate (j) is screwed. This plate is perforated with holes (k) and its outer part is curved, corresponding to the form of the upper surface of the chamber (h); see Fig. 1.

The flanch or socket (g), at the under side of the top plate of the base E, is cast with the base. This flanch or socket (g) is of conical form as shown clearly in Fig. 1. And the upper end of the suction or eduction pipe F is fitted over the flanch or socket (g); the orifice of pipe F being made of flaring or bell-shape to correspond with the form of the flanch or socket. The pipe F is as usual constructed of lead, and a brass or iron tube G is fitted over the upper end of the lead pipe F; the upper end of the tube G being made of bell-form corresponding to the upper end of pipe F.

H, represents a cast metal bar having a conical opening made through it to allow the pipe F and tube G to pass through. And through the ends of the bar H, the bolts (b) (b) pass; said bolts have each two nuts (l) (m) on them; the nuts (l) secure the cylinder A to the base E, and the nuts (m), when screwed up tightly against the under side of the bar H, cause the conical opening in said bar to bind the upper end of the pipe F snugly around the socket (g). The base E is secured by screws to a proper platform I.

J, represents the piston which is secured to the rod K, the upper end of which rod is attached to the handle D. The piston is formed of two parts (n) (o), both of which are constructed of metal, and the part (n) is a circular plate of slightly concave or dish form and perforated with holes (p) near its edge or periphery, as shown in Figs. 1 and 4. The edge of the plate (n) is bent upward, as shown in Fig. 1. The other part (o) of the piston is formed of a ring (q) connected by arms (r) to a circular plate (s), through the



center of which the piston rod K passes. The lower end of the piston rod has a screw-thread formed on it, and the plate or part (n) is screwed thereon. L, represents an  
5 annular piece of leather, fitted between the outer part of the plate (n) and the ring (o), and firmly secured between them by screwing up the plate (n) sufficiently on the lower end of the rod K. The outer part of the  
10 leather ring L is bent upward and forms the packing of the piston. The inner end of the leather extends beyond and consequently covers the holes (p) in the plate (n) and forms the valve of the piston.

15 The operation of the pump—that is, the lifting and discharging of the water—requires no description, as it is precisely the same as that of all simple lifting-pumps.

By adjusting the leather (e) so that the  
20 passage (4) is exposed, the waste or surplus water is allowed to escape from the cylinder A, into the suction pipe F, and the pump cannot be frozen up during the winter. In summer, the leather is so adjusted as to

cover the passage (4) so that the packing of 25 the valve may not shrink. The chamber (h) serves as a protection to the leather (e) and prevents the edges of the leather from being forced through the holes (d) by atmospheric pressure above as the water descends 30 in pipe F and produces a vacuum therein. The chamber (h) effectually prevents this.

Having thus described my invention, what I claim as new and desire to secure by Letters 35 Patent, is—

The leather (e) placed over the perforations (d) in the top of the base E, and the chamber (h) which is placed on the leather; said leather being provided with a flanch (f) provided with holes (1) (2), either of which 40 is fitted on the pin (3), for the purpose of exposing or closing the passage (4), substantially as described for the purpose specified.

BIRDSILL HOLLY.

Witnesses:

GEO. W. MEAD,  
N. BAKER.