

UNITED STATES PATENT OFFICE.

BIRDSILL HOLLY, OF LOCKPORT, NEW YORK.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 45,040, dated November 15, 1864; antedated January 17, 1864.

To all whom it may concern:

Be it known that I, BIRDSILL HOLLY, of Lockport, in the county of Niagara and State of New York, have invented certain new and useful Improvements in Revolving Tight-Top Pumps; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

Figure 1 is a central vertical section of my improved pump; Fig. 2, a perspective view of the turning top detached.

Like letters of reference indicate corresponding parts in both figures.

My invention consists of a revolving tight top, resting in the pump-stock, with the lever working in a tight joint, the top being forced closely down in its seat in the stock by means of an inclined set-screw or equivalent, and its shank being centrally supported by means of open spurs or projections, that allow the free upward flow of water.

The pump consists, essentially, of two principal parts—a stock, A, of cylindrical form from bottom to top, provided with the usual spout *a*, and a revolving top, B, fitting in its open mouth, with the following peculiarities of construction: It is made hollow, the upper part, *b*, above the stock, being enlarged and preferably, though not necessarily, of the ornamental form clearly represented in Fig. 2. Within the stock the top inclines or narrows as it extends downward to a suitable distance, as indicated at *d*, said incline packing at the top on the similarly-shaped interior of the stock, when an enlarged rim, *f*, is formed, filling nearly the whole diameter of the interior of the cylinder, and having its upper surface inclined outward and downward, as indicated in Fig. 1. The top is held in place and tightened by means of an inclined screw or screws, *k*, or equivalent, passing through the stock and bearing on the top of the rim. Below the rim *f* the shank *g* is contracted, being only of sufficient size to allow the piston-rod to play freely within at all positions. At the bottom of the shank, which is of sufficient length to form a proper bearing, are a suitable number of radial spurs or projections, *h h*, of such length as to reach out and bear against the side of the cylinder. The incline *d* of the top is provided with an opening, *i*, for the purpose

of connecting the rod with the lever without detaching the parts. Above the stock the revolving top is provided on one side with a projection forming two sides or shoulders, *l l*, between which fits and works tightly a rounded bearing, *m*, of the operating-lever C, having a central pivot, *n*, forming the joint. By being made of this form the round *m* fits closely between the shoulders and may be very thin, obviating the use of packing, which is necessary in ordinary arrangements. An arm, *p*, projects inward from the bearing of the lever and has joined to it, centrally, the ordinary piston-rod D, as indicated clearly in Fig. 1.

The top thus arranged and fitting closely in the stock always prevents the water from overflowing by insulating the same. At the same time, by being capable of revolving, the operating-lever can be turned to any position desired, so as to adapt the pump to any situation or any circumstances in which it may be placed.

I am aware that open-top pumps have before been employed in which the position of the lever can be changed by turning an annular ring, with which it is connected inside the mouth; but such an arrangement does not meet the scope of my invention, which consists in a revolving tight-top pump having the operating-lever adjustable to any desired position.

By means of the rim *f* and inclined-screw *k*, or equivalent, bearing thereon, the top is forced down into the mouth of the stock with any desired degree of pressure, so as to produce a water-tight joint at the junction of these two principal parts. The screw also serves as the guide to hold the top in place, at the same time allowing it a free turning movement. A horizontal screw or pin would not answer these purposes, as it could not tighten the joint.

The spurs or projections *h h* at the bottom of the shank support the revolving top in a central position, which is necessary for its easy action in revolving, and also to allow the working of the piston-rod, and at the same time, by leaving the space open between them, allow the free passage of the water up outside to the discharge-spout *a*.

The joint of the operating-lever with the revolving top being tight by the means de-

scribed, no water can escape under any circumstances under which it may be used; and this peculiarity, together with that of the projecting arm P for the connecting of the piston-rod, renders it perfectly adapted to this particular kind of revolving tight-top pump, and in no other relation that I can conceive.

I do not claim, broadly, turning or adjusting the operating-lever to any position, as I am aware that such an effect has before been accomplished; but

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A hollow, revolving tight top, B, having the operating-lever secured thereto, in combination with an open pump-stock, A, substantially as herein described.

2. In combination with the foregoing, securing and tightening the revolving top in its seat, and still allowing it a free revolving motion by means of the rim *f* and inclined bear-

ing-screw *k*, or equivalent, arranged, combined, and operating substantially as herein specified.

3. In combination with the revolving top B and stock A, the radial spurs or projections *h h* for sustaining said revolving top in a central position and allowing the free passage of water to the discharge-spout, substantially as herein set forth.

4. In combination with the revolving top B, the operating-lever C, forming a tight joint therein by means of the thin, rounded bearing *m* and shoulders *l l*, arranged and operating substantially as herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

BIRDSILL HOLLY.

Witnesses:

J. R. CLAPP,

T. R. BAILEY, Jr.