(No Model.)

N. SMITH.

LIFT PUMP.

No. 436,548. Patented Sept. 16, 1890.

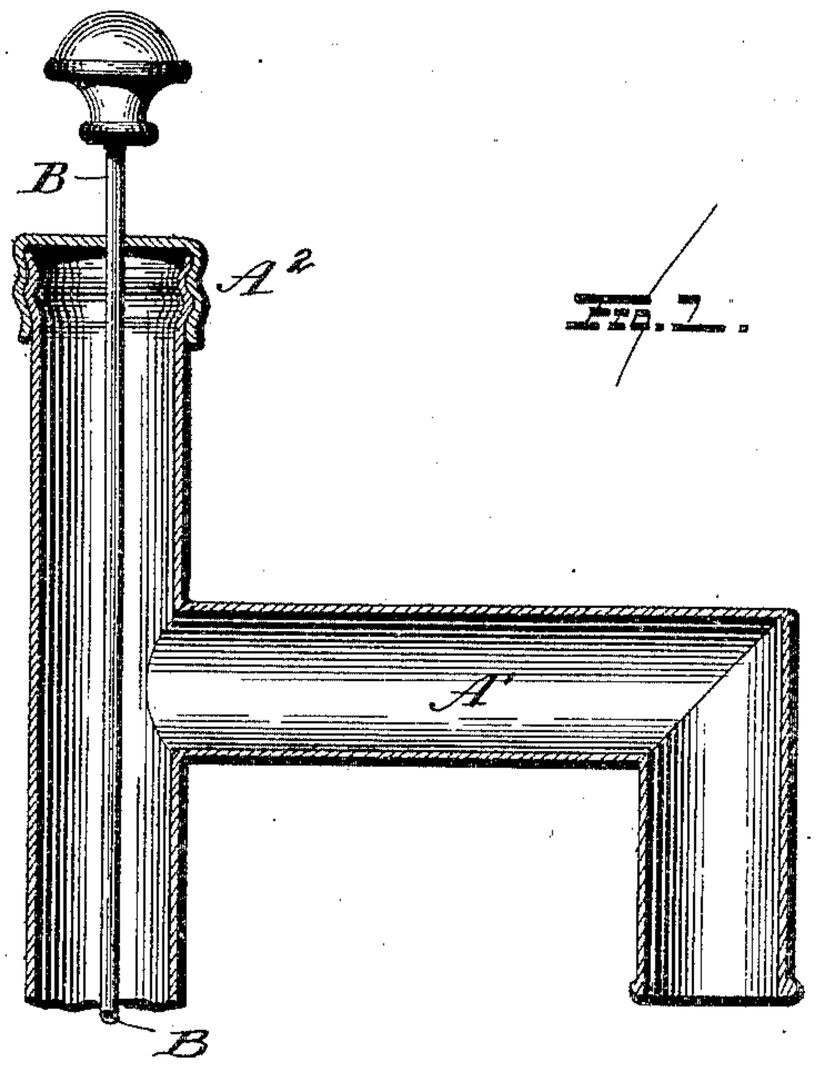
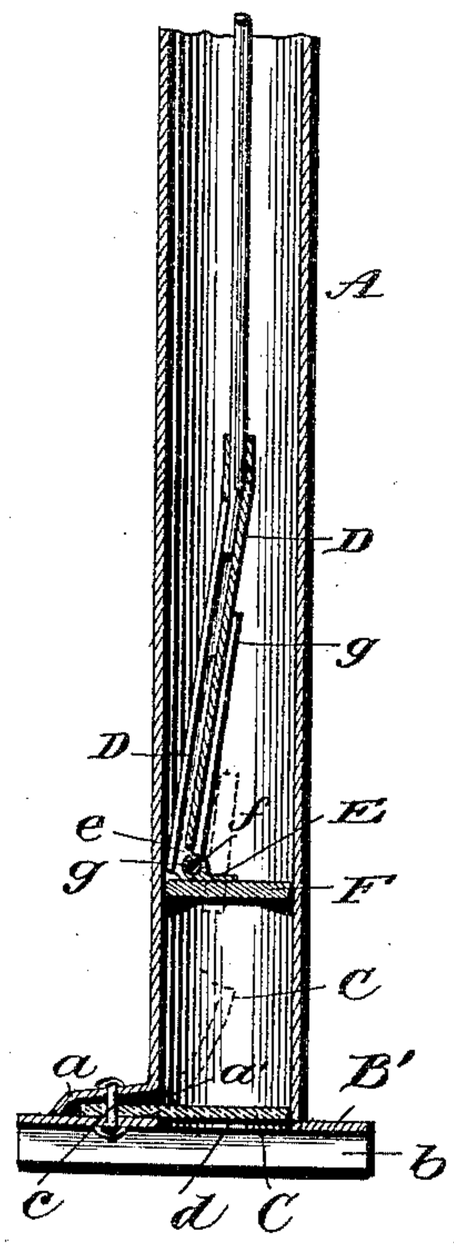


Fig. 1.



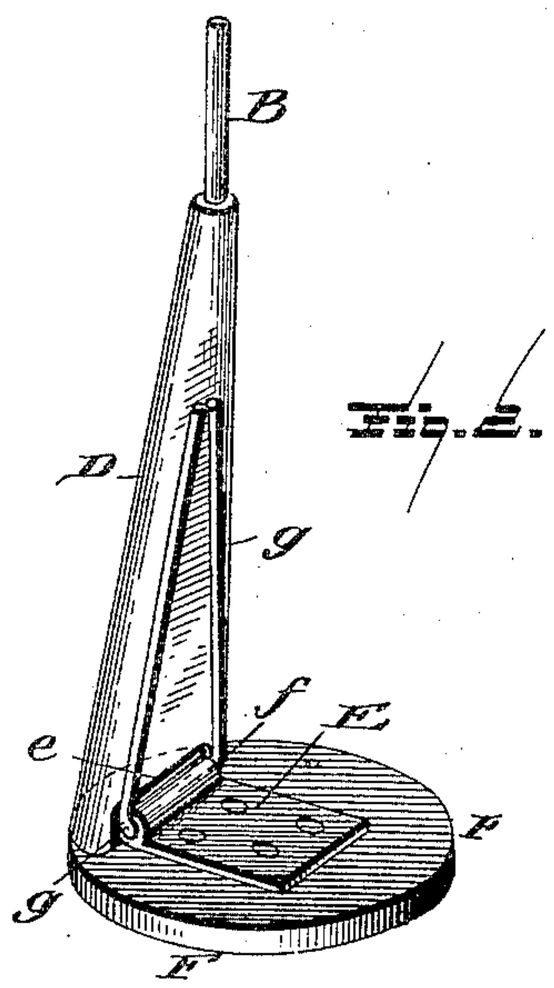


Fig. 2.

Witnesses
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UNITED STATES PATENT OFFICE.

NICHOLAS SMITH, OF LOGANSPORT, INDIANA, ASSIGNOR TO CATHERINE A. P. SMITH, OF SAME PLACE.

LIFT-PUMP.

SPECIFICATION forming part of Letters Patent No. 436,548, dated September 16, 1890.

Application filed May 12, 1890. Serial No. 351,467. (No model.)

To all whom it may concern:

Be it known that I, NICHOLAS SMITH, a citizen of the United States, residing at Logansport, in the county of Cass, State of Indiana, have invented certain new and useful Improvements in Lift-Pumps, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in lift-pumps of that class designed to be used for the purpose of emptying barrels, casks, and the like; and it has for its object to provide a simple, cheap, and efficient device of this character wherein the valve shall occupy as little space as possible and offer a minimum of resistance to the passage of the fluid. I dispense with the ball-valves heretofore employed in this class of pumps, and which soon become worn so as not to fully close the opening.

Other objects and advantages of the invention will appear in the following description, and the novel features thereof will be particularly pointed out in the claim.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a central longitudinal section of a pump constructed in accordance with my invention, and Fig. 2 is an enlarged perspective view of the plunger and its valve removed.

Like letters refer to like parts in both the figures of the drawings.

Referring now to the details of the drawings by letter, A designates the barrel or cylinder provided with discharge-spout A′ and at its outer end with a removable cap A^2, having an aperture for the passage of the plunger-rod B, as shown in Fig. 1. The lower end of the cylinder or barrel A is connected in any suitable manner to a base-piece B′, which has depending side flanges *b*, designed to rest upon the bottom of the barrel or cask and provide a space beneath the top of the base-piece for the ingress of the liquid, it being understood that there is an unobstructed passage from end to end between the side flanges *b*, as shown in the drawings, Fig. 1. The lower end of the cylinder at one side is extended, as shown at *a*, to provide a space *a′* between the same and the upper face of the base-piece B′, and in which space is located an extension of the flap-valve C, being secured by the vertical securing means, as the rivet C, which secures said extension to the base-piece, as clearly illustrated in Fig. 1, the said flap-valve being designed to snugly fit and close the opening *d* in the top of the base-piece coincident with the bottom of the barrel or cylinder A. A sufficient play is provided and space allowed above the flap-valve near its connection with the cylinder and the base-piece to permit it to assume the position shown by dotted lines when the plunger is raised. The plunger-rod B is connected at its lower end in any suitable manner to a valve-support D, the upper end of which is arranged centrally within the cylinder or barrel A, and the body of which is inclined toward the wall of the cylinder, and upon its inner face is provided with an aperture *e*, as shown best in Fig. 2, for the reception of the knuckle *f*, which is formed on a plate E, which is secured to the upper face of the valve F. The valve F is, through the medium of this plate and knuckle, hinged or pivotally connected with the valve-support D by means of the wire G, which is substantially triangular in form, with its base portion passed through the bore of the knuckle, and on which the said valve turns with ease.

The valve-support D may be formed in any suitable manner; but I prefer to make it of sheet metal, bent into the form shown, for lightness and strength combined.

The operation is simple and will be readily understood. In the downward movement of the plunger the valve F assumes a vertical position, as indicated by dotted lines in Fig. 1, offering but little resistance to the downward movement. The flap-valve operates in the usual manner, as illustrated in Fig. 1. I have produced satisfactory results without the employment of the flap-valve.

What I claim is—

The combination, with the cylinder and the

centrally-arranged plunger-rod, of the sheet-metal support D, bent around the lower end of the rod, the valve F, the plate E, secured to the upper face of the valve and formed with a knuckle working in an aperture in the lower end of the support, and triangular wire *g*, having its horizontal portion passed loosely through the bore of the knuckle and its ends secured to the support B, substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

NICHOLAS SMITH.

Witnesses:

JNO. F. JOHNSON,

W. E. LYBROOK.