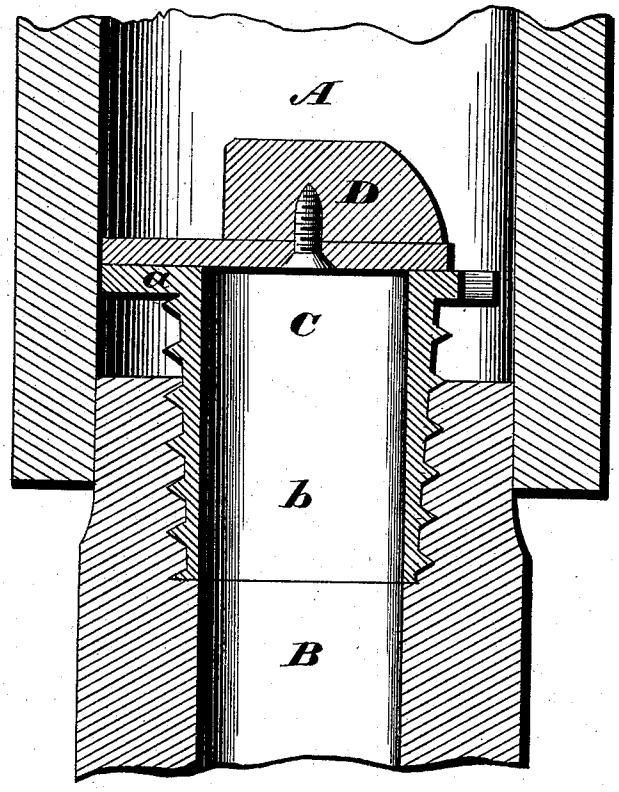
(No Model.)

W. P. OLDEN.

PUMP VALVE.

No. 270,102. Patented Jan. 2, 1883.

Fig. 1.



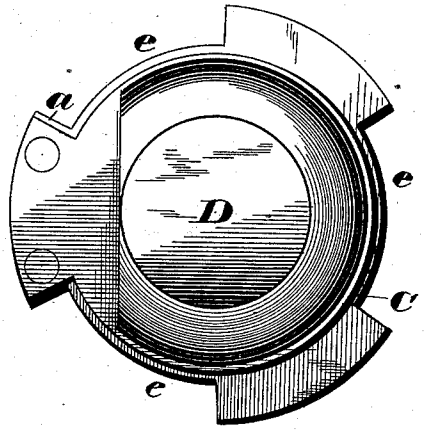


Fig. 2.

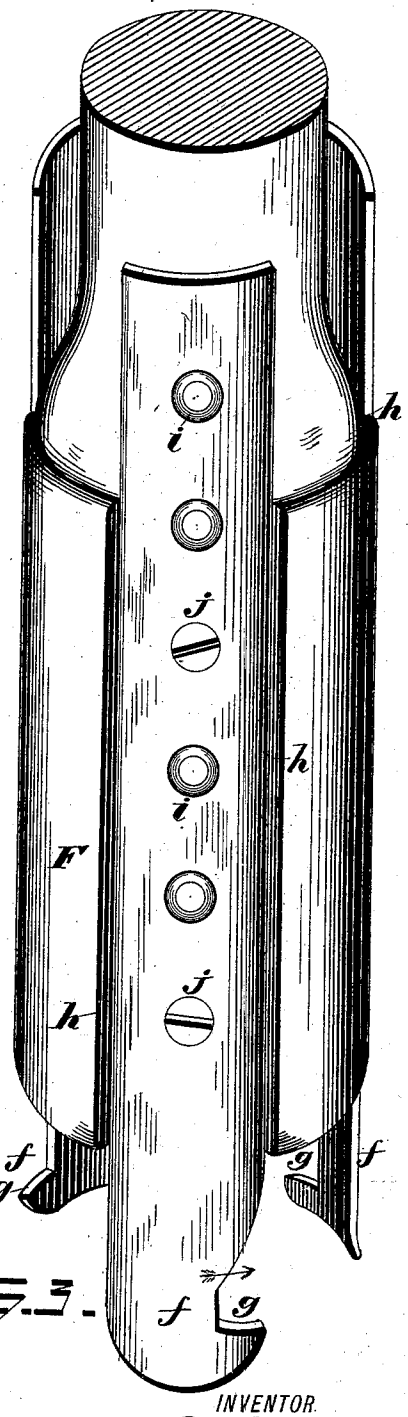


Fig. 3.

WITNESSES

S. G. Nottingham

Geo. W. Seymour.

INVENTOR.

Wm P. Olden.

By his Attorney Seymour.

UNITED STATES PATENT OFFICE.

WILLIAM P. OLDEN, OF SPRINGFIELD, ILLINOIS.

PUMP-VALVE.

SPECIFICATION forming part of Letters Patent No. 270,102, dated January 2, 1883.

Application filed April 26, 1882. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. OLDEN, of Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Pump-Valves; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to an improvement in check-valves for pumps.

The object of my invention is to provide valve that can be taken out and replaced at pleasure, and the means for securing the same in and removing it from position without disturbing the platform or tearing up the pump and pump-tube to get at the valve; and with these ends in view my invention consists in certain details of construction and combinations of parts, as will be more fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a sectional view, showing my improved valve in position in a pump-tube. Fig. 2 is a plan view of the valve, and Fig. 3 is a perspective view of the device for securing the valve and valve-seat in and removing it from position.

A represents the pump; B, the lower section or tube thereof; C, the valve-seat; and D, the valve.

The metallic valve-seat C consists of the horizontal portion *a*, to which the valve is secured, and the screw-threaded shank or body portion *b*, by means of which the valve is secured in position. The size of the valve and seat, when held in their proper positions, is such that they will freely pass through the bore of the pump without meeting any obstruction, which would stop the same before its position has been reached. The shank or body portion of the seat is about the same diameter as the bore of the section in which the valve-seat rests, and when this point is reached the downward progress of the seat and valve is stopped. The body or shank of the seat I prefer to make tapering, so as to tighten as it is screwed in the wood. I prefer to have the threads far apart, and of such form or construction that they will not destroy or cut away the section in which they rest, and also to enable them to cut their way and take hold, like a wood-screw, and be readily secured in position without the necessity of providing for the same beforehand. This construction, however, is intended particularly when the pump-sections are made of wood; but when the pump is so constructed that the seat will rest on or against a metallic portion thereof the shank can be provided with threads, and constructed as best suited for the purpose. The horizontal portion of the seat-valve proper is formed approximately round, and is provided on its periphery at suitable distance apart with two or more notches or open slots, *e*, in which the ends of the engaging-fingers of the rod F rest.

The valve B is an ordinary leather or other suitable flexible check-valve, weighted or not, as desired, and rigidly secured to the horizontal portion of the seat by rivets or screws.

The rod F can be made of wood or other suitable material, and is provided at its lower end with as many metallic fingers *f* as there are open slots *e* in the valve-seat proper. Each finger *f* is provided with a hook, *g*, which latter is adapted to engage the side of the projection between two of the open slots *e* and hold the rod F in position until the valve-seat has been removed from the pump. The slots *e* in the horizontal portion of the valve-seat are arranged equidistant apart, and the fingers *f* on the rod F are also placed equidistant apart, and are adapted to register with the said slots without the necessity of adjusting the parts to any one particular relative position. The lower end of the rod F is considerably enlarged, and is of size sufficient to enable the same to slide or move in the bore of the pump without too much freedom. At suitable distance apart in the periphery of this enlarged portion of the rod F oblong slots *h* are formed, in which the metallic fingers *f* are secured. These slots *h* are sufficiently deep to enable the outer faces of the fingers *f* to rest flush with the outer surface of periphery of the enlarged portion of the rod, and they are secured therein by screws. The fingers *f* are of any suitable length, and are provided throughout the greater portion of their length with screw-holes *i* for the passage of screws *j*. These screw-holes are for the purpose of enabling the fingers to be let out in

case anything should fall on the valve that would prevent the hooks on the fingers from engaging the valve-seat when they are in the position shown in the drawings. The rod F is long enough to reach from the top of the pump down to the valve, and is provided on its upper and outer end with a handle or any suitable device by which a rotary motion can be imparted thereto.

When it is desired to remove the valve from position it is simply necessary to remove the handle and bucket and take off the cap-piece of the pump. The rod is then lowered into the pump, and when the valve has been reached by partly turning the rod F the fingers *f* fall into the slot *e*.

It will be noticed that the hooks *g* on the fingers *f* are all on the same side, and when the said fingers have fallen into the said slot by simply giving the rod a part turn in the direction indicated by the arrow the hooks engage the projecting portion of the seat between the slots and hold the rod and valve-seat together. Now, by continuing to turn in the direction of the arrows, the valve is unscrewed from its normal position, and when released from the tube is firmly held by the fingers *f* and can be withdrawn for repairs.

When it is desired to replace a valve in position in the pump the valve-seat is secured to the fingers of the rod and lowered into the pump. When the valve has reached its destination the rod F is turned in the opposite direction from that last described, which motion secures the seat and valve in position. While securing the valve in position it is not necessary that the seat be held by the fingers *f*, as in the former case, for in this instance the weight of the rod is sufficient to hold the parts together, while in the former it is necessary for the hooks of the fingers to engage the seat for the purpose of lifting the same.

The construction of parts above described is more particularly adapted for wooden pumps, but can be modified so as to be used with any construction of pump where the check-valve can be reached in the manner above described.

Instead of making the fingers rigid, as above described, they can be made of spring metal of any suitable construction, adapted to be forced apart, and hold the seat therein with or without the aid of the hooks above described.

My invention is simple in construction, is efficient and durable in use, can be manufactured at a small initial cost, while the operation necessary to remove or place a valve in position is so simple that skilled labor to accomplish the same is unnecessary.

It is evident that slight changes in the construction and operation of my improvements can be resorted to without departing from the spirit of my invention; and here I would have it understood that I do not limit myself to the exact construction of parts shown and described, but consider myself at liberty to make such changes as come within the spirit and scope of my invention.

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

1. A valve-seat provided with a screw-threaded body or shank portion, by means of which the valve is held in position, and a horizontal portion, by means of which the valve is placed in and removed from position.

2. The combination, with a valve-seat the body or shank of which is screw-threaded, and a horizontal portion on which the valve is secured, of a flexible valve riveted or otherwise secured to horizontal portion of the valve-seat, substantially as set forth.

3. The combination, with a valve-seat the body or shank of which is screw-threaded for the purpose of holding it in position, and a horizontal portion the periphery of which is slotted, of a check-valve riveted or otherwise secured to the horizontal portion of the seat, and means for engaging the said slotted horizontal portion for the purpose of placing the valve-seat in and removing it from position in the pump.

4. A device for removing a pump-valve consisting of the combination, with a rod, of adjustable fingers secured thereto, substantially as set forth.

5. A device for placing or displacing a pump-valve, consisting of a rod having depending fingers provided with hooks, substantially as set forth.

6. The combination, with a rod having an enlarged extremity, of fingers having hooked ends and provided with a series of perforations, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM PARKER OLDEN.

Witnesses:
VALENTINE ALLEN,
H. H. ROGERS.