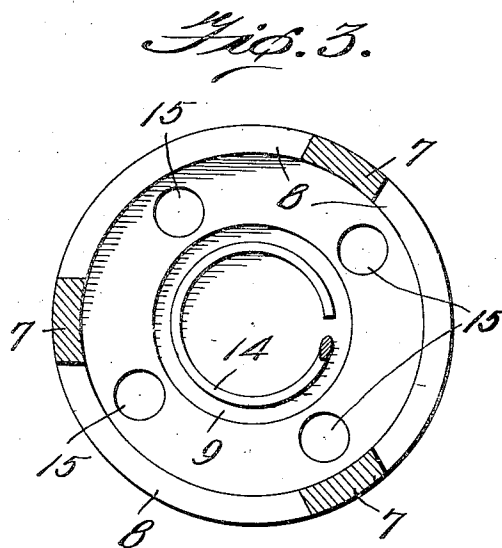
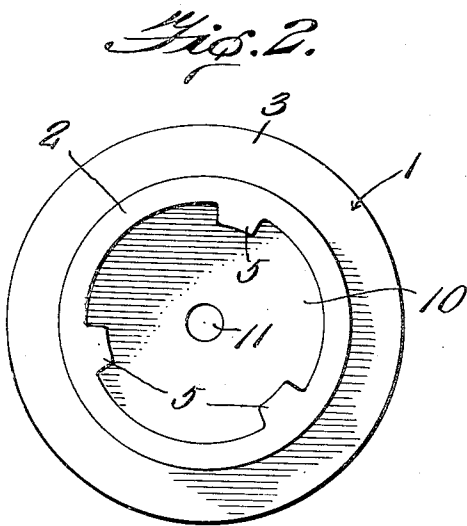
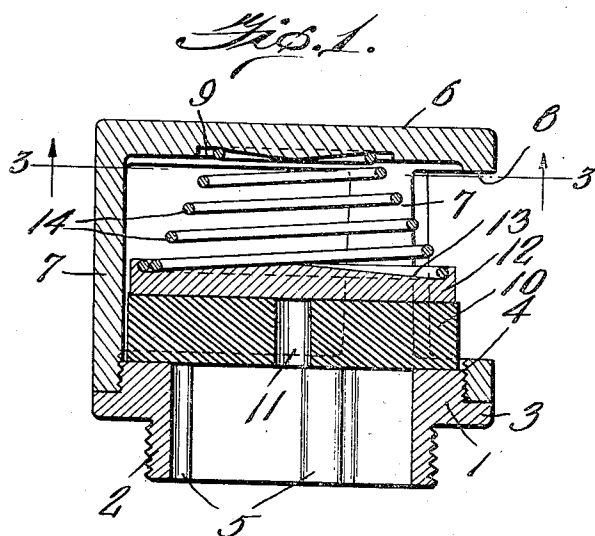


H. T. RAUB.
CHECK VALVE.
APPLICATION FILED SEPT. 26, 1916.

1,238,334.

Patented Aug. 28, 1917.



WITNESSES

E. M. Offutt,
H. F. Kellogg.

INVENTOR

Henry T. Raub,

BY

Richard E. Owen,

ATTORNEY

UNITED STATES PATENT OFFICE.

HENRY T. RAUB, OF SOUTH BETHLEHEM, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO HARVEY M. UEBERROTH, OF SOUTH BETHLEHEM, PENNSYLVANIA.

CHECK-VALVE.

1,238,334.

Specification of Letters Patent. Patented Aug. 28, 1917.

Application filed September 26, 1916. Serial No. 122,281.

To all whom it may concern:

Be it known, that I, HENRY T. RAUB, a citizen of the United States, residing at South Bethlehem, in the county of Northampton and State of Pennsylvania, have invented certain new and useful Improvements in Check-Valves, of which the following is a specification.

My invention relates to improvements in check valves, and the invention has more especial reference to an improved check valve for use upon pumps.

The invention has for its principal object to provide a check valve which will operate freely at all times, due to the absence of friction or other means of retarding movement of the valve and other movable elements of the device, thus preventing binding of the valve upon its seat.

Among the aims and objects of the invention may be recited, the provision of a valve of the character mentioned with a view to compactness, and in which the number of parts are few, the construction simple, the cost of production small, and efficiency and operation high.

The invention also includes means, whereby the valve spring will be properly held in position with relation to the valve and bonnet, consequently preventing undue lateral movement or accidental displacement thereof; the spring being of such formation as will permit ample movement of the valve from its seat.

Still further, the construction embodies a novel bonnet, the supporting standards of which will serve as efficient guides for the valve during movement thereof.

The improvements in the details and arrangements of parts will be apparent from an inspection of the accompanying drawing, in connection with the specific description hereinafter contained, and wherein the preferred embodiment of the invention is disclosed for the purpose of imparting a full understanding of the invention.

In the drawing:

Figure 1 is a vertical section of the improved check valve,

Fig. 2 is a bottom plan thereof, and

Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 1 looking in the direction of the arrows.

Referring more specifically to the drawing, wherein like reference numerals design-

nate corresponding parts in the views, the construction embodies a base ring 1, the lower portion of which is reduced and is externally screw threaded, as at 2, in order that the same may be engaged with similar threads in the pipe or opening into a pump, while the body portion thereof is provided with an annular shoulder 3 and the remainder of the ring, that is, the upper portion thereof is externally screw threaded, as indicated by the numeral 4. To provide for means whereby the ring 1 may be readily turned into engagement with a pump, a plurality of vertically disposed spaced lugs 5 are arranged within the ring and are adapted to be engaged by a suitable wrench.

A bonnet 6 having a plurality of spaced apart supporting standards 7 and an internally threaded base ring 8, is turned into engagement with the threaded upper portion of the ring 1 and provides for means whereby the valve, which will be presently described, will be prevented from having undue movement. The under face of the bonnet top is recessed, as at 9 and is adapted to receive valve retaining means.

A valve disk 10 is arranged upon the upper end of the ring or seat 1 and has formed concentrically thereof an opening 11, which opening will prevent the sagging of the disk when in operation. To retain the valve disk 10 upon its seat, a follower plate 12 is arranged thereupon and is provided with a recessed portion 13, into which there is placed a helical spring 14, the upper convolution of which is received within the recess 9 formed in the bonnet top.

In order that the bonnet 6 might be readily turned into engagement with the ring 1 a plurality of recesses or holes are formed in the top thereof and are adapted to be engaged by a spanner wrench or other similar tool.

From the foregoing it will be appreciated that I have provided a check valve which is of exceedingly simple construction and which by its simple and compact construction will permit the valve disk to be moved freely from the seat, since, no friction, to any material extent, is applied to the movable parts thereof. Furthermore, by providing a helical or conical spring, the valve will be permitted to open full when the pump to which it is attached, is in operation. It will also be understood that the

bonnet supporting standards 7 will not only strengthen the bonnet but will also serve in the capacity of guides for the valve disk, the valve follower plate and the helical spring to operate without the necessity of the usual valve stem. Should any of the various elements of the construction become worn or broken, they may be readily replaced in a minimum amount of time.

- 10 In providing a check valve which is entirely free of bolts or screws whereby to fasten the various parts thereof, it will be evident, that the simplicity of the construction reduces the wear and tear thereupon, materially.

15 I am aware that changes may be made in the various arrangements and combinations of parts as well as in the detail of the construction of the device without departing from the scope of the invention, as defined in the appended claims. Hence, I do not limit my invention to the exact arrangements and combinations of the devices and parts, as illustrated in the accompanying drawing, and as described in the accompanying specification, nor do I confine myself to the exact details of the constructions of the said parts.

I claim:

- 30 1. A check valve, including a hollow annular screw threaded seat, a bonnet having a plurality of spaced supporting standards and an internally threaded base ring engaged with the screw threaded seat, a valve disk arranged upon said seat, a complementary follower plate arranged upon the valve disk, and a helical spring engaged with the bonnet and the follower plate for normally maintaining the valve disk upon its seat, said standards serving as guides for the valve disk and follower plate during movement thereof.

- 40 2. A check valve, including a hollow annular screw threaded valve seat, a bonnet

having a top and a plurality of spaced supporting standards and an internally screw threaded base ring engaged with the screw threaded valve seat, a recess being formed in the under face of the bonnet top, a valve disk arranged upon the valve seat, a complementary follower plate having a recess formed in the upper face and arranged upon the valve disk, and a helical spring interposed between the bonnet and the follower plate, the ends thereof being received in the recesses formed in the bonnet top and the follower plate for normally retaining the valve disk upon its seat, the standards serving as guides for the valve disk and follower plate during movement thereof.

3. A check valve, comprising a base ring having an externally screw threaded extension whereby the same may be connected in operative position, an annular shoulder formed upon the base ring, a screw threaded portion arranged upon the upper extremity of the ring, a bonnet having an internally screw threaded base ring and a plurality of spaced supporting standards engaged with said screw threaded upper extremity of the base ring, a recess formed in the under face of the bonnet top, a valve disk seated upon the upper end of the base ring, a complementary follower plate arranged upon the valve disk, a helical spring arranged upon said follower plate and having its upper end engaged with the recessed bonnet top for normally maintaining the valve disk seated, said standards serving as guides for the valve disk and follower plate during movement thereof.

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

HENRY T. RAUB.

Witnesses:

PETER A. MILLER,
QUINTUS RAUB.