J. W. BRUNSKILL.

CHECK VALVE.

APPLICATION FILED NOV. 22, 1915.

1,177,011. Patented Mar. 28, 1916.

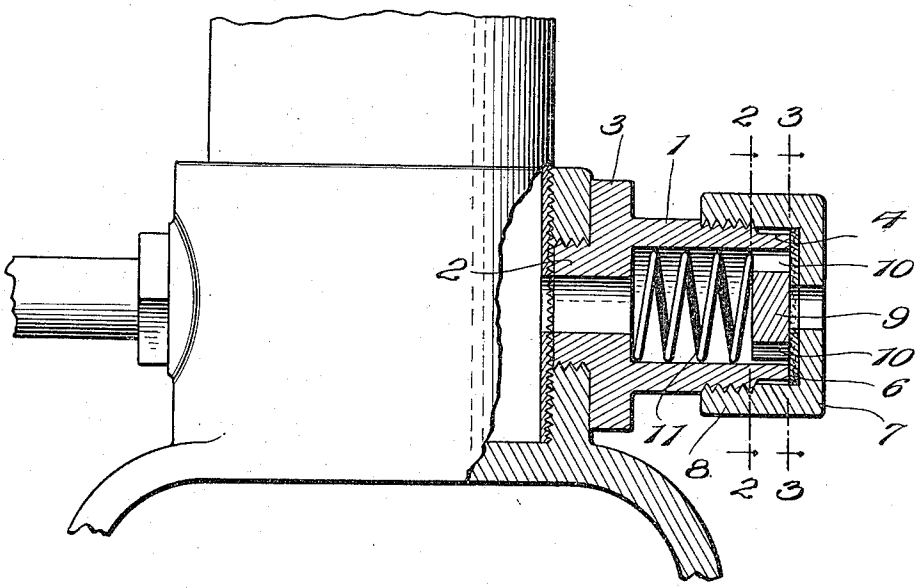


FIG. 1

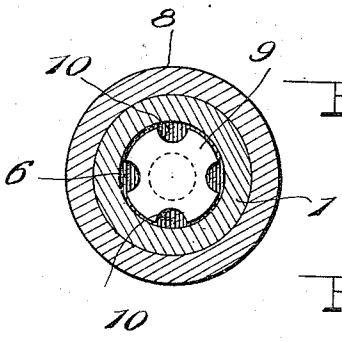
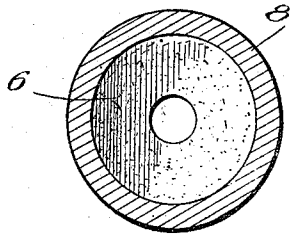
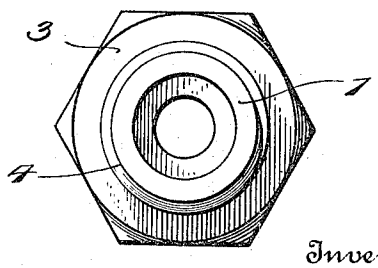


FIG. 2

FIG. 3

FIG. 4





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CHECK-VALVE.

1,177,011. Specification of Letters Patent. Patented Mar. 28, 1916.

Application filed November 22, 1915. Serial No. 62,813.

To all whom it may concern:

Be it known that I, JAMES W. BRUNSKILL, a citizen of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Check-Valves; and I do 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 appertains to make and use the same.

My invention is an improved type of check valve, and the object thereof is to provide a device of this class which may be constructed easily and cheaply, yet which when applied to use will be highly efficient and durable.

With this general object in view, the invention resides in certain novel features of construction and in unique combinations of parts to be hereinafter fully described and claimed, the descriptive matter being supplemented by the accompanying drawings which constitute a part of this application and in which:

Figure 1 is a vertical longitudinal section of a valve constructed in accordance with my invention, showing the application thereof to a bicycle pump; Figs. 2 and 3 are vertical transverse sections as seen on the planes of the lines 2—2 and 3—3 of Fig. 1; Fig. 4 is an end view of the cylinder.

In specifically describing the invention, reference will be made to the drawings above briefly described by similar reference characters placed on corresponding parts throughout the several views.

To this end, the numeral 1 represents a hollow cylinder with one open end, while its other end is closed and provided with an externally threaded attaching nipple or the like 2, a polysided enlargement 3 being formed adjacent this end for reception in a wrench when applying the valve to use. The open end of the cylinder 1 is reduced in diameter as shown at 4.

Contacting with the open end of the cylinder 1 is a circular centrally perforated sheet of leather or the like 6, the outer side of said sheet being disposed in contact with a circular centrally perforated cap plate 7 having at its edge an integral annular attaching flange 8 extending laterally therefrom and having internal screw threads interengaged with external screw threads on the cylinder, the last named threads being extended from the reduced diameter 4 toward the central portion of said cylinder.

By locating the sheet 6 as shown and described, it will be obvious that a reliable air tight connection will be established between the cap and the cylinder proper. In addition to this use of the sheet 6, however, it serves as a seat against which a valve disk 9 normally bears, said disk being slidable longitudinally within the cylinder and having an appropriate number of notches 10 in its edge to allow for the passage of air. The disk in question is held in yielding contact with the sheet 6 by a coil spring 11 which is housed within the cylinder as clearly shown in Fig. 1.

From the foregoing description, taken in connection with the accompanying drawing, it will be obvious that although I have provided a very simple and inexpensive check valve, the same will be efficient and durable and will possess a number of advantageous characteristics, particular emphasis being laid upon the two-fold function of the sheet 6 of leather, rubber or any other preferred pliable material. The provision of the reduced diameter 4 is also considered an improved feature, since it obviates the necessity of threading the cylinder as much as would otherwise be necessary.

I claim:—

A check valve comprising a cylinder having an open end, a flat circular centrally perforated plate closing said end and having an annular flange threaded on said cylinder, a flat centrally perforated circular sheet of pliable material contacting throughout its area with the inner side of said plate and having its edge clamped between said plate and the adjacent end of the cylinder to form an air tight joint, a peripherally

notched valve disk in the cylinder having a flat face contacting throughout its area with the inner side of said sheet, an attaching nipple formed on and partially closing the other end of the cylinder, and a coiled spring housed in said cylinder and bearing against the nipple and the valve disk to guide said disk and yieldably retain it in contact with the aforesaid sheet, the latter thereby serving also as a seat for said disk.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JAMES W. BRUNSKILL.

Witnesses:

V. A. MUELLER,

JAMES A. COLEMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."