No. 636,465. Patented Nov. 7, 1899.

F. L. SOWLE & R. C. HILTON.

VALVE FOR INFLATION.

(Application filed July 27, 1899.)

(No Model.)

Fig. 1.

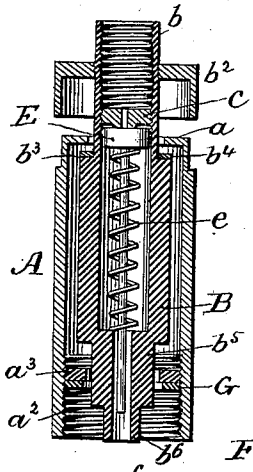


Fig. 2.

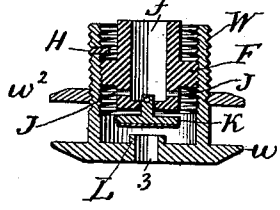


Fig. 3.

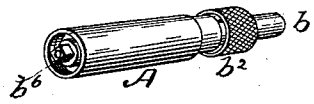


Fig. 4

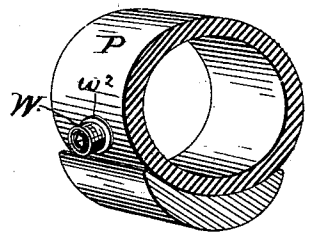


Fig. 5.



WITNESSES

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UNITED STATES PATENT OFFICE.

FREDERICK L. SOWLE AND ROLAND C. HILTON, OF NEW BEDFORD, MASSACHUSETTS.

VALVE FOR INFLATION.

SPECIFICATION forming part of Letters Patent No. 636,465, dated November 7, 1899.

Application filed July 27, 1899. Serial No. 725,301. (No model.)

To all whom it may concern:

Be it known that we, FREDERICK L. SOWLE and ROLAND C. HILTON, citizens of the United States, residing at New Bedford, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Valves for Inflation, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has for its objects the production of simple, reliable, and inexpensive devices to facilitate the inflation of articles, particularly pneumatic tires, the devices consisting principally of two parts, one being secured to the object to be inflated and the other a valve-carrier adapted to be permanently secured either to the first part or to the inflater.

This invention consists, mainly, in the peculiar means employed to adapt the second or outer part to open or to tightly close the valve of the first or inner part of the device when desired, as shown in the accompanying drawings, in which—

Figure 1 represents, on an enlarged scale, a longitudinal central section of the outer part of the device. Fig. 2 represents, also on an enlarged scale, the inner part of the device. Fig. 3 represents in perspective the outer part of the device of substantially normal size. Fig. 4 represents in perspective a portion of a wheel-felly and of a pneumatic tire, the latter carrying the inner part of the device secured to one side of said tire. Fig. 5 is a perspective view of the cap adapted to cover and protect the inner part of the inflating device.

In said drawings, A represents a tubular casing of the outer part of the device, having its outer end provided with a flange a, turned inwardly of said casing, and its inner end screw-threaded internally at a^2 for two purposes, one of which is to retain the periphery of a circular disk a^3, which forms an abutment for a washer G and is also used to retain and guide therein the barrel B of the pump attachment. The outer end b of said barrel is of suitable size to be embraced by the end of the rubber hose of a pump or to receive therein a pump-nipple in engagement with its screw-tapped interior. A short distance from its outer end b the barrel B has permanently secured to its periphery a flanged head b^2, which has its circumference milled to facilitate its retention by the operator and permit said barrel to be rotated thereby.

The middle portion of the barrel B is of larger diameter than its ends to provide a shoulder b^3, upon which is placed a washer b^4 to form a tight joint with the under side of the flange a of the casing A. The portion b^5 of the barrel below its large portion is cylindrical and is guided by the circular disk a^3; but its lower end b^6 is angular in cross-section, preferably square, to act as a key and enter into engagement with a square hole f in the center of the rotatable valve-carrier F, which is located within the inner part of the inflating device.

Within the screw-tapped outer end b of the barrel B is adjustably secured a perforated valve-seat C, which is normally closed by the head of a plunger E, as one end of a spring e, coiled around the stem of said plunger, bears against the under side of said head, while the opposite end bears against a shelf formed within the barrel B. The screw-tapped lower end a^2 of the casing A is also to permit it to embrace and be secured either permanently or only occasionally to the inner part of the inflating device. Said inner part, which is always permanently secured to the tire P, consists of tubular valve-casing W, having a flange w, intended to be received within the tire. The body of the casing W is screw-threaded externally for engagement with the screw-tapped lower end a^2 of the casing A. It also carries a nut-washer w^2 to clamp the wall of the tire in connection with the flange w. Said flange has centrally an opening 3 for the passage of air, and the walls of said opening project inwardly of the casing to provide a valve-seat L thereon. The casing W is screw-tapped internally for engagement with the screw-threaded periphery of the valve-carrier F. The lower portion of said carrier has two radial openings J for the issue of air received in the central square hole f and a central hole in the bottom to receive the stem of the valve K, which is thus swiveled in its bearing. Said valve generally car-

ries a thin washer of leather, and is retained connected to the valve-carrier by a small pin diametrically through the valve-stem.

To prevent the valve-carrier from being unscrewed too far out of its casing, a small pin H is made to pass through the walls of said casing over the location generally occupied by the valve-carrier.

When the tire carries permanently the inner part only of the inflater—viz., the casing W and its contents—said parts are generally located on the side of said tire and are protected by a valve-cap R; but if the outer part of the device remains permanently attached to the inner part a cap is generally dispensed with and said parts are made to pass through the felly of the wheel.

To use the device if it is attached to one of the sides of the tire, the cap R is first removed from the casing W, and the lower end of the casing A of the outer part is screwed upon the outer end of the casing W of the inner part sufficiently to make a tight joint with the washer G. This also causes the square end b^6 of the inner barrel B to enter into engagement with the walls of the square passage f of the valve-carrier F. Then the operator, with the thumb and forefinger clasping the flanged head b^2 of the barrel B, rotates said barrel to the left, as if unscrewing it, until a tight-fitting joint is formed against the washer b^4, due to the unscrewing of the valve-carrier F. This motion lifts the valve K off its seat and allows air to pass through the bottom opening 3. The tire can then be pumped full of air, after which the operator rotates the barrel B toward the right until the valve K is pressed tightly upon its seat L. The outer part A of the device is then unscrewed and removed and the cap R replaced in position. If said outer part A is intended to remain permanently connected with the inner part inclosed by the casing W, the end of the hose leading from the pump is simply disconnected from the outer end b of the barrel B.

If the valve-casing W and its contents are intended to be attached to the valve-tubes already in use in tires, the bottom flange w and the nut-washer w^2 are dispensed with, and said casing W is screwed into said valve-tube.

Having now fully described our invention, we claim—

1. In a valve for inflation the combination of a cylindrical casing W screw-threaded internally and externally and having a bottom flange centrally perforated and provided with a valve-seat, a nut-washer adjustable upon the outer periphery, a valve-carrier adjustable upon the inner periphery and having centrally a polygonal opening, and a valve pendent and rotatable from the valve-carrier substantially as described.

2. The combination of the cylindrical casing A, the hollow barrel B therein having internally and adjustable perforated valve-seat toward its upper end, and a spring-plunger normally bearing against the valve-seat, the lower end of the barrel being angular in cross-section, with the cylindrical casing W, a rotatable valve-carrier therein having centrally a polygonal opening adapted to receive the said lower end of the barrel, and a valve pendent from said valve-carrier substantially as described.

3. The combination of the cylindrical casing W having in its bottom a centrally-perforated valve-seat, a valve-carrier adjustable upon the inner periphery of the casing and having centrally a polygonal opening closed in the bottom but having lateral openings, with a valve pendent and rotatable from the valve-carrier substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

FREDERICK L. SOWLE.
ROLAND C. HILTON.

Witnesses:
EDWARD WILLIAMS,
CLIFFORD P. SHERMAN.