Oct. 21, 1924.

1,512,894

H. P. KRAFT

WATER BOTTLE STOPPER

Filed March 1, 1921

Fig. 1.

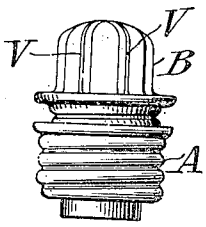


Fig. 2.

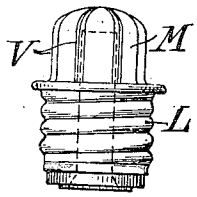


Fig. 3.

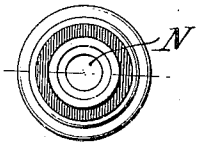


Fig. 4.

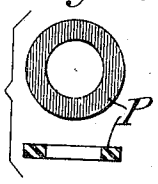


Fig. 5

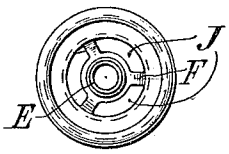


Fig. 7.

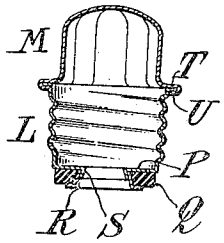
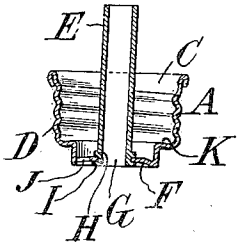


Fig. 6.



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By Attorneys

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Patented Oct. 21, 1924.

1,512,894

UNITED STATES PATENT OFFICE.

HENRY P. KRAFT, OF RIDGEWOOD, NEW JERSEY; EDGAR J. PHILLIPS AND EARL A. DARR EXECUTORS OF SAID HENRY P. KRAFT, DECEASED.

WATER-BOTTLE STOPPER.

Application filed March 1, 1921. Serial No. 448,785.

To all whom it may concern:

Be it known that I, HENRY P. KRAFT, a citizen of the United States of America, residing in Ridgewood, in the county of Bergen and State of New Jersey, have invented certain new and useful Improvements in Water-Bottle Stoppers, of which the following is a specification.

This invention relates to water bottle stoppers, and aims to provide certain improvements therein.

The invention is particularly directed to that type of water bottle stopper in which the socket member is provided with a tubular extension, usually centrally arranged, which is designed to permit the escape of air from the interior of the water bag during the operation of filling the bag. Such stoppers have heretofore been provided, but have been expensive to manufacture. According to the present invention a stopper of this type is provided which is preferably constructed of sheet metal throughout, that is to say, both the socket member and the stopper proper are constructed of drawn sheet metal. The invention also comprises certain other improvements which will hereinafter be more fully described.

Referring to the drawings, which show the preferred form of the invention,—

Figure 1 is an elevation of the stopper and socket member, the stopper being shown in place in the socket member.

Fig. 2 is an elevation of the stopper detached.

Fig. 3 is an under-side view of the stopper of Fig. 2.

Fig. 4 is a plan and section of the packing washer.

Fig. 5 is a top view of the socket member.

Fig. 6 is a diametrical section thereof.

Fig. 7 is a diametrical section of the stopper.

Referring to the drawing, let A indicate the socket member and B the stopper, shown as connected in Figure 1. In Figure 6 is shown a diametrical section of the socket member, by reference to which figure it will be seen that the body C of the socket member is constructed preferably of a sheet metal cup properly drawn from flat stock, and being provided with a rolled thread D. The socket member has connected to it a vent tube E which may also be formed of sheet metal stock of seamless tubing or the like. As shown, the member E is preferably connected to the bottom F of the socket member which is provided with an aperture G, within which the vent tube is located. As shown in the drawing, the tube is provided with flanges H and I, which grip over the bottom F, thus securely holding the tube in place. As before stated, the object of the tube E is to provide a vent for air while the bag is being filled, and for this purpose the tube E is best extended a considerable distance above the upper edge of the socket member in order that in filling the water bottle, there will be little liability of water passing down through the tube.

The bottom of the socket member is provided with a passage or passages J, best seen in Figure 5 and shown as three in number, which passages are designed to permit the water to pass as rapidly as possible down into the bag during the filling operation. These passages are preferably cut out of the cup which forms the socket member either during or after the drawing operation.

The socket member is also provided with a shoulder K extending around its interior and adapted to form a seat for the stopper, which shoulder may be constructed during the drawing operation by reducing the diameter of the bottom, as shown.

The stopper B is best constructed of sheet metal and comprises a body portion L which is threaded to engage the interior of the socket member and an imperforate dome-shaped portion M, adapted to receive the projecting end of the vent tube E, and also adapted to be used as a handle for operating the device. The stopper is formed on its bottom with an opening N, through which the vent tube E passes, there being left at the bottom of the stopper a marginal bearing face or shoulder P, which is engaged by the packing washer Q. The latter is of annular shape, being held in place by an annular plate R, which in turn is secured to the bottom of the stopper by riveting a part of the bottom over the plate R, as shown at S.

The stopper is preferably formed of two cups drawn from sheet metal, the body L being best provided with a flange at its top, as shown at T, and a dome-shaped extension M being provided with an interlocking flange U, as best seen in Figure 7.

In order to provide a finger-hold for the stopper, the body M is provided with a series of longitudinal ribs V which are formed in the dome during the drawing operation.

By the construction thus described a cheap and efficient stopper of the class described is produced, and one which can be easily applied to and removed from the socket.

While I have shown and described one form of the invention, it will be understood that I do not wish to be limited thereto, since various changes may be made therein without departing from the spirit of the invention.

What I claim is:—

1. A water bottle closure comprising a screw-threaded socket member, a vent tube connected with said screw-threaded socket member, a stopper adapted to seat in said socket member having an opening in its bottom through which said vent tube projects, and a dome-shaped extension fixed to the top of said stopper, and being hollow to receive said vent tube.

2. A water bottle closure comprising a screw-threaded socket member, a vent tube connected with said screw-threaded socket member, a stopper adapted to seat in said socket member having an opening in its bottom through which said vent tube projects, and a dome-shaped extension fixed to the top of said stopper and being hollow to receive said vent tube, and said dome-shaped extension having a series of longitudinal ribs constituting a finger-hold.

3. A water bottle closure comprising a socket member formed of sheet metal having an aperture in its bottom, and a vent tube connected to said bottom at said aperture, and said socket member having a seat arranged above said aperture and adapted to be engaged by a packing on a stopper.

4. A water bottle closure comprising a socket member having portions of its bottom removed, and a vent tube connected with said bottom, said vent tube being rivetted to the latter and extending above the upper end of the socket member, and a stopper comprising two sheet metal cups, one of which is screw-threaded to engage the socket member and the other of which is a dome-shaped extension hollowed on its interior to receive the projecting end of said vent tube.

5. A water bottle closure comprising a socket member formed of sheet metal and having an aperture in its bottom, and a vent tube connected to said bottom at said aperture, the vent tube having a flange above said bottom and a flange below said bottom, and said bottom having a second aperture.

In witness whereof, I have hereunto signed my name.

HENRY P. KRAFT