H. P. KRAFT AND M. C. SCHWEINERT.

CAP FOR FOUNTAIN SYRINGES OR THE LIKE.

APPLICATION FILED MAY 22, 1908.

1,318,885. Patented Oct. 14, 1919.

FIG. 1.

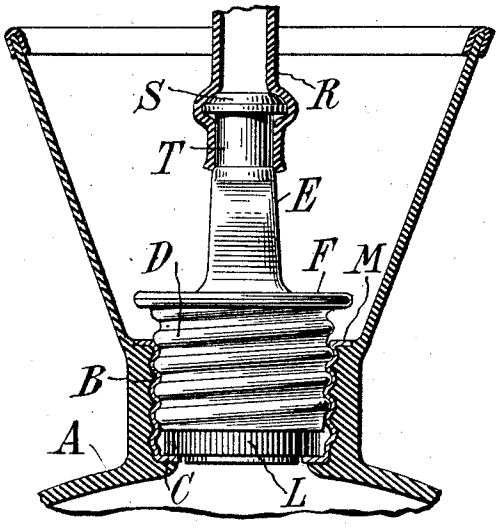


FIG. 2.

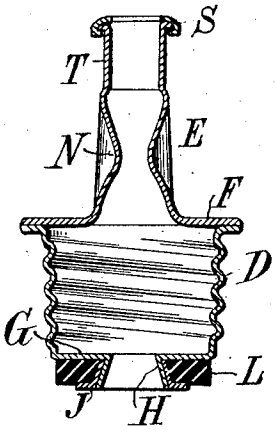


FIG. 3.

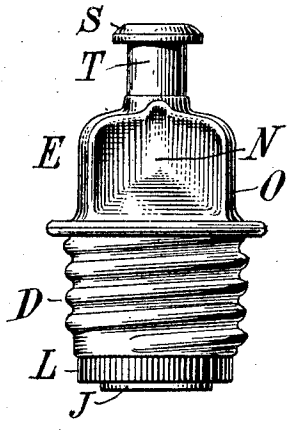


FIG. 4.

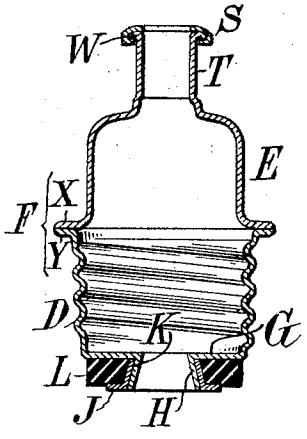


FIG. 7.

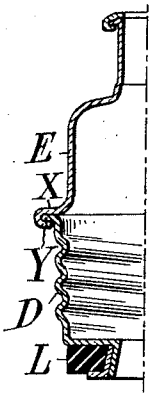


FIG. 6.

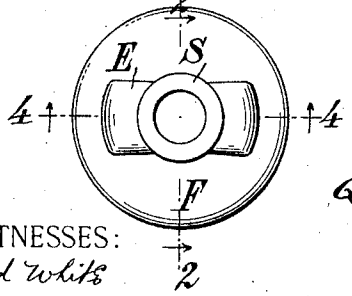
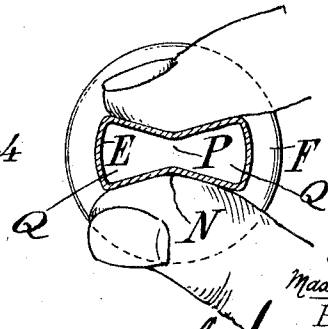


FIG. 5.



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UNITED STATES PATENT OFFICE.

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CAP FOR FOUNTAIN-SYRINGES OR THE LIKE.

1,318,885. Specification of Letters Patent. Patented Oct. 14, 1919.

Application filed May 22, 1908. Serial No. 434,352.

To all whom it may concern:

Be it known that we, HENRY P. KRAFT, residing in the borough of Brooklyn, county of Kings, city and State of New York, and MAXIMILIAN CHARLES SCHWEINERT, residing in West Hoboken, in the county of Hudson and State of New Jersey, both citizens of the United States, have jointly invented certain new and useful Improvements in Caps for Fountain-Syringes or the like, of which the following is a specification.

This invention aims to provide a cap for screwing into water bottles or the like, and which has several features of advantage over previous caps designed for similar uses. The cap of this invention is formed with hollows on the outside to receive the finger and thumb of the operator, and to facilitate the screwing of the cap tightly into its socket without having to grip so hard as to hurt the operator's fingers. A very convenient method of attaching the packing ring is provided. Other points of advantage in manufacture and use are referred to in detail hereinafter.

The accompanying drawings illustrate an embodiment of the invention.

Figure 1 is a side elevation showing the cap in its relation to a water bottle and a hose which are in section;

Fig. 2 is a central longitudinal section of the cap on the line 2—2 of Fig. 6;

Fig. 3 is an elevation at right angles to Fig. 1;

Fig. 4 is a cross-section on the line 4—4 of Fig. 6;

Fig. 5 is a horizontal section through the finger hold of the cap;

Fig. 6 is a plan.

Fig. 7 is a sectional view illustrating the preferred manner of attaching the extension and body.

Referring to the embodiment of the invention illustrated, we suppose A to indicate any suitable vessel, such as a water bag or the reservoir of a fountain syringe, which is provided with a threaded socket B having at its inner end an inward flange C. The cap is provided with a screwthreaded portion D and an upward extension E, constituting a finger hold by which the cap may be screwed into and out of the socket. The top F of the body portion of the cap preferably extends outward slightly beyond the screwthreads so as to form a flange, and the bottom of the body of the cap consists of an inward flange G the edge of which is composed in turn of a flange H extending downwardly and outwardly so as to engage a retainer J provided with an inwardly and upwardly extending flange K, a packing ring L of rubber or the like being held against the bottom G of the cap body by means of the retainer J. This manner of attachment of the packing ring to the base of the cap is not claimed broadly herein, being the subject of a prior application for Patent No. 366,687, dated April 6, 1907. It is, however, especially adapted to caps of the present type, in that it provides for a central opening to the passage which extends from end to end through the cap. In other stoppers and caps it is proposed to prevent the escape of liquid from the bag by various other types of packing, and by locating the packing in other situations, as for example between the flange constituted by the top F of the cap body and the outward flange M of the socket; and these and various other packing arrangements may be adopted in connection with our improved cap, but preferably the arrangement shown is used, in which the packing ring L bears on the flange C at the inner end of the socket B, the central opening in this flange being larger than the ring J, so as to insure that only the packing ring shall come in contact with the flange C. The upward extension E is formed with one or more depressions or hollows N in its vertical side faces which fit very conveniently and comfortably the ends of the fingers, so that the cap may be grasped thereby as in Fig. 5, and so that it may be screwed up tightly with great ease. Preferably the hollow gripping faces N are made as large as possible by extending them all the way down to the top F of the cap body against which the operator's fingers shall press in introducing the cap; and by forming the extension of a generally oblong shape in cross-section, so that for a given quantity of metal the gripping faces N will be made as long (horizontally) as possible, and the end faces O will be only as long as is necessary to secure against distortion in use and to leave a proper passage through the interior. The depth of the hollow gripping faces N, that is to say the degree of depression of the center inward from the edges of the face,

may be increased to any desired extent, even to the extent of bringing the two opposite walls together at the center P (Fig. 5), leaving a passage at the ends Q of the inclosed space. The hose R is preferably attached by forcing the end of it over a slight enlargement or nipple of the top. Preferably the enlargement S is arranged at the end of a neck T extending upward from the top of the extension E. The flange W stiffens and reinforces the nipple, and the making of the nipple of a separate piece permits of a greater accuracy and perfection in shaping it, than if it were an integral flange of the neck T.

The cap is preferably made of sheet metal, which permits of readily shaping the various parts and of the formation of a leak-tight passage from one end to the other, as well as providing a very light and comparatively cheap construction. It may be made of a single piece in the manner described in patent of Schrader No. 657,570, dated September 11, 1900, and may embody one or more of the features of novelty hereinafter claimed; or the body D and the extension E may be shaped separately, and soldered, crimped or otherwise fastened together. For example in Figs. 2 and 4 the top F of the body of the cap is composed of a double thickness of metal, a flange X at the bottom of the extension E, and a flange Y at the top of the body D, the two being soldered together. In Fig. 7 on the other hand the flange X at the bottom of the extension E is crimped around the flange Y at the top of the body D. By making a joint between the body and the upper extension, it is possible to provide a very wide and abrupt surface at the base of the finger hold which facilitates the application of the cap to a bag, and which is difficult to obtain where the entire extension and the body are made of a single piece of sheet metal, as in the patent above referred to.

What we claim is:—

1. A device of the class described having a base G, a packing ring L, a retaining ring J overlying said packing ring, and a flange H holding said retaining ring in place, the space within the flange H being open to provide a passage through the base.

2. A device of the class described including a body portion D having a base G, a packing ring L, a retaining ring J therefor, and a flange H holding said retaining ring in place, a flange Y at the upper end of said body portion, an extension E having a flange X and having a gripping portion which is substantially oblong in cross-section, and which has its longer sides hollowed upon their outer faces.

3. A cap having a perforated base and an opening at its upper side, a packing ring around said perforation, and means for fastening said packing ring to said base, said means comprising an annulus engaging the inner edges of said packing ring, and an inturned flange around said perforation engaging said annulus.

In witness whereof we have hereunto signed our names in the presence of two subscribing witnesses.

HENRY P. KRAFT.
MAXIMILIAN CHARLES SCHWEINERT.

Witnesses:
EUGENE V. MYERS,
THEODORE T. SNELL.

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