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H. P. KRAFT & M. C. SCHWEINERT.

WATER BOTTLE STOPPER.

APPLICATION FILED MAY 28, 1906.

FIG. 1.

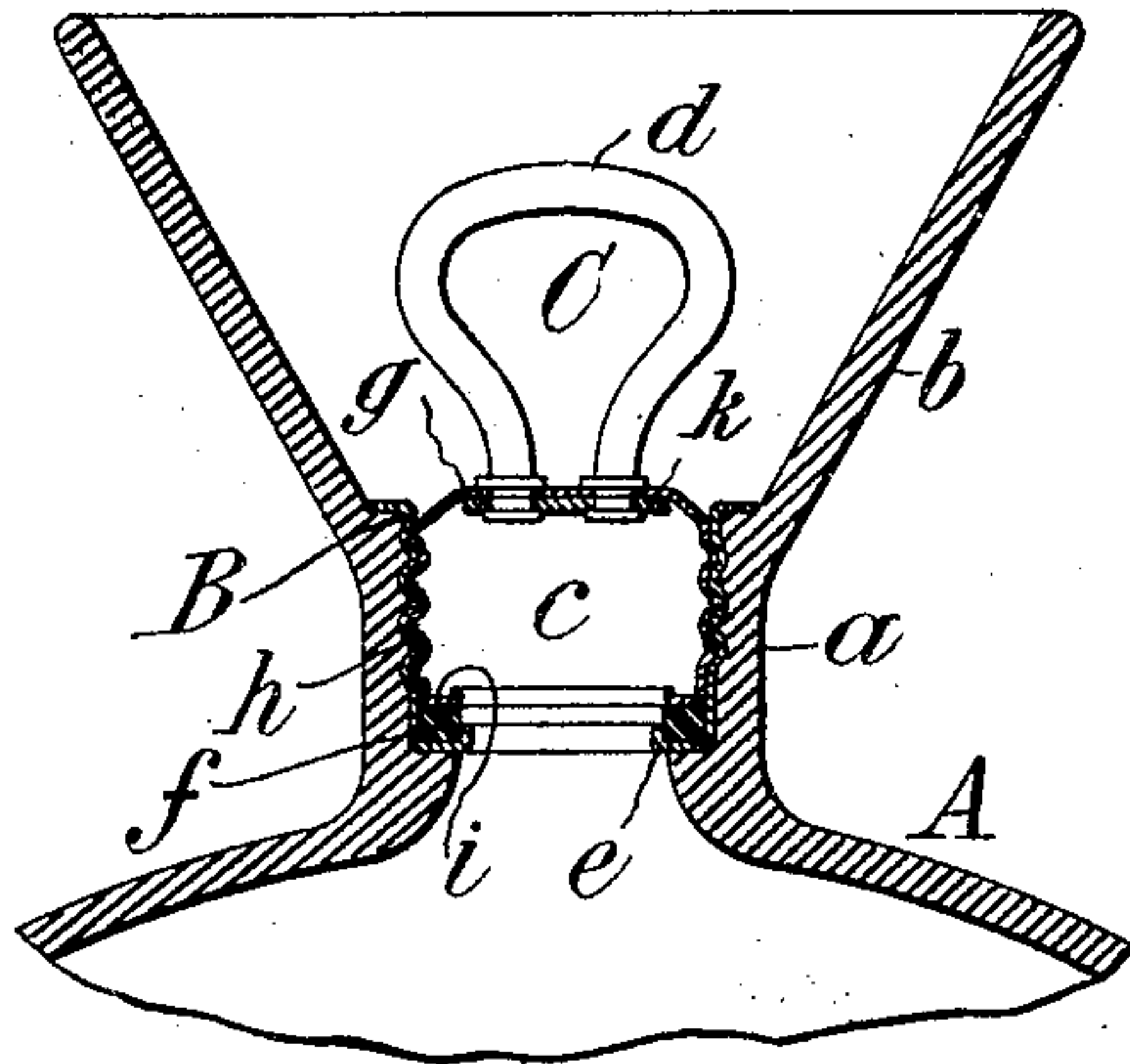
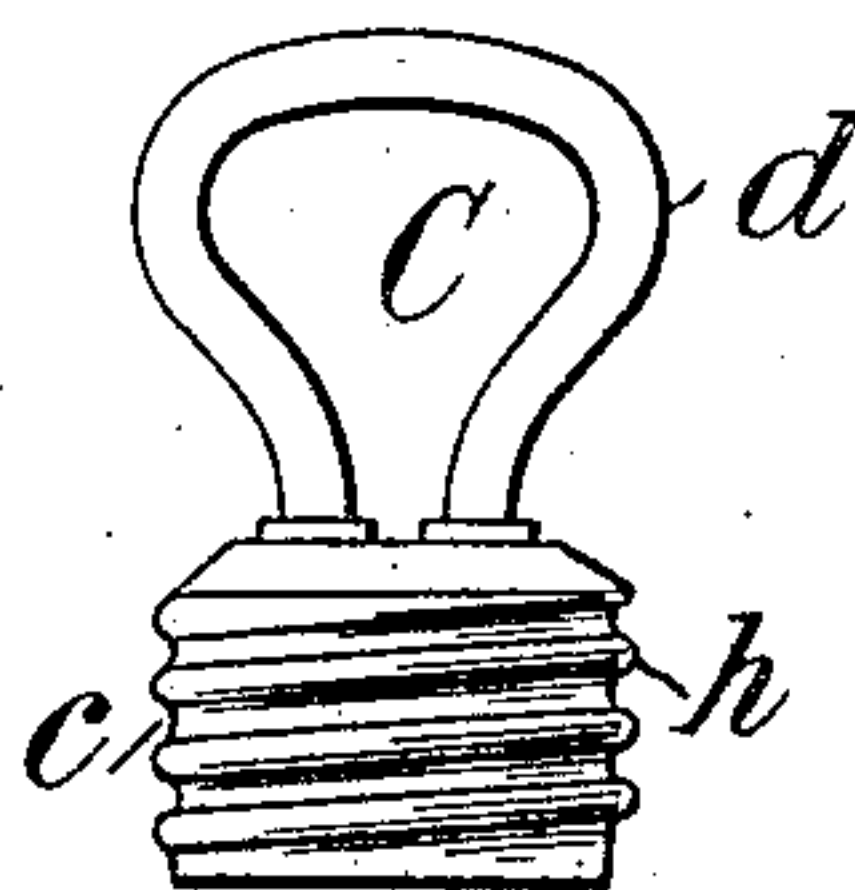


FIG. 2.



WITNESSES:

Fred White
Rene Duine

INVENTORS:

Henry P. Kraft and
Maximilian Charles Schweinert,

By Attorneys,

Arthur C. Fraser & Wena

UNITED STATES PATENT OFFICE.

HENRY P. KRAFT, OF NEW YORK, N. Y., AND MAXIMILIAN CHARLES SCHWEINERT, OF WEST HOBOKEN, NEW JERSEY.

WATER-BOTTLE STOPPER.

No. 877,933.

Specification of Letters Patent.

Patented Feb. 4, 1908.

Application filed May 28, 1906. Serial No. 319,030.

To all whom it may concern:

Be it known that we, HENRY P. KRAFT, residing in the borough of Brooklyn, in the 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, citizens of the United States, have invented certain new and useful Improvements in Water-Bottle Stoppers, of which the following is a specification.

This invention relates to stoppers for water bottles or the like and aims to provide certain improvements therein. Stoppers of this kind usually consist of a screw-threaded socket member which is vulcanized or otherwise connected to the neck of the water bottle, and a stopper proper which is adapted to screw into or upon the socket member, a suitable packing being interposed between the two.

Our invention is particularly directed to the construction of such stopper proper. For economy it is practically essential that such stoppers be made of sheet metal, and heretofore they have usually been constructed of a cup-shaped member closed at its bottom and flanged at its top, and a disk having its edge crimped over such flange, the handle being attached to such disk before the two parts of the body are united.

By our present invention we provide a stopper of much cheaper construction than any heretofore made, and one which is equally efficient in use. The stopper provided by our invention, in its preferred form, comprises a body portion formed of a single piece of sheet metal, which is drawn to cup shape with the opening upon its under side, the exterior wall of the stopper being screw-threaded so that it may screw within the socket member. The stopper is provided on its under side with a thickened edge or equivalent device which is adapted to contact with an annular packing washer carried in the lower portion of the socket member. Preferably such edge is formed by turning the metal inwardly to form an annular flange extending approximately at right angles to the side wall of the stopper.

In the drawings in which we have shown our invention in its preferred form, Figure 1 is a central vertical section of a water bottle provided with a stopper constructed in ac-

cordance with our invention; Fig. 2 is a side elevation of the stopper proper removed.

Referring to the drawings let A indicate any suitable form of water bottle having a neck *a* and funnel *b*. The stopper as shown comprises a socket member B which is vulcanized or otherwise secured in the neck *a* of the bottle and a stopper proper C having a body portion *c* and handle *d*. The socket member B is formed with an integral screw thread in its side wall, and a bottom flange *e* which serves as a seat for the stopper, an annular packing washer *f* being preferably carried upon such seat as shown.

According to our invention the body portion *c* of the stopper C is formed of a single piece of sheet metal which is drawn to cup shape, the cup being inverted so that the bottom *g* serves as the top of the stopper. The side wall of the stopper is provided with an exterior screw thread *h*, which is preferably formed by the rolling process after the formation of the cup. The lower edge of the stopper is provided with an enlarged or thickened portion which forms a seating face adapted to bear against the packing washer *f* to provide a leak tight joint between the parts. Such seating face may be formed in any suitable manner, but we prefer to utilize an integral part of the body portion for this purpose, and to this end we turn the lower edge of the body inwardly to form a flange *i*, such flange preferably extending approximately at right angles to the sides of the body, so as to present a flat surface to the packing washer when the stopper is screwed home. This flange may be conveniently formed by spinning the edge of the stopper inwardly after the formation of the threads *h*.

It will be observed that the stopper is open at its under side, so that the water from the bottle can freely enter the interior of the stopper. This necessitates a tight connection between the handle *d* and the stopper body so that the water cannot leak outwardly therethrough. One form of such connection is illustrated in the drawing. In this construction the ends of the wire forming the handle *d* are riveted to the top *g* of the stopper body, a plate *k* being preferably interposed between the upset ends of the handle and the under face of the top *g*. This construction provides a perfectly leak

tight joint between the handle and body and one which is easily made in the present form of stopper; since the upsetting tool can pass inwardly through the open underside of the stopper body.

It will be seen that our invention provides a stopper of extremely simple construction and of the minimum cost. At the same time such stopper is fully as efficient as those now in use, and of at least equal durability.

By our present invention we entirely dispense with one of the parts necessary in the best types of sheet metal stoppers heretofore used, and further dispense with the comparatively difficult operation of crimping the two parts together. Our present stopper is also more easily nickel plated than those heretofore made and shows a better finish, since there are no exterior joints which are difficult to plate.

A further advantage of our invention is that the stopper is of the same general diameter throughout, so that it may be screwed past the edge of the socket member if desired, this being a special advantage in those types of stoppers in which the socket member is continued upwardly beyond the neck of the bottle, so that the stopper need not be removed therefrom, such member being formed with lateral passages in its projecting portion to permit filling or emptying of the bottle.

Although we have described in detail the preferred form of our invention, we do not wish to be limited thereto as various modifications may be made therein without departing from our invention.

What we claim is:—

1. In a water bottle stopper or the like, the combination of a socket member having a seat, and a stopper having an external screw thread adapted to screw within such member, said stopper being cup-shaped and open on its underside and its lower edge being adapted to co-act with said seat.

2. In a water bottle stopper or the like, the combination of a socket member having a seat, and a stopper having an external screw thread adapted to screw within such mem-

ber, said stopper being provided with an enlarged portion on its lower edge adapted to coact with said seat.

3. In a water bottle stopper or the like, the combination of a socket member having a seat and an annular gasket in said seat, and a cup-shaped stopper open on its underside, the lower edge of said stopper being adapted to contact with said gasket.

4. In a water bottle stopper or the like, the combination of a socket member having a seat and an annular gasket in said seat, said stopper having an enlarged portion at its lower edge adapted to form a seating face adapted to contact with said gasket.

5. In a water bottle stopper or the like, a stopper having its body portion formed in cup shape with its underface open, said stopper having its exterior wall screw-threaded to engage a socket, and having an enlarged portion at its lower edge adapted to form a seating face.

6. In a water bottle stopper or the like, a stopper having its body formed of a single piece of sheet metal drawn to cup shape with its underside open, said stopper having its exterior wall screw-threaded to engage a socket member, and having its lower edge enlarged beyond the thickness of the metal of the body portion to form a seating face.

7. In a water bottle stopper, a stopper having an open underside, said stopper having its exterior screw-threaded and its lower edge formed with a flange.

8. In a water bottle stopper, a stopper having its body portion formed of a single piece of sheet metal bent to inverted cup shape, the exterior of said body being screw-threaded and its lower edge being formed with an inwardly extended flange.

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.