UNITED STATES PATENT OFFICE.

HARRISON B. SMITH, OF BAYSIDE, NEW YORK.

SEAL FOR RECEPCTACES.

1,024,370.


Application filed June 10, 1911. Serial No. 632,488.

To all whom it may concern:

Be it known that I, HARRISON B. SMITH, a citizen of the United States, residing at Bayside, in the county of Queens and State of New York, have invented new and useful Improvements in Seals for Recepctacles, of which the following is a specification.

This invention relates to seals for bottles, jars and other similar receptacles, one object of the invention being to provide a seal of the cap type which is simple of construction, efficient in use for hermetically closing the mouth of the receptacle, and adapted to be applied and removed without the use of tools.

Another object of the invention is to provide an elastic stopper for general use in connection with a cap of the type described or any preferred form of retainer, whereby the mouth of the receptacle will be securely closed against the inlet of air or escape of the contents of the receptacle, said stopper being adapted to accommodate itself to variations in the size of the necks of receptacles and to snugly fill the same, and also adapted for ready and convenient insertion and removal.

The invention consists of the novel features of construction, combination and arrangement of parts, hereinafter fully described and claimed, reference being had to the accompanying drawing, in which:

Figure 1 is a side elevation of the neck of a receptacle sealed by my improved cap and stopper. Fig. 2 is a central vertical section of the same. Fig. 3 is a view similar to Fig. 2, illustrating the mode of application of the cap.

Referring to the drawing, 1 designates the mouth or neck portion of a bottle, jar or other receptacle provided with an external annular bead 2 immediately below the rim edge thereof for cooperation with a sheet metal closure cap 3. While a receptacle of this character is shown for the purpose of illustrating the application of my invention, any other type of receptacle having projections of a suitable character in place of the bead may be employed. The cap 3 is provided with a flange 4 of less diameter than the beaded portion of the neck and which is sufficiently resilient to be sprung into engagement with the bead. The cap as a whole is made of resilient sheet metal of any suitable thickness, and for the purpose of increasing the resiliency of the flange and permitting it to interlock with the bead said flange is provided with one or more elongated slots or openings 5, extending lengthwise in a circumferential direction.

As shown in the present instance, the flange 4 is provided with a series of the slots or openings 5 arranged at regular intervals apart, which openings may be disposed in pairs arranged at right angles to each other and with the openings of each pair diametrically positioned. In sealing the receptacle, the cap is arranged at an angle to the mouth of the receptacle, as shown in Fig. 3, so as to bring one side of the flange opposite the adjacent side of the bead and arrange one of the openings 5 to receive the adjacent portion of the bead, whereby the distance between such side of the flange and the diametrically opposite side of the bead will be decreased, permitting the cap to be sprung down to the position shown in Figs. 1 and 2 over the bead to interlock them with said close the mouth of the receptacle. In the use of a plurality of the slots or openings 5, such slots or openings, in the application of the cap to the receptacle, receive the adjacent portions of the bead, thus locking the cap in position at a plurality of points. By this means the cap may be applied without the use of a tool and will be firmly and securely held in position against any possibility of casual displacement, while at the same time the resiliency of the flange will allow the cap to be readily extracted without the use of a tool by tilting the cap at an angle while it is being drawn upon, as will be readily understood.

The cap may be employed in conjunction with liners or sealing disks of any ordinary or suitable type for the purpose of hermetically closing the receptacle, but is preferably used in conjunction with the type of internal stopper or plug herein shown, said stopper or plug being retained in position by the cap and closing the mouth of the receptacle in an absolutely air and liquid tight manner. The said stopper or plug comprises a tapering hollow body 6, formed of semi-vulcanized rubber or other suitable elastic material, and closed at its lower end 7. The plug is adapted to be inserted within and to occupy the upper portion of the neck of the
receptacle and is formed at its upper, open end with an outturned annular flange 8 designed to be clamped against the rim edge of the receptacle by the cap 2 or other retainer employed. The elasticity of the hollow plug readily adapts it to be inserted within and to accommodate itself to necks varying somewhat in size and having irregularities of surface, whereby an absolutely tight sealing action will be obtained. The stopper or plug may be readily removed by simply gripping a portion of the flange 8 and moving it out of contact with the rim, whereupon the stopper may be easily extracted.

While it is preferred to employ the stopper in connection with a cap of the type herein shown, any other suitable retainer adapted to grip the neck of the receptacle and to hold the stopper in place against external pressure may be used. The elastic stopper may also be employed alone as a seal where the nature of the contents is such that the stopper will not be subjected to any materially great internal pressure.

Having thus described the invention, what I claim as new is:

The combination with a receptacle having an external bead or projection, of a cap provided with a resilient circumferential flange of less normal diameter than the beaded portion of the receptacle, said flange having diametrically disposed circumferential slots formed therein to receive the bead and permit the cap to be placed at an angle upon the mouth of the receptacle with one of said slots in engagement with the bead, to reduce the distance between the side of the flange having the said slot therein and the diametrically opposite side of the bead, whereby the latter-named side of the cap is adapted to be sprung downward to bring the slot therein into engagement with the bead.

In testimony whereof I affix my signature in presence of two witnesses:

HARRISON B. SMITH.

Witnesses:

C. C. HINES.
BENNETT S. JONES.