No. 697,036. Patented Apr. 8, 1902.

A. STERN.

BOTTLE STOPPER.

(Application filed Sept. 4, 1901.)

(No Model.)

Fig. 1.

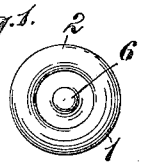


Fig. 4.

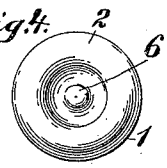


Fig. 7.

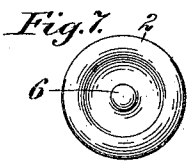


Fig. 11.

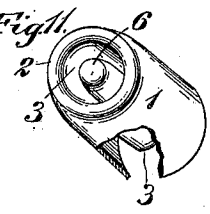


Fig. 2.

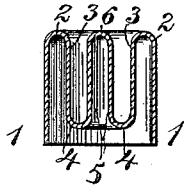


Fig. 5.

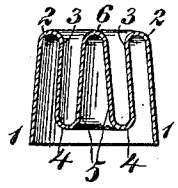


Fig. 8.

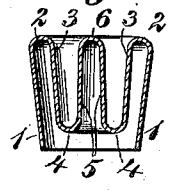


Fig. 10.

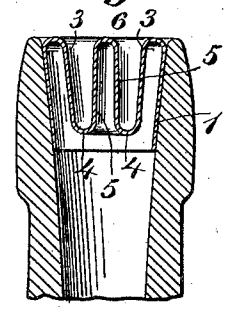


Fig. 3.

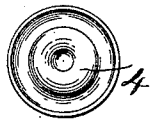


Fig. 6.

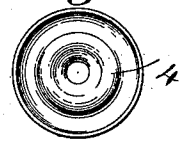
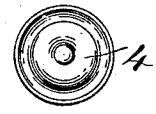


Fig. 9.



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UNITED STATES PATENT OFFICE.

ARNOLD STERN, OF NEW YORK, N. Y.

BOTTLE-STOPPER.

SPECIFICATION forming part of Letters Patent No. 697,036, dated April 8, 1902.

Application filed September 4, 1901. Serial No. 74,301. (No model.)

To all whom it may concern:

Be it known that I, ARNOLD STERN, a citizen of the United States, residing in the borough of Manhattan, in the city of New York, county of New York, and State of New York, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a specification.

My invention relates to bottle-stoppers, and its novelty consists in the construction and adaptation of the parts, as will be more fully hereinafter pointed out.

The purpose of my invention is to produce a bottle-stopper of flexible metal which may be used in much the same manner as cork—that is, be forced into the neck of the bottle of common form—and which has an approximately circular cross-section, and by the adhesion between the external surface of the stopper and the internal surface of the bottle be retained in the bottle to seal it.

My device consists of an integral structure made up of a plurality of concentric rings or bands united by inturned flanges at their alternate edges, the outer ring or band inclosing or surrounding the others, so as to form a cylindrical or conical elastic body adapted to be placed within the mouth of the bottle.

In the drawings, Figure 1 is a top plan view of one form of my device. Fig. 2 is a central vertical section, and Fig. 3 a bottom plan view thereof. Fig. 4 is a top plan view of a modification of my device, Fig. 5 a central vertical section, and Fig. 6 a bottom plan view thereof. Fig. 7 is a top plan view of a second modification of my device, Fig. 8 a central vertical section, and Fig. 9 a bottom plan view thereof. Fig. 10 is a central vertical section of a part of a bottle-neck, showing one of my stoppers in place; and Fig. 11 is a perspective view of a stopper.

In the drawings, 1 is the outermost of the plurality of rings or bands of which the stopper is composed. With respect to its central vertical axis this ring may be cylindrical, as shown in Fig. 2, conical, with the smaller end upward, as shown in Fig. 5, or conical, with its smaller end downward, as shown in Fig. 8. It is formed of a continuous sheet of smooth metal. At one end it is turned inwardly to form a flange 2, which unites it to the next ring 3, concentric with the ring 1. This ring 3 may be cylindrical, as shown in Fig. 2, or conical, as shown in Figs. 5 and 6. At the end opposite to the band 2 the ring 3 is again turned inwardly to form a flange 4, which unites it in turn with the ring 5, which is concentric with the rings 1 and 3. The ring 5 has its opposite edges united by the cap or circular band 6.

The whole device is made integral and is pressed out of one piece of metal by suitable male and female dies.

In using my device a special tool is employed corresponding to the contour of the uppermost surface of the stopper, which the advancing motion of the tool presses within the mouth of the bottle in the position shown in Fig. 10. It will seal the bottle, although there may be slight inequalities or irregularities in the inner surface of the neck.

The device is clean, cheap, non-corrosive, and strong enough to resist even unusual pressures.

Having described my invention, what I claim as new is—

1. A bottle-stopper consisting of an integral structure adapted to be forced into the neck of the bottle, comprising a plurality of concentric rings or bands united by inturned flanges at alternate edges, the outer ring or band inclosing or surrounding the others.

2. A bottle-stopper consisting of an integral structure comprising a ring or band turned inward and downward at one edge to form a second ring or band which is itself turned inward and upward at its opposite edge to form a third ring or band closed at its opposite edge, the structure being adapted to be forced into the neck of a bottle.

Witness my hand this 29th day of July, 1901, in the presence of two subscribing witnesses.

ARNOLD STERN.

Witnesses:

MABEL K. WHITMAN,

ALBERT A. HOVERMANN.