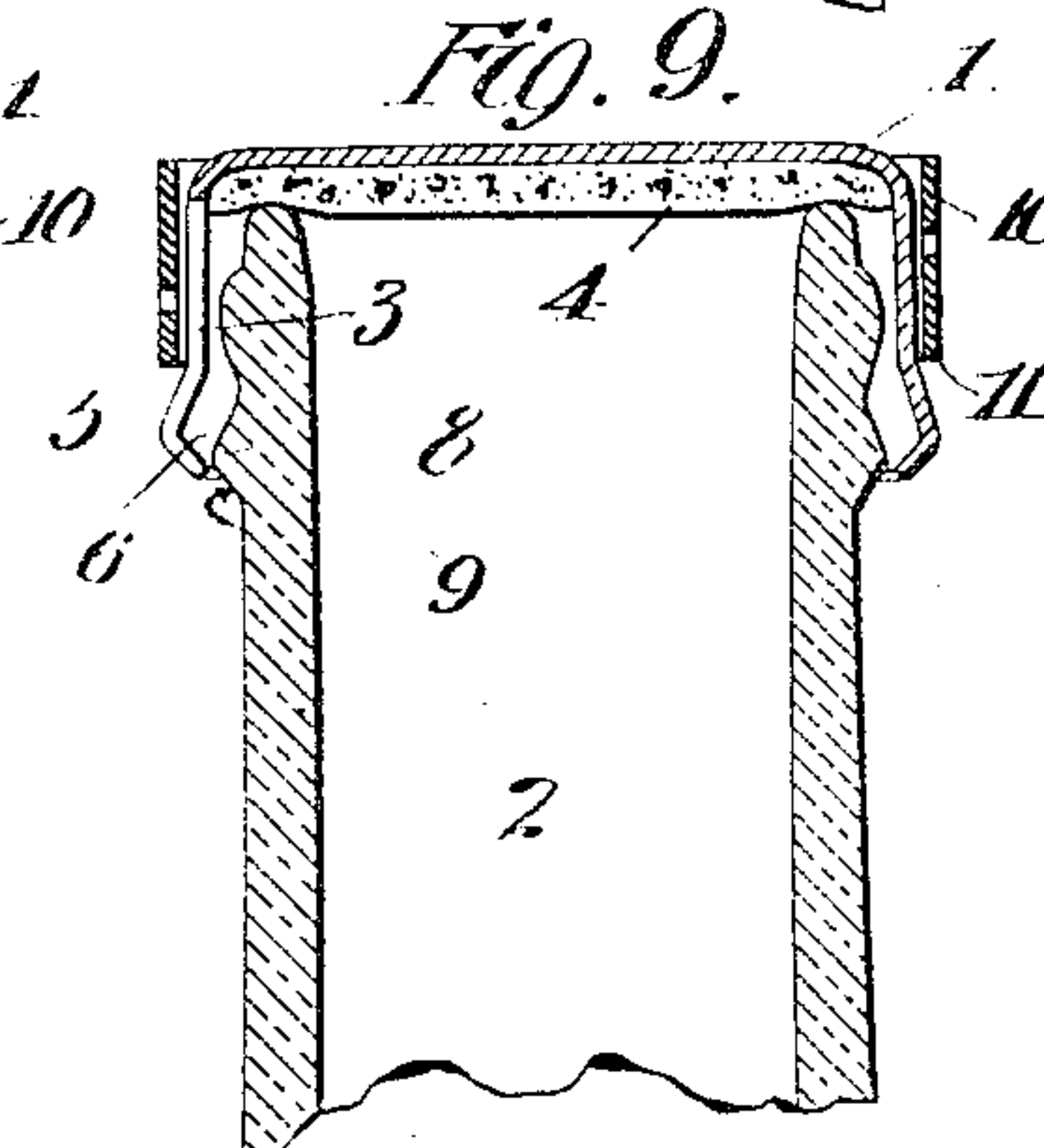
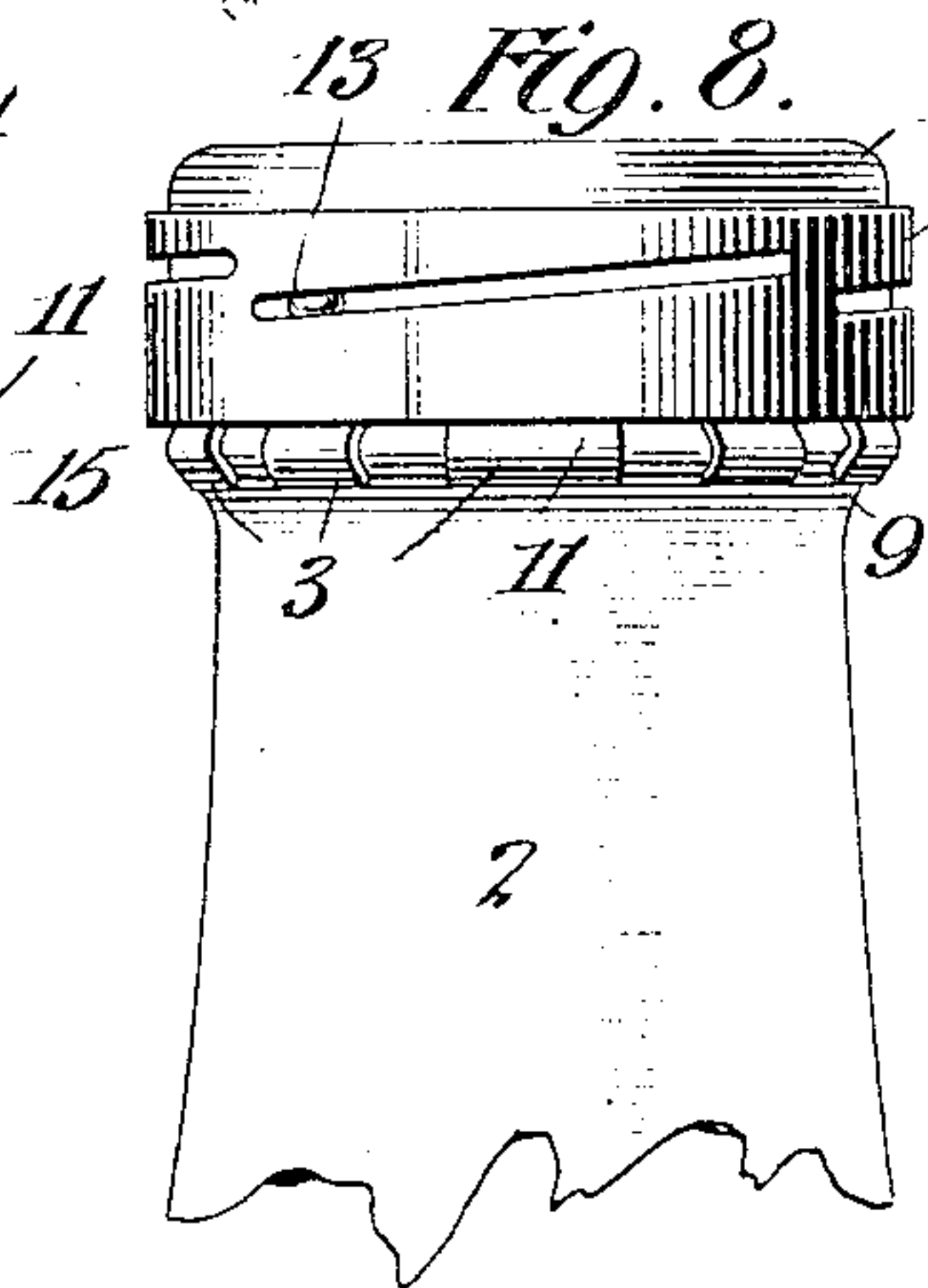
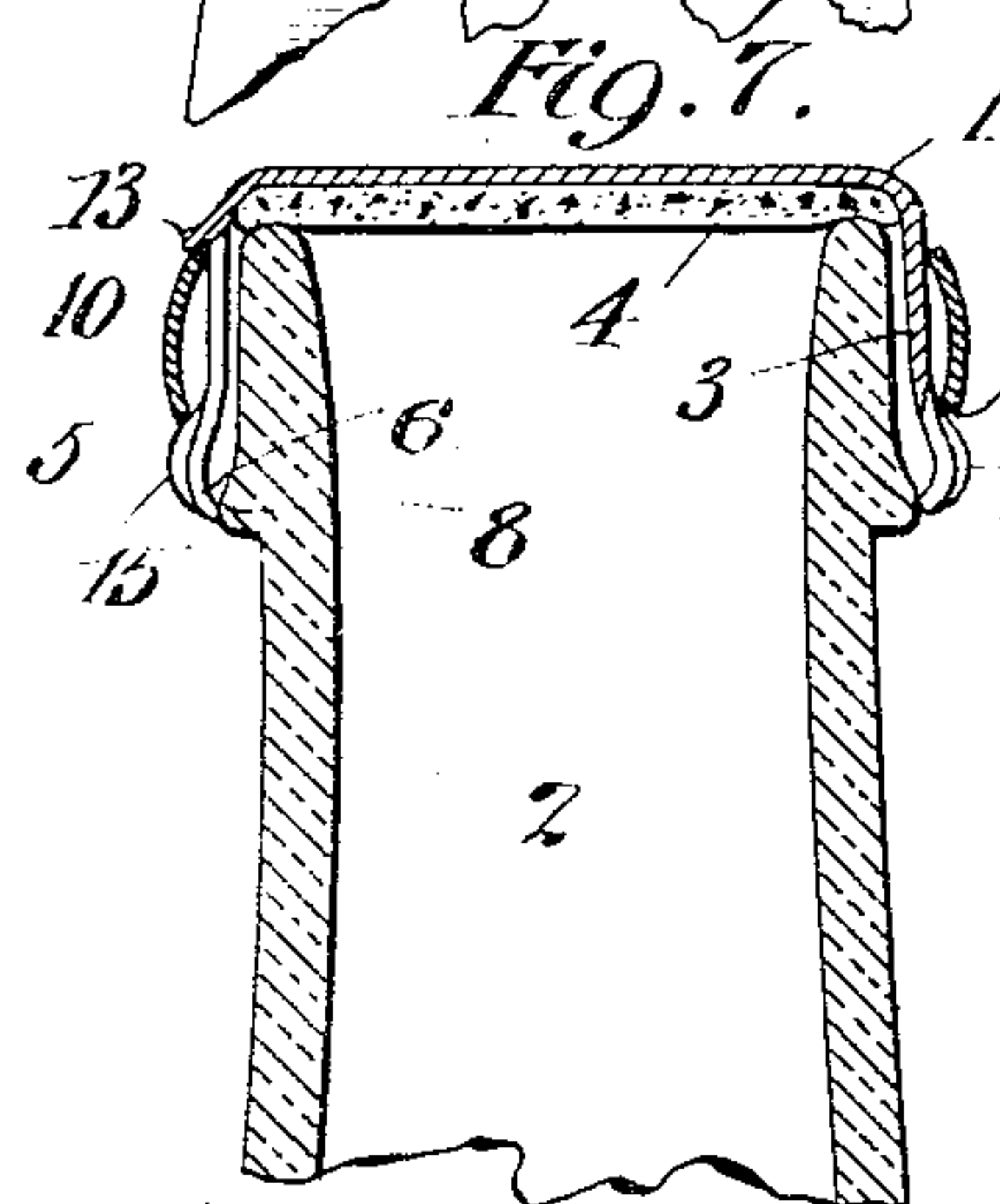
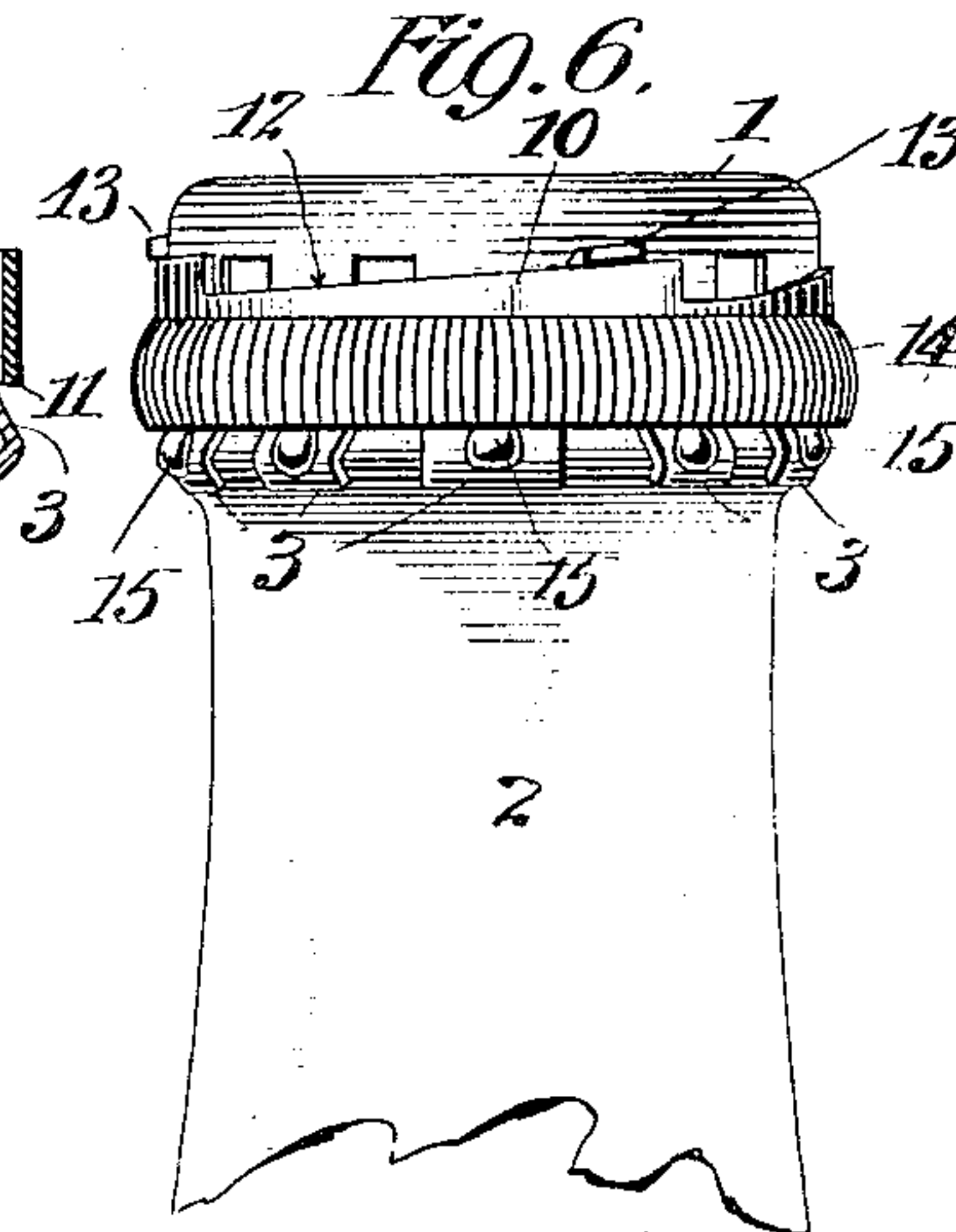
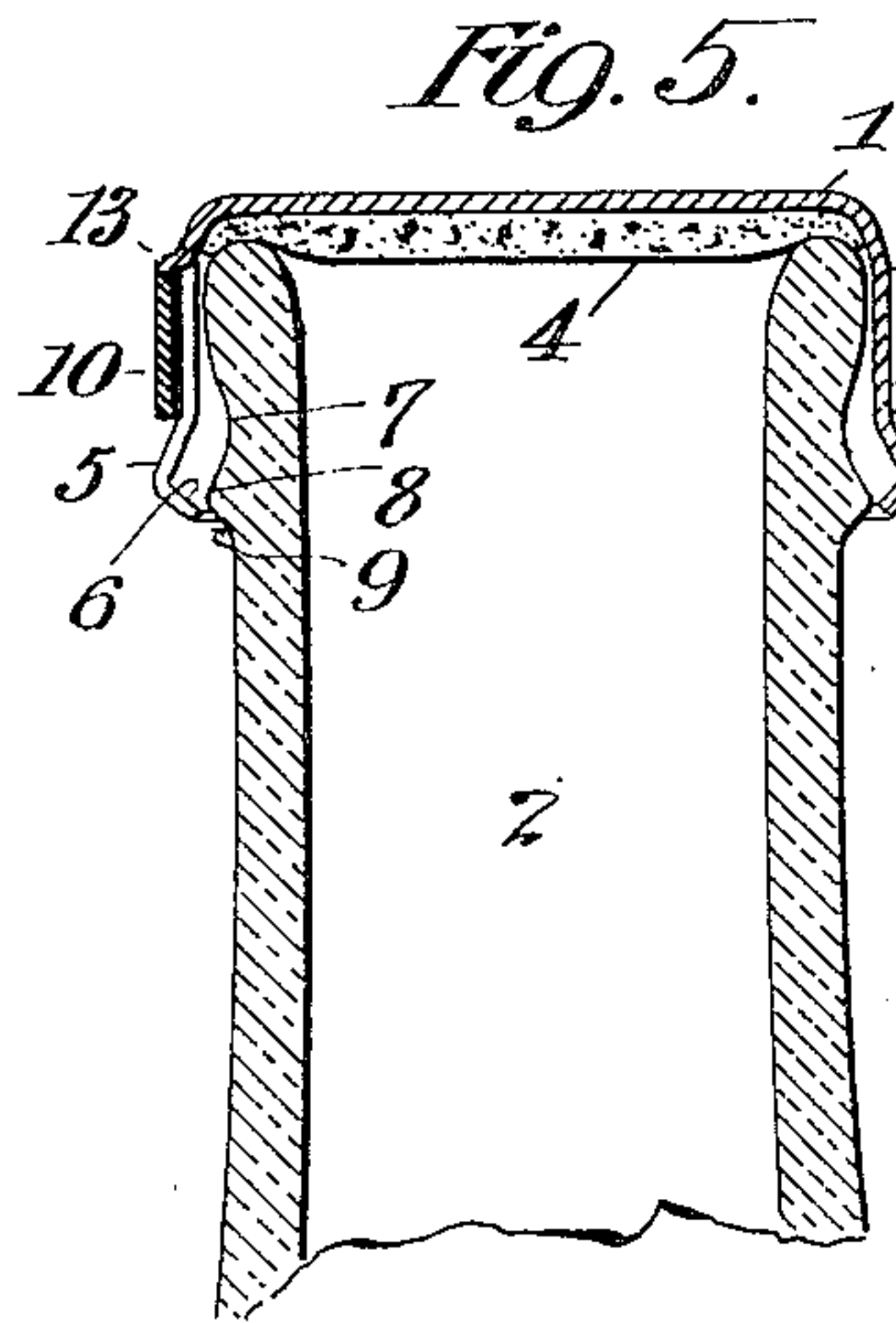
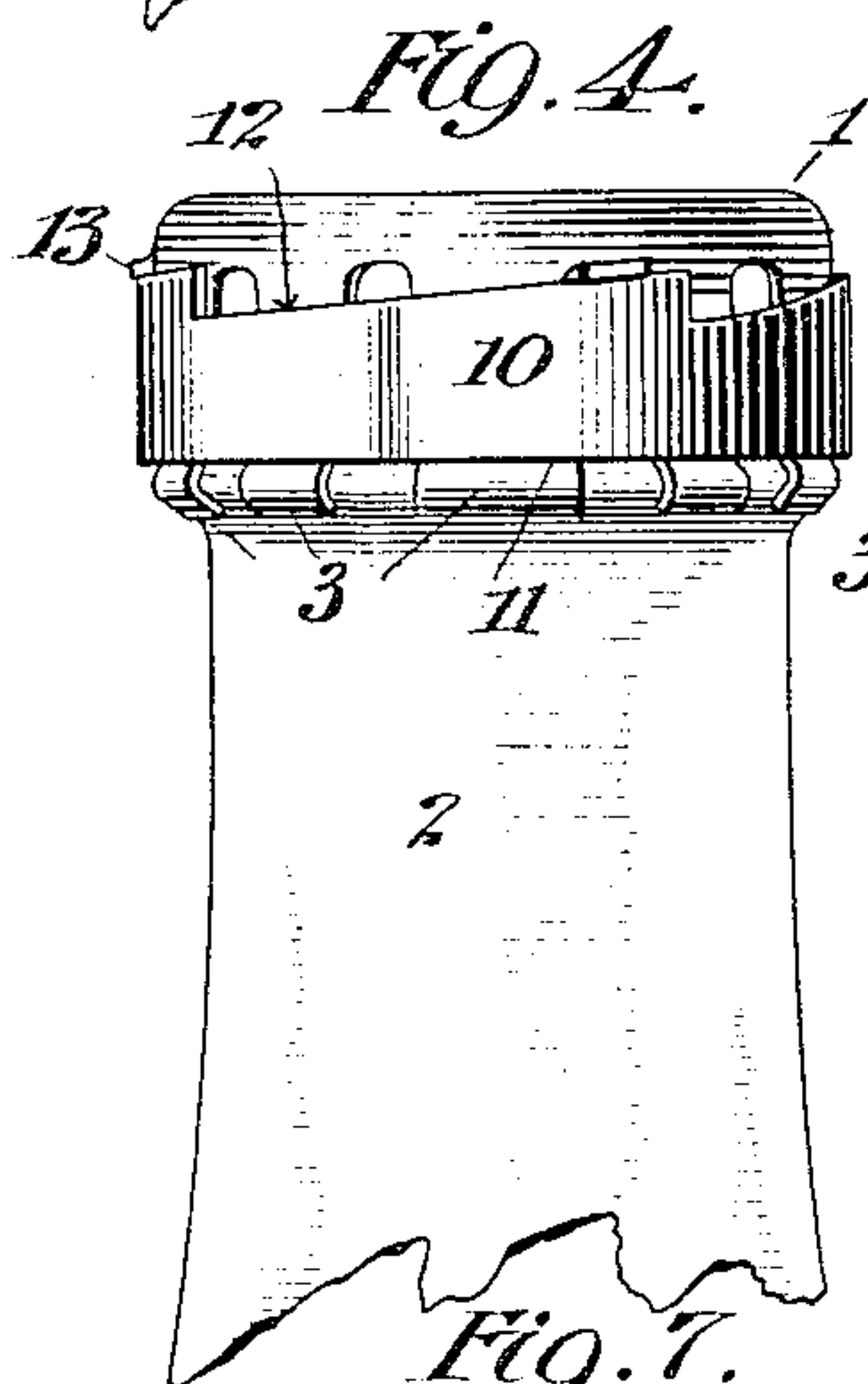
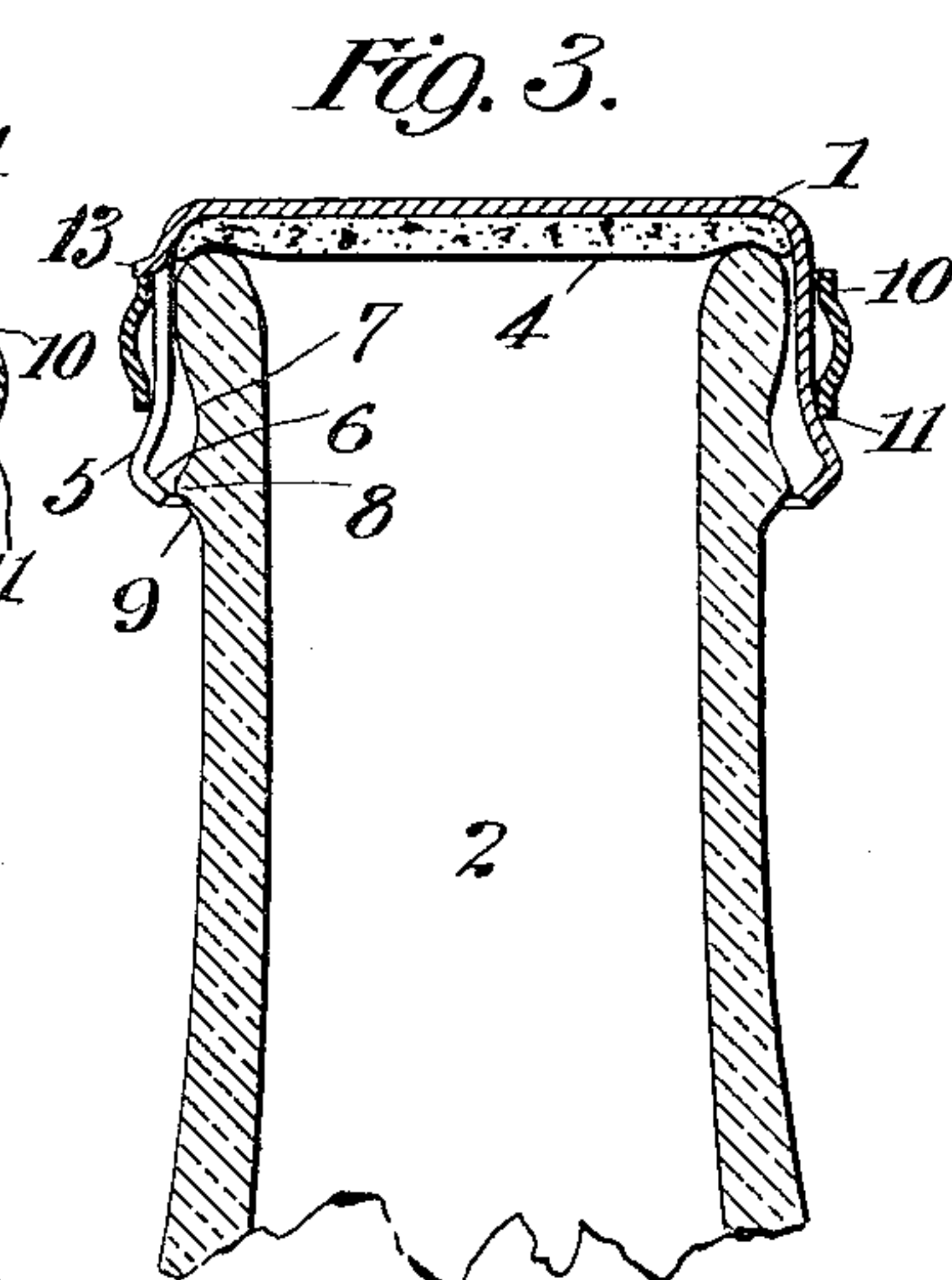
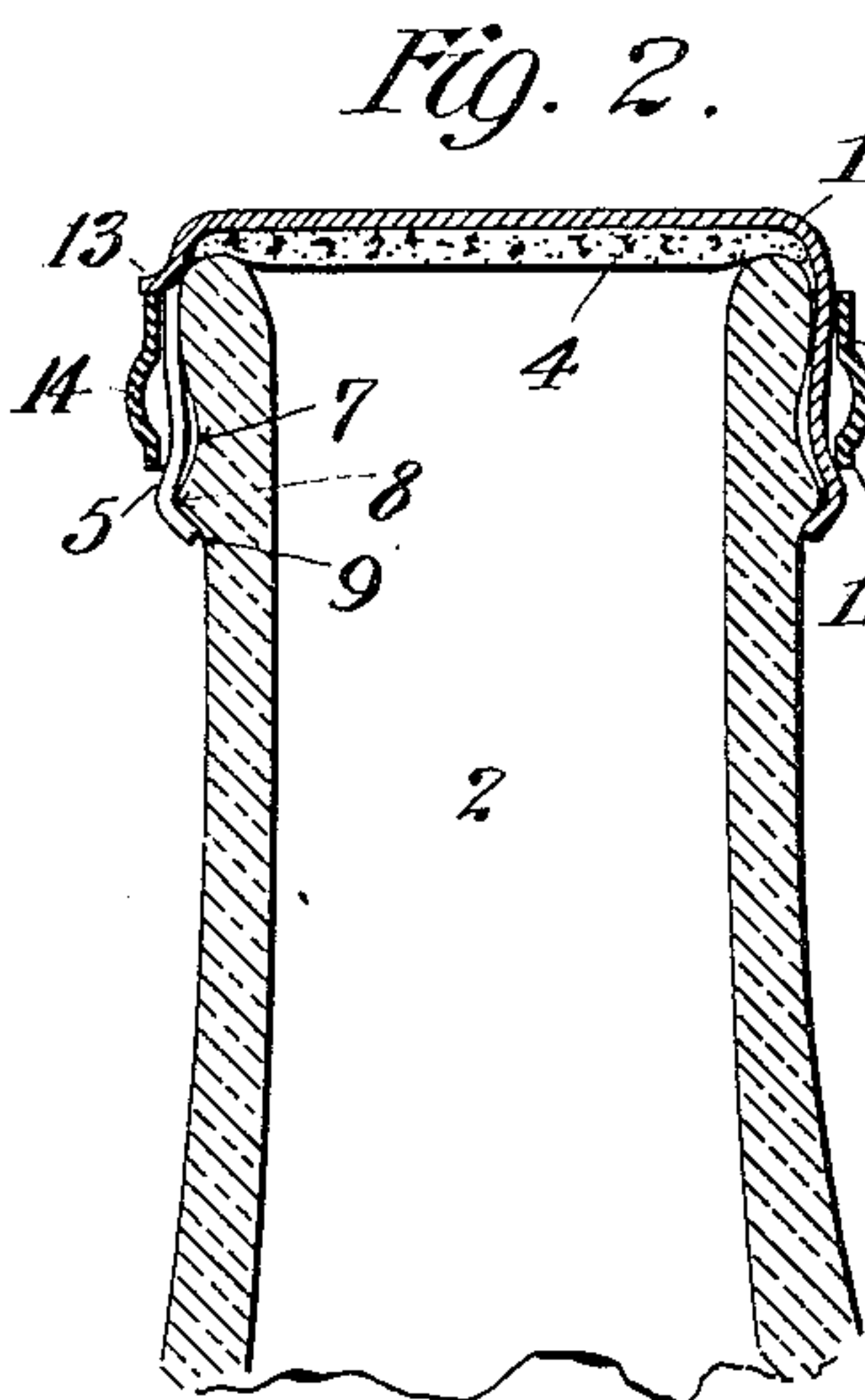
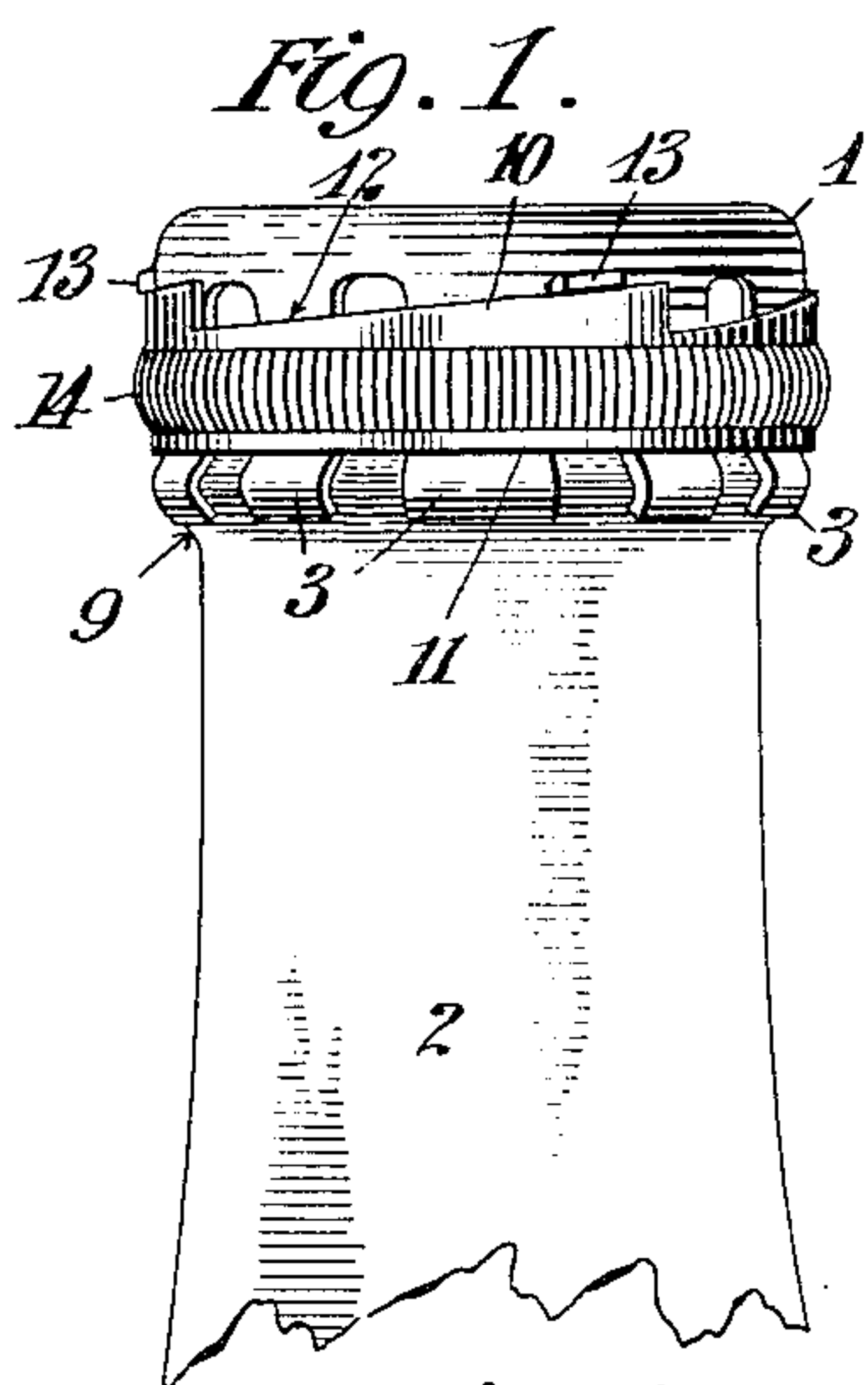


No. 824,341.

PATENTED JUNE 26, 1906.

A. W. CORDES.  
BOTTLE STOPPER.  
APPLICATION FILED DEC. 13, 1905.



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# UNITED STATES PATENT OFFICE.

AUGUST W. CORDES, OF NEW YORK, N. Y.

## BOTTLE-STOPPER.

No. 824,341.

Specification of Letters Patent.

Patented June 26, 1906.

Application filed December 13, 1905. Serial No. 291,546.

*To all whom it may concern:*

Be it known that I, AUGUST W. CORDES, a citizen of the United States, residing at the city of New York, in the borough of Manhattan and State of New York, have invented certain new and useful Improvements in Bottle-Stoppers, of which the following is a full, clear, and exact description.

My invention relates to a cap or stopper for receptacles, and pertains particularly to that class in which the cap is capable of being removed and replaced upon the receptacle, so as to reseal the same after a portion of the contents have been removed or it is desired to use the vessel for any other purpose. A receptacle-closure adapted to satisfy the foregoing purposes forms the subject of Letters Patent of the United States No. 796,734, granted to Georg Kirkegaard. In the present case I employ a cap having depending fingers like the Kirkegaard construction; but I arrange the clamping means to act upon the depending fingers in a different way.

The principal object of the present invention is to produce a cap of compact and pleasing appearance and which can be easily manipulated to engage or disengage a receptacle.

A further object of the invention is to obtain a receptacle-closure adapted to be formed cheaply of sheet metal and having a minimum number of parts.

With these and other objects in view my invention consists in the construction, combination, location, and arrangement of parts, as hereinafter set forth, and shown in the accompanying drawings, and finally particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side view of a cap or stopper embodying the principles of my invention and applied to an ordinary bottle. Fig. 2 is a sectional view of the same. Fig. 3 is a sectional view of the same, showing the parts in their unlocked or disengaged relation. Fig. 4 is a side view showing a slight modification. Fig. 5 is a sectional view of the same. Fig. 6 is a side elevation showing a still further modified construction. Fig. 7 is a section of the same in its unlocked relation. Fig. 8 shows a further slight modification, and Fig. 9 is a sectional view of the same in its unlocked relation.

In carrying out my invention I make use of a clamp-ring having cam-surfaces; but instead of having the cam-surfaces eccentric within their plane of rotation I incline them so

as to act axially or along the elements of the clamping-ring. In other words, instead of employing cam-surfaces which follow a generally spiral form I make use of cam-surfaces of a generally helical shape. This clamping-ring is organized into the structure of the cap or stopper, so as to effect the inward bending of the fingers in the same way as with the Kirkegaard construction.

Referring now to the drawings, in which like parts are designated by the same reference-sign, 1, Figs. 1, 2, and 3, designates a cap applied to a bottle or other receptacle 2 and having depending fingers 3 upon the entire periphery thereof. Within the cap 1 I inclose a disk or washer 4, of cork or other packing material, which is adapted to be pressed down on the neck of the bottle when the cap is locked thereto. The general form and construction of the cap and washer may be modified to satisfy the use to which they are applied. Each of the fingers 3 is bent or otherwise constructed to have exterior and interior cam-surfaces 5 and 6, respectively. A convenient practical construction for securing these is indicated in the drawings, in which each prong is reversely bent into a double or reversed curve, with an initially outwardly flaring cam-surface 5 and a terminal internally-bent cam-surface 6. The bottle-neck is recessed, as shown at 7, so as to accommodate the intumed part of the fingers, and has a bead 8 with a lower inclined wall 9.

The clamping-ring 10 is made with a smooth lower edge 11 and is of such a diameter as to pass exteriorly over the fingers 3 and engage the cam-surfaces 5 thereon with said lower edge. I form the upper edge of the clamping-ring 10 with a plurality of inclines or wedge-surfaces 12, which may be symmetrically disposed thereto.

13 indicates lugs or projections upon the exterior surface of the cap 1, conveniently formed by bending outward a portion of the metal thereof between the fingers, so as to produce prongs corresponding in number and position with the cam-surfaces 12.

The operation is as follows: The parts of the stopper being assembled, the clamping-ring 10 is turned so that the projections 13 lie at the lowermost parts of the cam-surfaces. Under these circumstances the clamping-ring bears against the cam-surfaces 5 at the initial parts of their inclines, so that the fingers spread outward into open position by



their natural resiliency. This condition is illustrated in Fig. 3. It is now merely necessary to turn the clamping-ring 10 a portion of a revolution, so that the projections 13 ride outward on the cam-surfaces 12. This will cause the lower edge 11 of the clamping-ring to be borne downward against the cam-surfaces 5, pressing the fingers inward. The inward movement of the fingers causes the cam-inclines 6 thereon to engage the correspondingly-inclined wall 9 of the bead 8 on the bottle, so that the fingers, and with them the cap 1, are drawn downward, so as to bind or seal the packing material 4 thereupon. It is obvious that this condition will continue until the cap is released again by turning the ring in the reverse direction.

The ring may be provided with any form of exterior lugs or projections, by which it is grasped for the turning movement. In Figs. 1, 2, and 3 I have illustrated the side of the ring slightly beaded, as shown at 14, and milled on the exterior surface of the beading, so as to give a rigid and agreeable engagement for the fingers. If desired, however, the ring may be left entirely plain upon its exterior surface, as indicated in Figs. 4 and 5.

The particular details of the construction may be widely modified and still fall within the spirit and scope of my invention. For example, a slight modification is illustrated in Figs. 6 and 7, in which the depending fingers 3 have embossed protuberances 15 thereon, so as to strengthen them and render the cam-inclines less liable to become distorted out of shape. In this construction the lower edge of the cam-ring is coincident with the edge of the beading, so as to give increased strength thereof. The manner in which the beading rides upon the cam-surfaces of the protuberances, so as to clamp the fingers, is illustrated in Fig. 7. It will be seen that in this form of construction the lower wall 9 of the beading upon the bottle is quite steep, so that the cam-incline engages the beading only on its outside edge. This is a desirable feature of construction, since it causes the wedging pressure to be applied nearer the base of the cam-inclines on the fingers, so that greater strength thereof is secured.

In Figs. 8 and 9 I have illustrated a construction in which the lug 13 is formed by embossing the metal of the cap rather than by bending outward a proportion thereof to form a prong. This construction also illustrates the cam-inclines formed by diagonal slots upon the periphery of the clamping-ring rather than by wedge-surfaces upon its upper edge. These details are presented as examples of obvious modifications embodying the essential idea of the invention and falling within its spirit and scope.

What I claim is—

1. A stopper comprising a cap having depending fingers and a clamping-ring embracing said fingers and having parts cooperating with the cap whereby the ring will move axially when rotated with respect to the cap in combination with a bottle having a shoulder with which said fingers are caused to engage by the axial movement of the ring.

2. A stopper comprising a cap having depending fingers with exterior and interior cam-surfaces, and a clamping-ring having parts cooperating with the cap and adapting it to move axially when rotated and to engage said exterior cam-surfaces.

3. A stopper comprising a cap having depending fingers with interior cam-surfaces adapted to engage a bead upon a bottle; a clamping-ring having parts cooperating with the cap whereby the ring will when rotated move downward upon the fingers to engage them in locked relation with the bottle.

4. A stopper comprising a cap having depending fingers with exterior and interior cam-surfaces, and a clamping-ring having a lower peripheral edge engaging said exterior cam-surfaces, and having cam-inclines on its upper edge adapted to engage with the cap whereby it is forced axially into clamping relation when turned.

5. A stopper comprising a cap having depending fingers with exterior and interior cam-surfaces, and a clamping-ring having inclines on its upper edge adapted to engage with the cap and having a beaded central portion adapted to be forced downward upon said exterior cam-surfaces by a circumferential movement of the ring with respect to the cap.

6. A bottle or jar having an annular exterior shoulder near its mouth in combination with a stopper comprising a cap having depending fingers and having a plurality of lugs or projections on its exterior surface, and a clamping-ring having inclines adapted to engage said lugs or projections to force the ring axially and move the fingers inward to engage said shoulder on the bottle.

7. A stopper comprising a cap having depending fingers embossed with strengthening protuberances, and having exterior and interior cam-surfaces, and a beaded clamping-ring having cam-inclines cooperating with the cap by which it is forced axially when turned so as to engage the exterior cam-surfaces and force the fingers inward.

In witness whereof I subscribe my signature in the presence of two witnesses.

AUGUST W. CORDES.

Witnesses:

FRANK S. OBER,  
WM. A. ROSENBAUM.