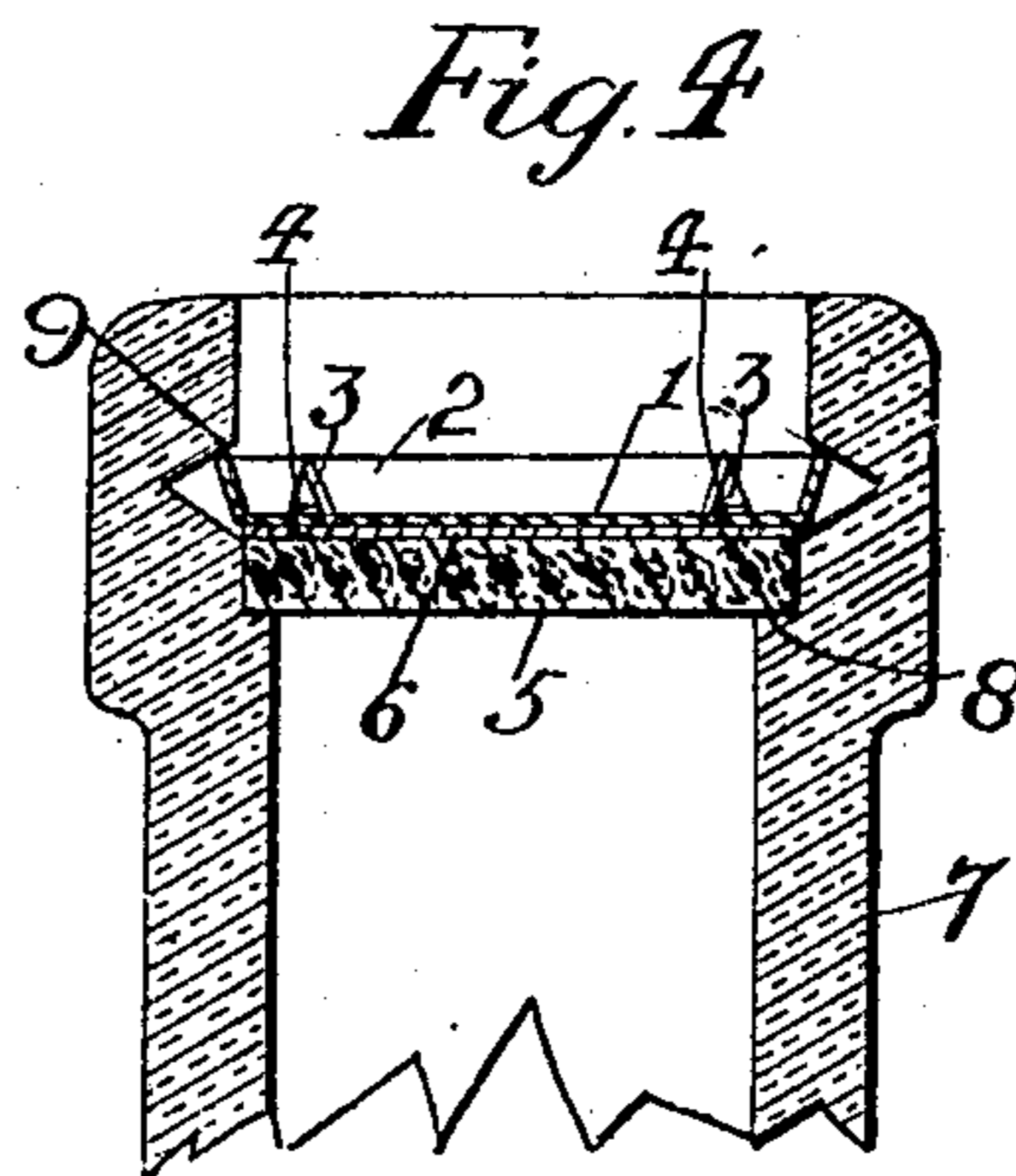
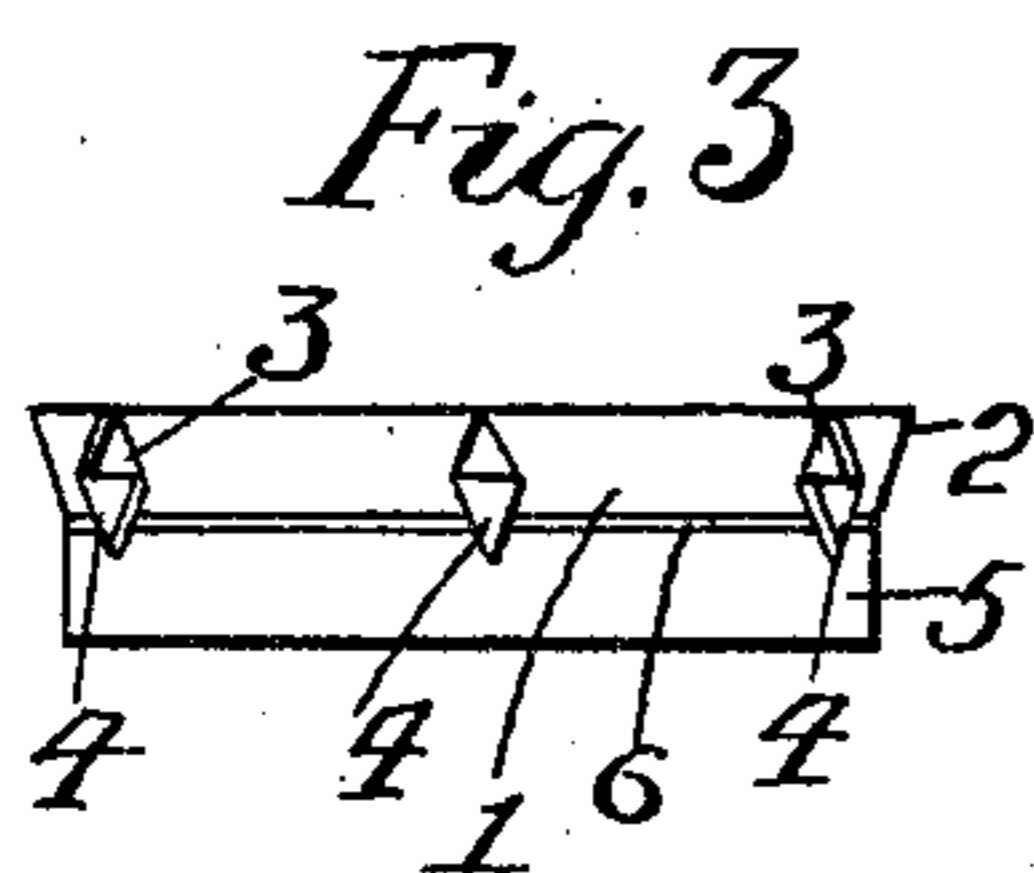
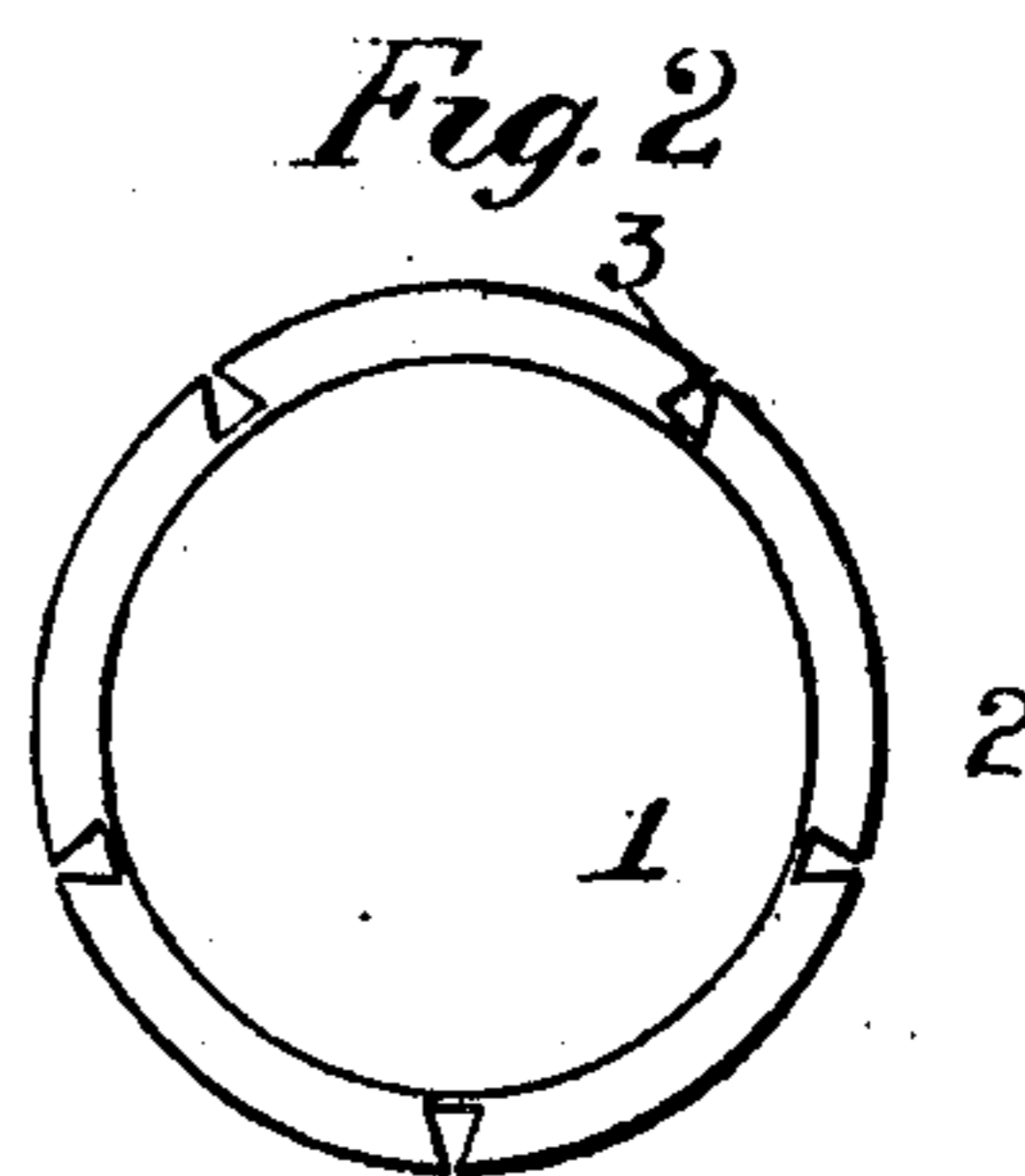
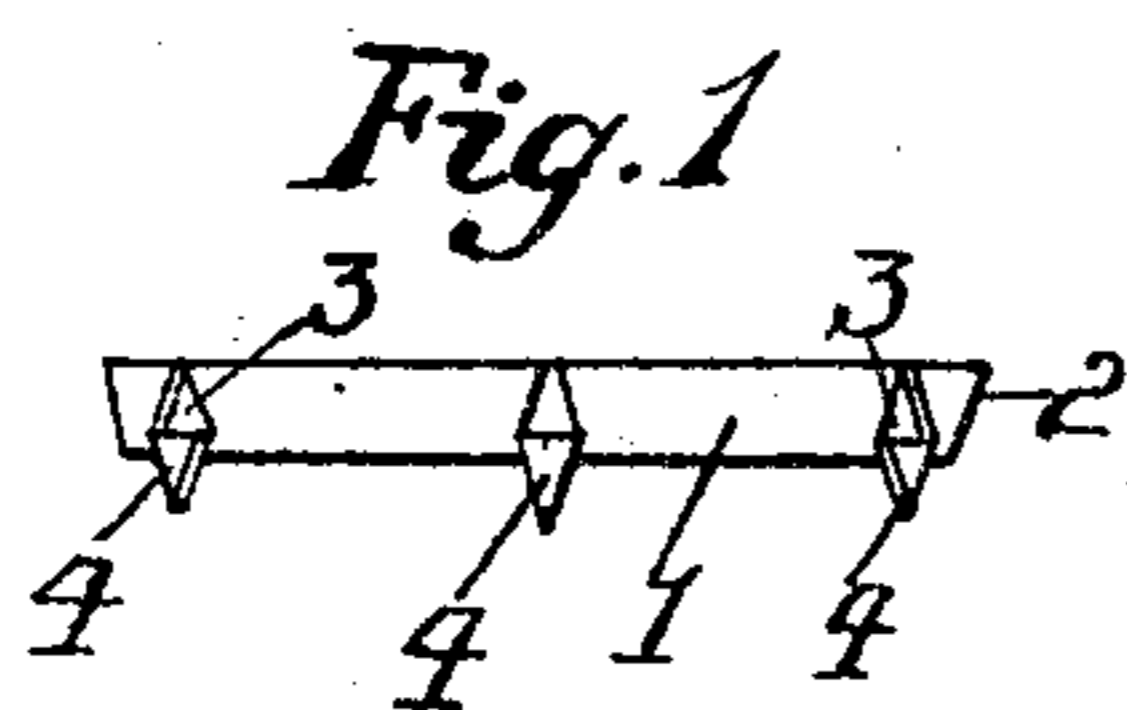


No. 871,364.

PATENTED NOV. 19, 1907.

C. R. SCHMIDT.
BOTTLE CLOSURE.

APPLICATION FILED JUNE 29, 1907.



WITNESSES

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CHARLES R. SCHMIDT, OF BALTIMORE, MARYLAND.

BOTTLE-CLOSURE.

No. 871,364.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed June 29, 1907. Serial No. 381,459.

To all whom it may concern:

Be it known that I, CHARLES R. SCHMIDT, a citizen of the United States, residing at Baltimore, in State of Maryland, have invented certain new and useful Improvements in Bottle-Closures, of which the following is a specification.

This invention has relation to bottle closures and relates in particular to that class of closures known as "inner seal" closures, wherein an elastic closure portion, such as a cork disk, and a metallic closure portion consisting of a disk having a slitted and upturned edge, are inserted in the neck of the bottle and retained in place by the engagement of the upturned edge of the metallic disk with a shoulder on the inside of the neck of the bottle.

In bottle closures of the above described character it is customary to secure the metallic disk and the cork disk together by means of shellac or similar adhesive, the adhesive being applied and allowed to harden so as to secure the disks together before the latter are placed in the bottle, and the sealing of the bottle being wholly dependent upon the elasticity of the cork disk.

In order to dry the shellac quickly it is customary to heat the closure after the two portions have been secured together and this heating dries up the cork and deprives it of some of its elasticity and renders it more or less pervious until it comes in contact with the liquid in the bottle. In the meantime some of the gas from the liquid will escape through and around the cork.

My present invention has for its object the provision of novel means for attaching the cork or other elastic disk to the metallic disk and has for its further object the provision of means for hermetically sealing the closure in the bottle after its insertion therein and independently of the sealing due to the elasticity of the elastic disk.

In carrying my invention into effect I employ a disk of cork or other suitable elastic material and a metallic disk having an upturned edge but instead of securing these disks together by means of shellac, I form teeth in the edge of the metallic disk which are bent around reversely to the upturned edge and have their points sunk into the elastic disk, whereby the two disks are firmly secured together. Before securing the disks together I preferably coat the

soft waxy material, such as paraffin, which is softened or melted preferably by steaming the elastic disks in drums after the waxy material has been applied so as to cause the waxy material to close all holes, cracks, seams or other interstices in the elastic disk and after the closure has been placed in the bottle, I heat the closure so as to remelt the waxy material and cause it to spread and seal the joints or meeting surfaces of the elastic disk and the bottle neck thereby securing a hermetic seal independent of or in addition to the sealing effect secured by the elastic disk.

Referring to the accompanying drawing Figure 1 is a side elevation of the metallic disk constructed according to my improvements. Fig. 2 is a top plan view of the same. Fig. 3 is a side elevation of the metallic disk and the cork disk secured together; and Fig. 4 is a vertical sectional view of the neck of a bottle with my improved closure in position therein.

The several views are made on an enlarged scale for the purpose of clearly showing the construction and the metallic disk which is designated 1 is formed with an upturned edge 2 which flares outwardly to a slight degree. The upturned edge 2 is slitted at 3 so as to form projections or teeth 4 and these teeth are bent in a reverse direction to the upturned edge 2 and are compressed inwardly towards the center of the disk so as to firmly clasp the edge of the cork disk, designated 5. A layer of waxy material 6, such as paraffin or other substance which will soften or melt at a comparatively low temperature, is preferably interposed between the cork disk 5 and the metallic disk 1, this material being preferably applied very thin and the cork disks with the applied waxy material being heated in drums so as to hermetically close all holes, seams, cracks or other orifices in the cork disk.

The closure shown in its complete form in Fig. 3 is inserted in the bottle neck 7 as shown in Fig. 4, the lower surface of the cork disk 5 bearing at its edge on a shoulder 8 and the upturned edge 2 of the metallic disk bearing against an angular shoulder 9. After the closure has been inserted in the bottle, if the waxy material 6 is employed, the latter is softened or melted either by reheating it or by the compression necessary to seat the closure so as to spread and fill up and close the joints at the meeting surfaces or points of contact of

the cork disk and the neck of the bottle. The angular shoulder 9 serves to take up any little differences that may exist in the thickness of the cork disks and the cork disk fits
5 snugly in the neck above the shoulder 8 so that but a very small quantity of waxy material will suffice to form a hermetic seal at this point.

I claim:

10 1. A bottle closure comprising a metallic disk having an upturned edge extending directly upwards from the disk and downturned teeth and an elastic disk engaged by the downturned teeth.

15 2. A bottle closure comprising a metallic disk having an upturned edge extending directly upward from the disk and an elastic disk, said metallic disk having teeth formed on its edge and said teeth extending down-

wardly and clasping the edge of the elastic 20 disk.

3. The combination with a bottle neck having a shoulder on its inner surface and an angular shoulder above said first named
shoulder of an elastic disk seating on the 25 first named shoulder and a metallic disk bearing on the elastic disk and having an upturned edge extending directly upwards from the disk and engaging said angular
shoulder and downturned teeth engaging the 30 elastic disk.

In testimony whereof I have affixed my signature, in presence of two witnesses.

CHARLES R. SCHMIDT.

Witnesses:

MINNIE WOODLE,
JOS. B. CONNOLLY.