

E. A. MATTHIAS.
STOPPERING BOTTLES OR OTHER VESSELS.
APPLICATION FILED MAY 24, 1907.

900,110.

Patented Oct. 6, 1908.

2 SHEETS—SHEET 1.

Fig. 1.

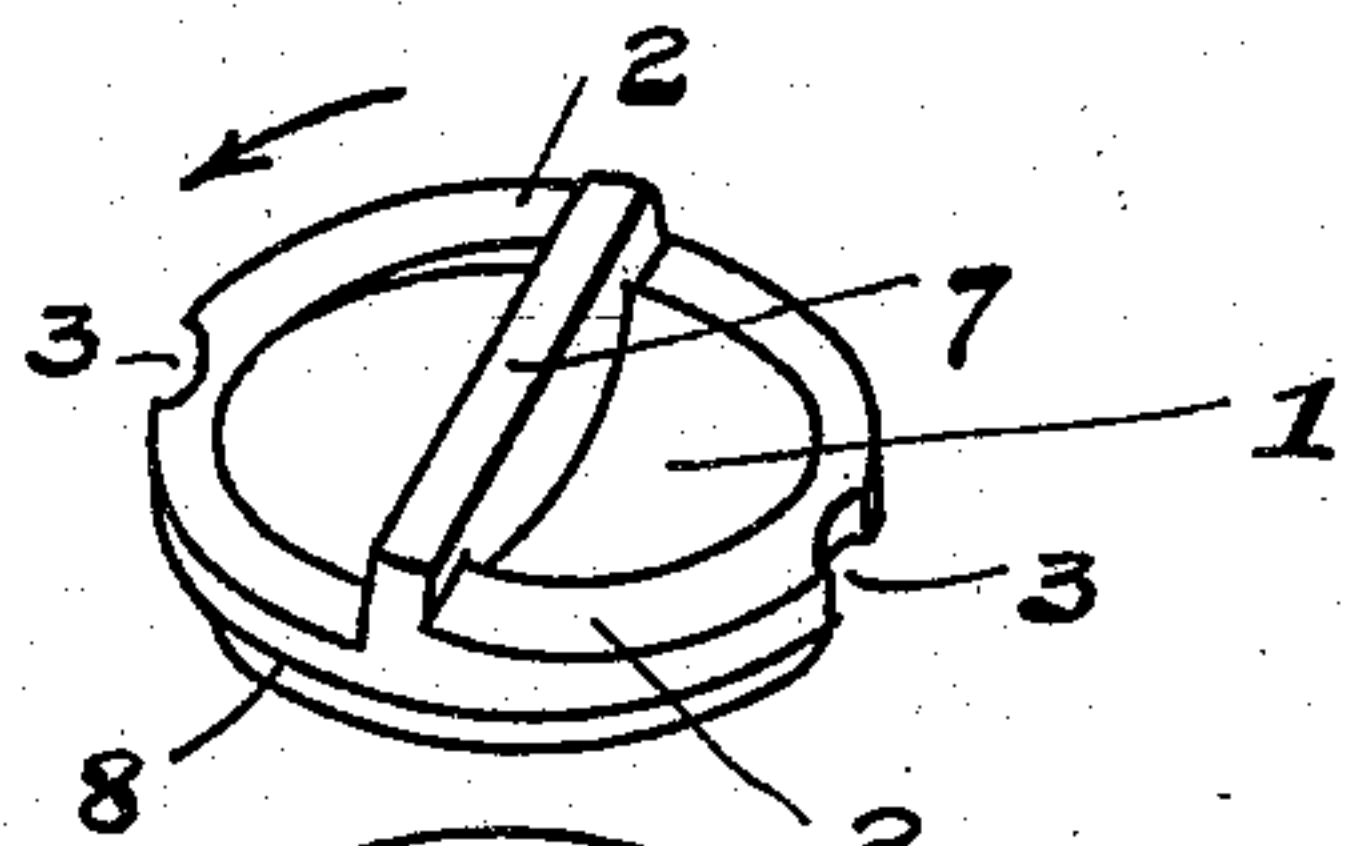


Fig. 2.

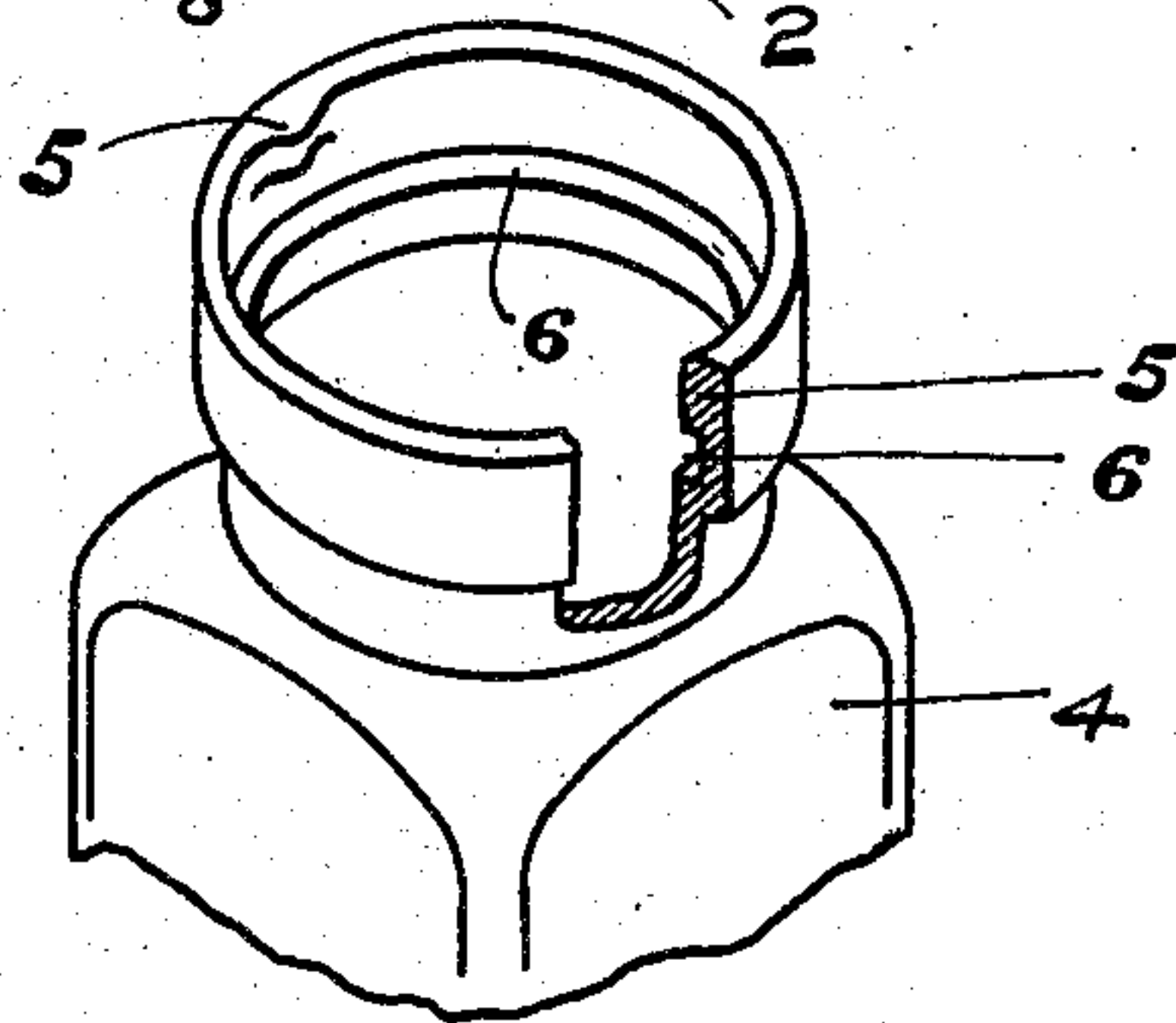


Fig. 3.

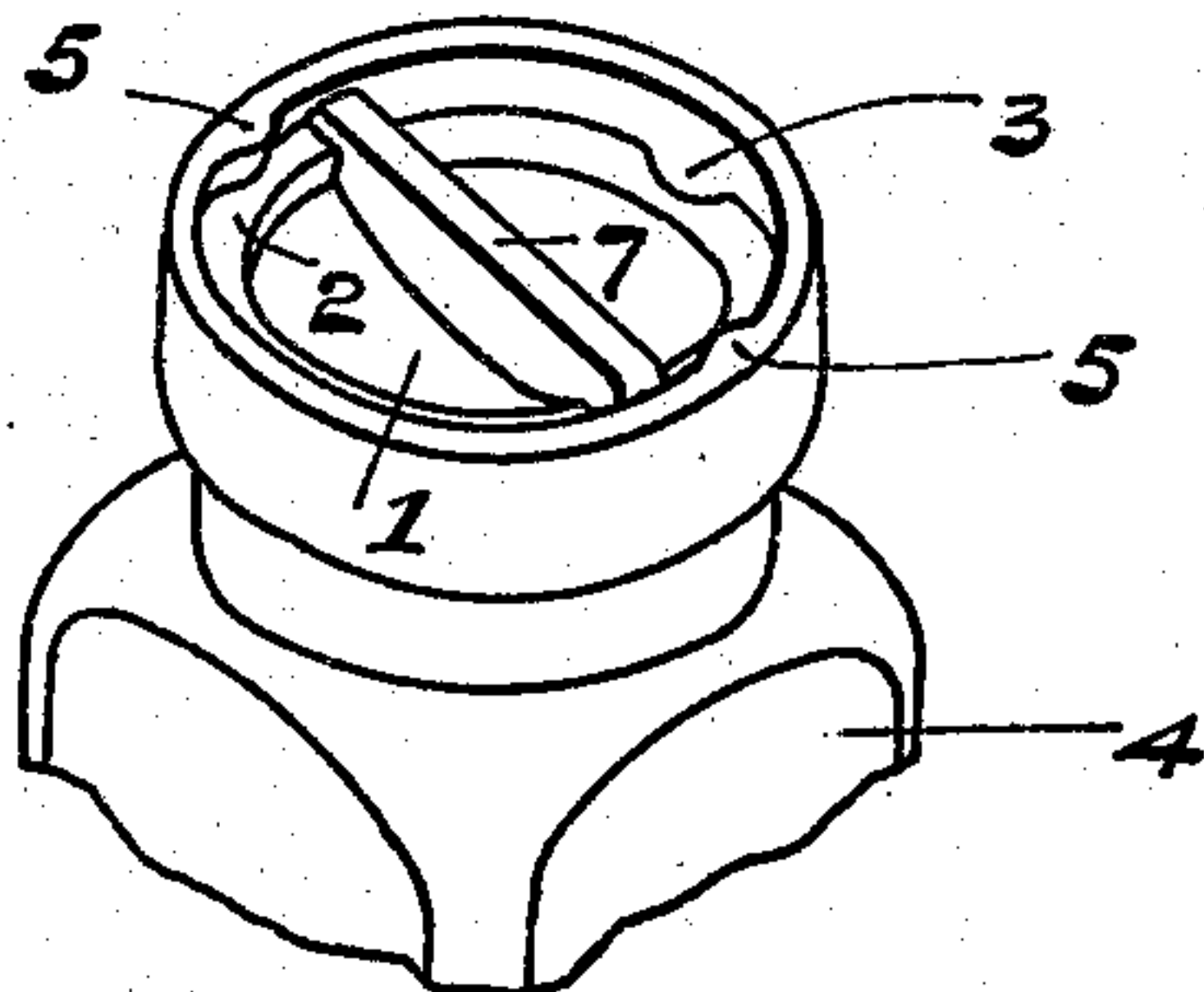
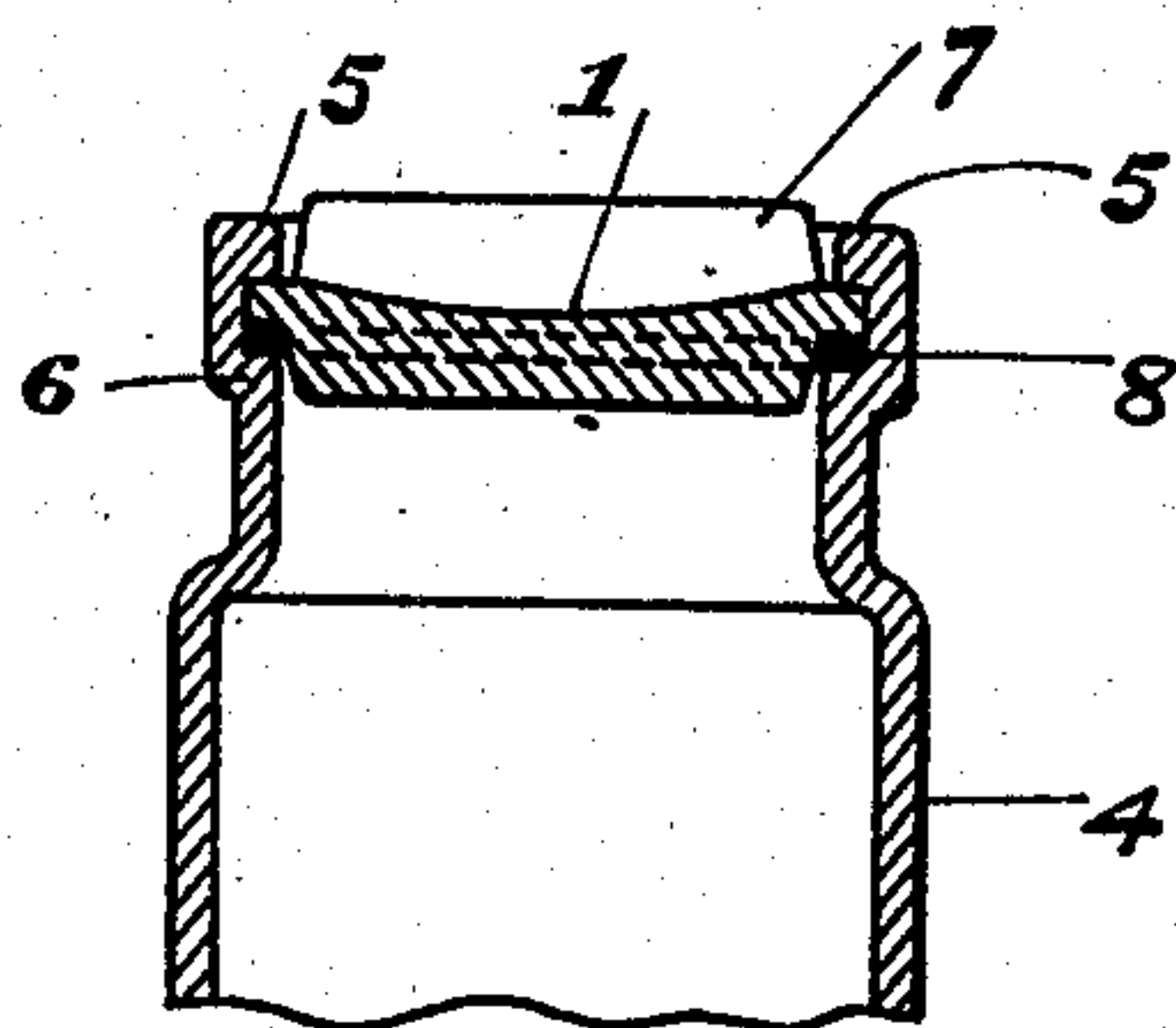


Fig. 4.



Witnesses.

A. J. Davis

Inventor.

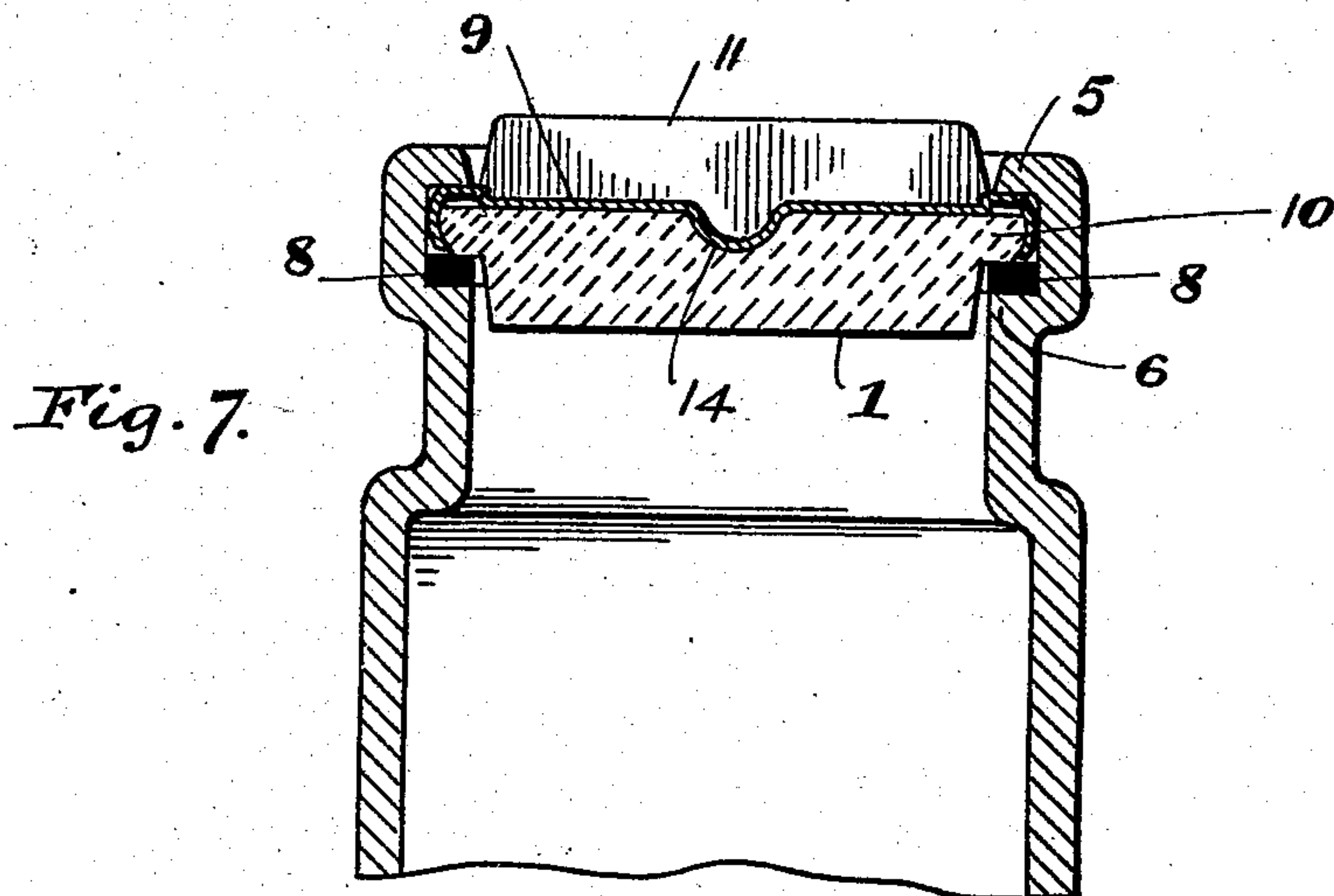
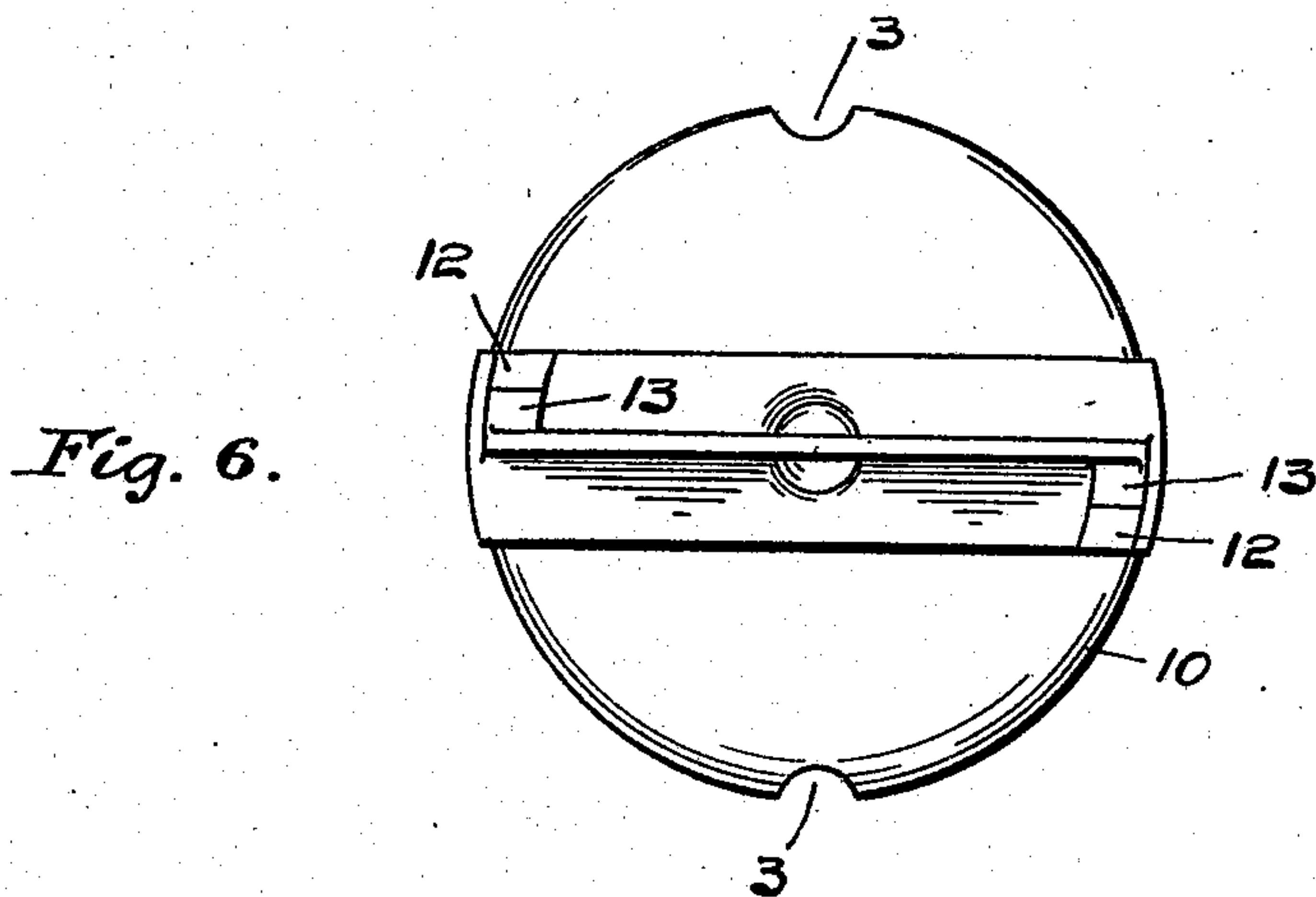
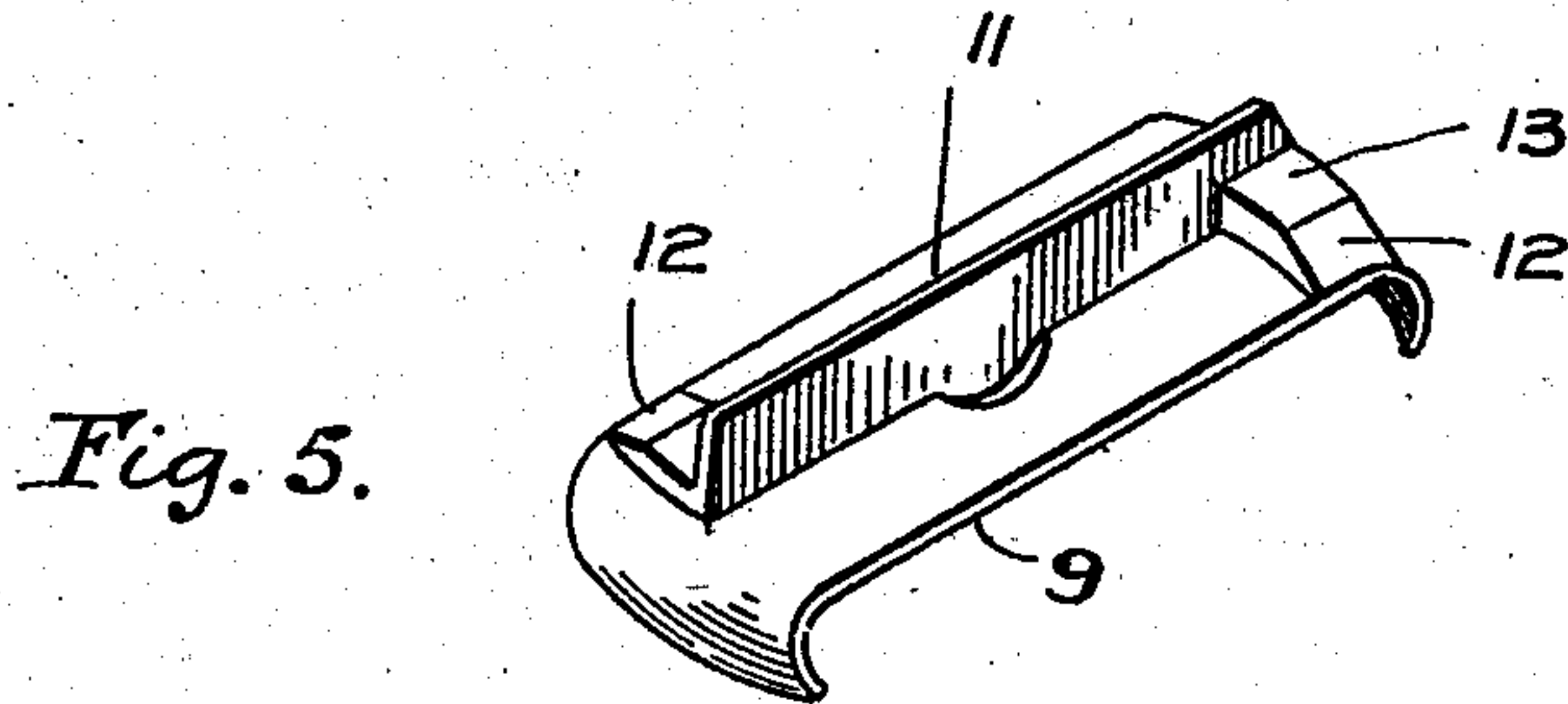
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2 SHEETS—SHEET 2.



Witnesses.

A. J. Davies

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UNITED STATES PATENT OFFICE.

EDWARD ALEXANDER MATTHIAS, OF LIVERPOOL, ENGLAND.

STOPPERING BOTTLES OR OTHER VESSELS.

No. 900,110.

Specification of Letters Patent.

Patented Oct. 6, 1908.

Application filed May 24, 1907. Serial No. 375,512.

To all whom it may concern:

Be it known that I, EDWARD ALEXANDER MATTHIAS, a subject of Great Britain, residing at Liverpool, England, have invented certain new and useful Improvements in Stoppering Bottles or other Vessels, of which the following is a specification.

This invention relates to improvements in that type of stopper for bottles or the like vessels in which inclined surfaces upon the stopper are adapted to engage abutments on the neck of the bottle and so press the stopper upon a seating in the bottle neck.

I have illustrated my invention in the accompanying drawings in which

Figures 1. and 2. are respectively, a perspective view of a stopper showing the inclined planes upon the top surface thereof, and of a bottle neck showing the projections; Fig. 3. being an analogous view with the stopper inserted; Fig. 4. is a vertical medial section through the stopper and bottle neck; Fig. 5. is a perspective view of a loose band carrying the inclined planes; Fig. 6. being a plan showing the band *in situ* on the stopper; Fig. 7. is a section through the stopper and band of Figs. 5 and 6 when the stopper is in place in the bottle.

When the inclined planes are integral with the stopper the top surface of the stopper 1 is formed with inclined planes 2 extending round the upper surface edge of the stopper and abutting against the thumb piece 7. Indents 3 are provided in the edge of the rim of the stopper. When the stopper is inserted in the neck of the bottle 4, these indents pass the projections 5 which are formed in the neck of the bottle above the ledge 6. If the stopper be now rotated by the thumb or ridge piece 7 in the direction of the arrow Fig. 1., the stopper will be forced axially downwards by reason of the wedge action of the inclined planes 2 engaging the projections 5, and the rubber washer 8 will be compressed on to the ledge 6, thus making an air tight joint; the full diametral extension of the thumb piece 7 across the inclined planes 2 serves as a stop to limit the rotation of the stopper. The stopper is released by rotating it in a contrary direction until the indents 3 are beneath the projections 5, when it may be withdrawn.

Instead of forming the inclined planes upon the stopper itself, they may be stamped out of a metal band 9, as indicated in Fig. 5., which is then adapted to be sprung over the

upper flange 10 of the stopper and to be rotatable about this flange. The band is provided with an upstanding ridge or fin 11 for rotating the band, and inclined surfaces 12 are also provided at the circumferential ends of the band to engage the projections 5 in the bottle neck. These inclined surfaces 12 preferably terminate in short horizontal planes 13 where they abut against the ridge or fin, this latter acting as a stop to locate the stopper in its locked position and the short horizontal planes serving to retain the stopper in this locked position by the projections bearing upon them. A recess 14 is cast in the stopper to receive a central boss on the band 9 for the purpose of keeping the band central when being rotated. There is in this case no relative movement between the stopper and the bottle ledge, but when the stopper is inserted the indents 3 pass the projections 5 and the band 9 is then rotated by means of the ridge or fin 11—the stopper remaining stationary—until the inclined planes 12 engage the projections 5 inside the bottle neck and the stopper is forced down on its seating, which in this case is the fixed rubber ring 8 resting upon the ledge 6. Any sticking of the stopper against rotation, which frequently arises when there is relative movement between the rubber ring and the fixed ledge, is entirely eliminated.

What I claim as my invention and desire to secure by Letters Patent is:—

1. In combination, a bottle neck, projections within said bottle neck, a stopper, circumferential inclined projections on the stopper surface adapted to engage the said bottle neck projections, and a diametral thumb piece joining together the inclined projections and extending across the stopper so as to form a limiting abutment for the projections, substantially as described.

2. In combination, a bottle neck, projections therein, a stopper provided with indents to pass the projections, a cap piece mounted on the stopper so as to be rotatable relatively thereto, and circumferential inclined planes on the cap piece adapted to engage the projections in the bottle neck, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

EDWARD ALEXANDER MATTHIAS.

Witnesses:

A. J. DAVIES,
H. WATSON.