

No. 889,874.

PATENTED JUNE 2, 1908.

F. DINGMAN.
DEVICE FOR SEALING BOTTLES.
APPLICATION FILED JAN. 27, 1908.

Fig. 1.

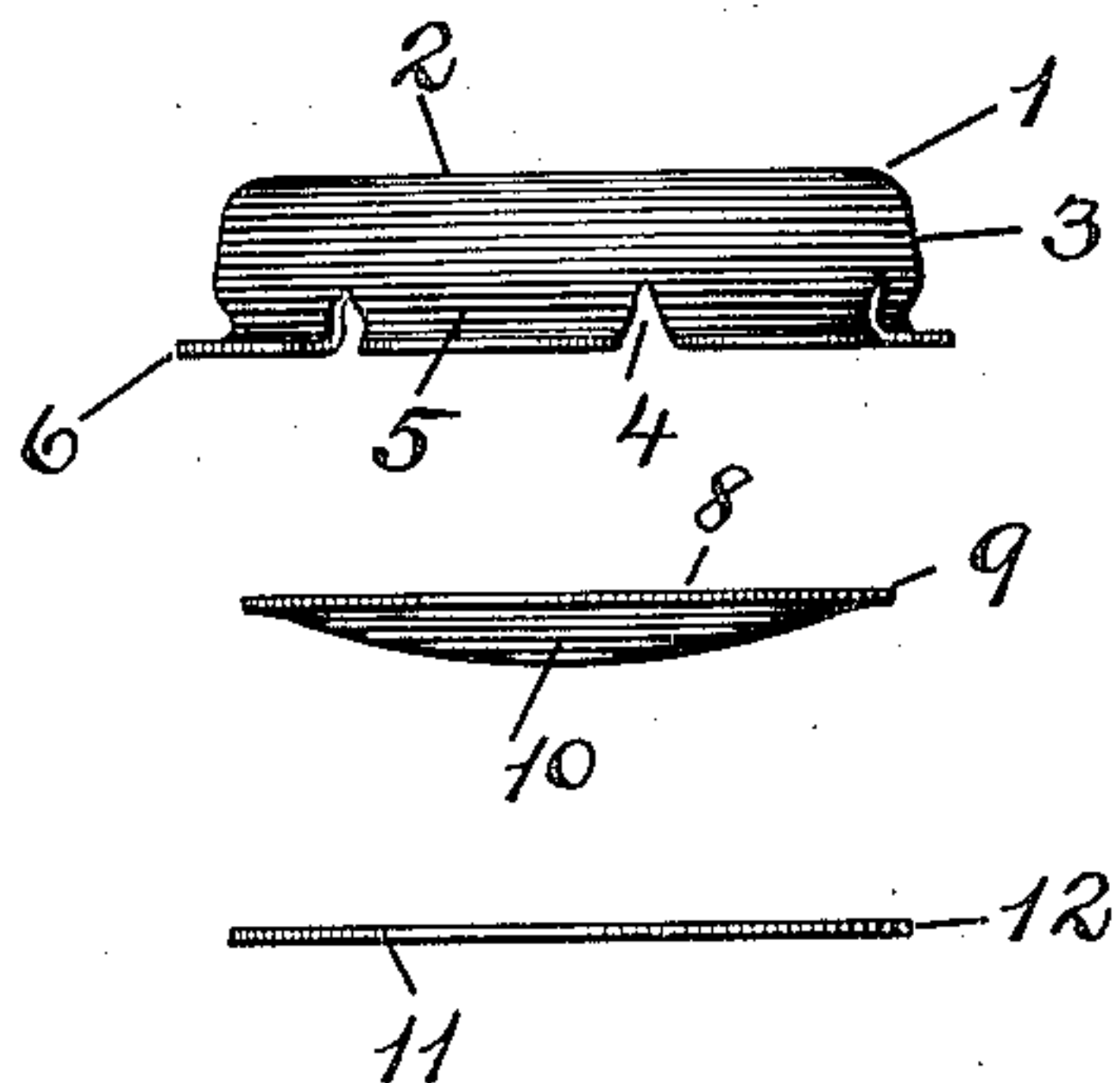


Fig. 2.

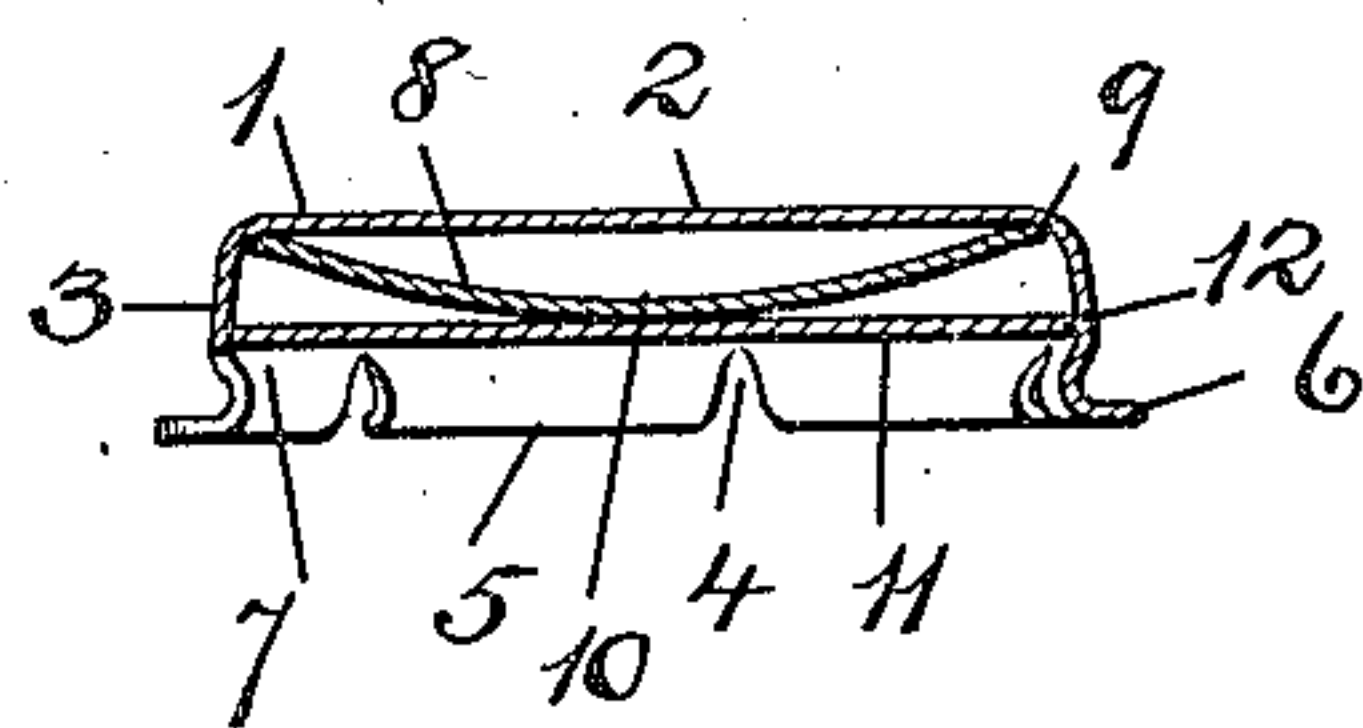


Fig. 3.

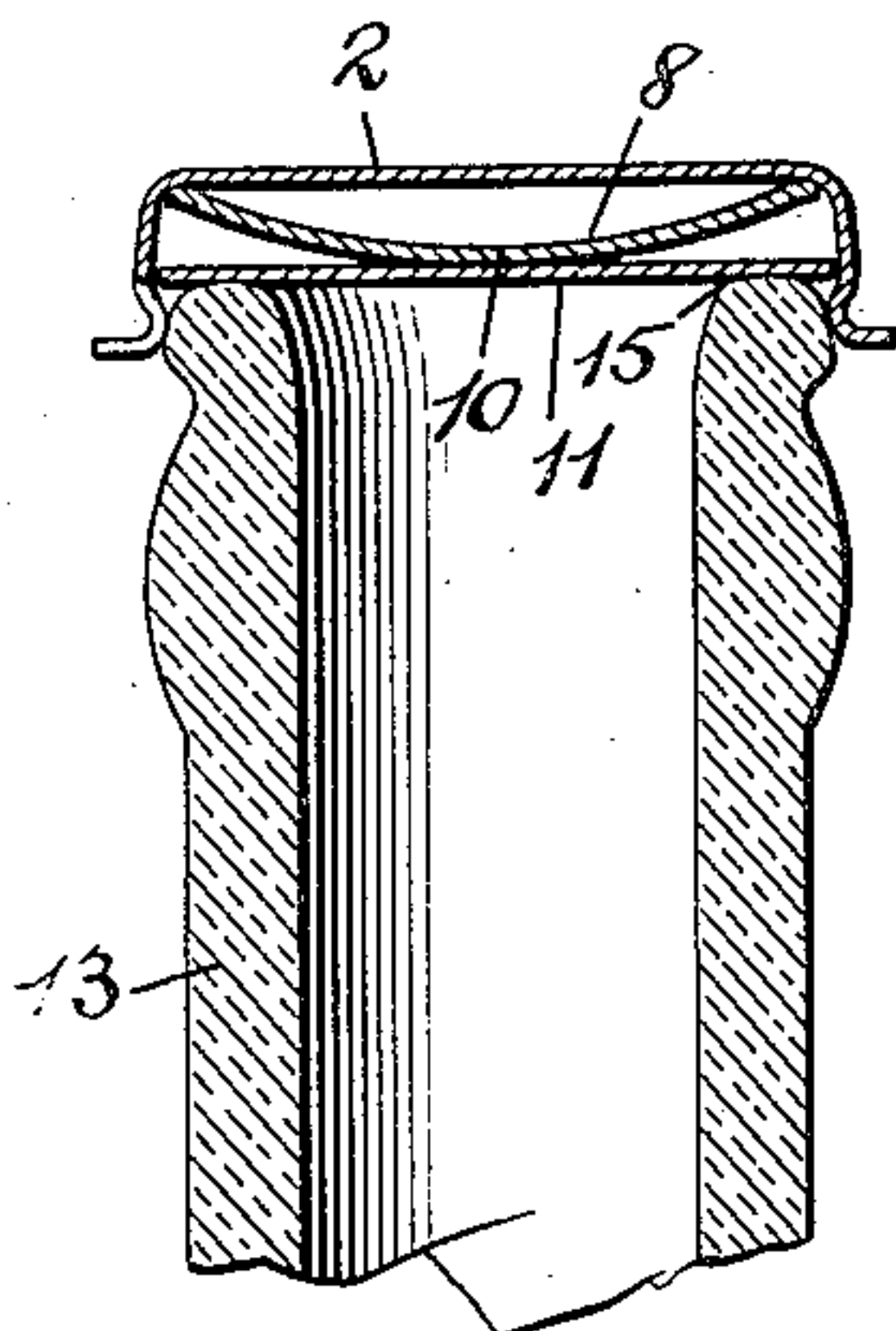


Fig. 5.

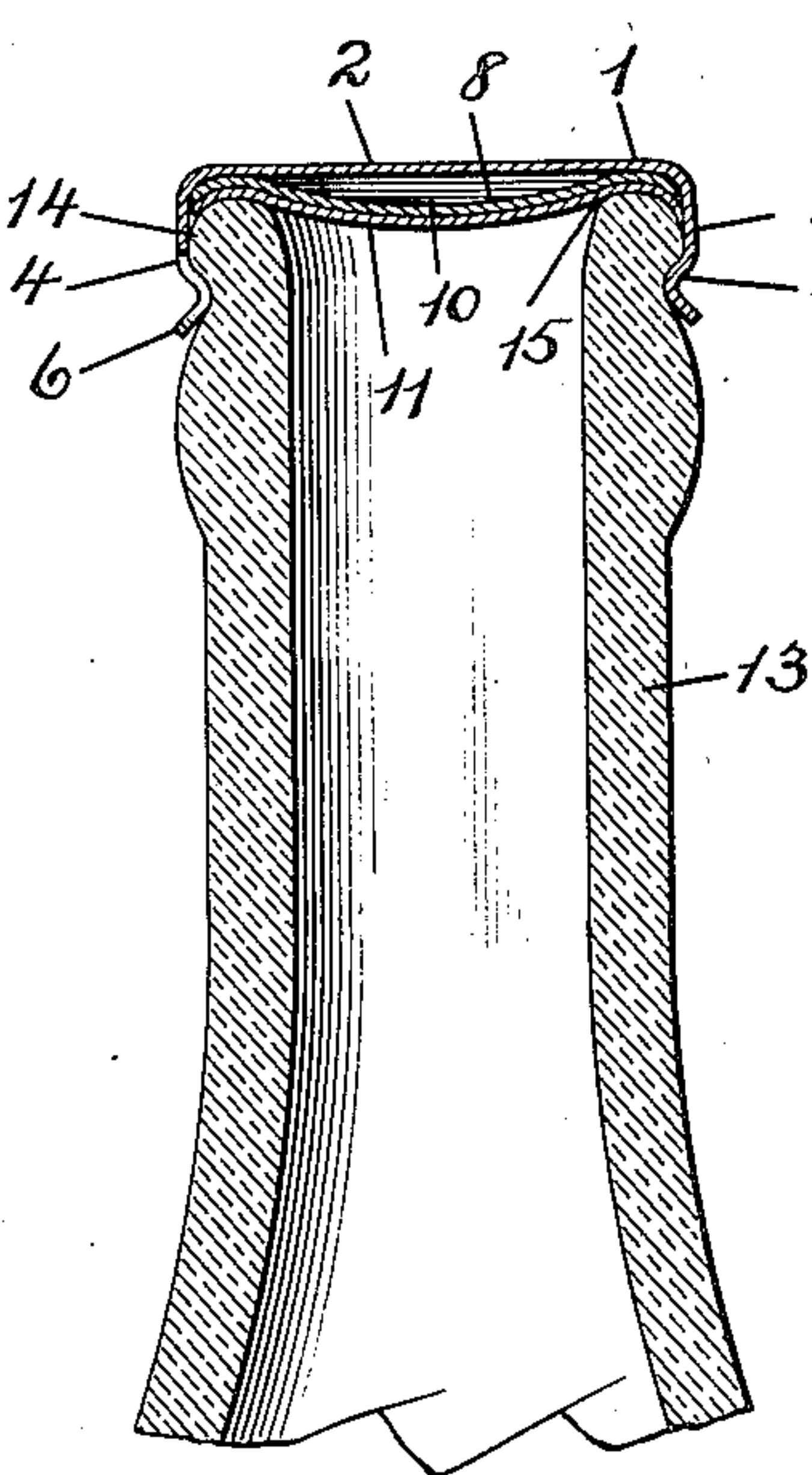
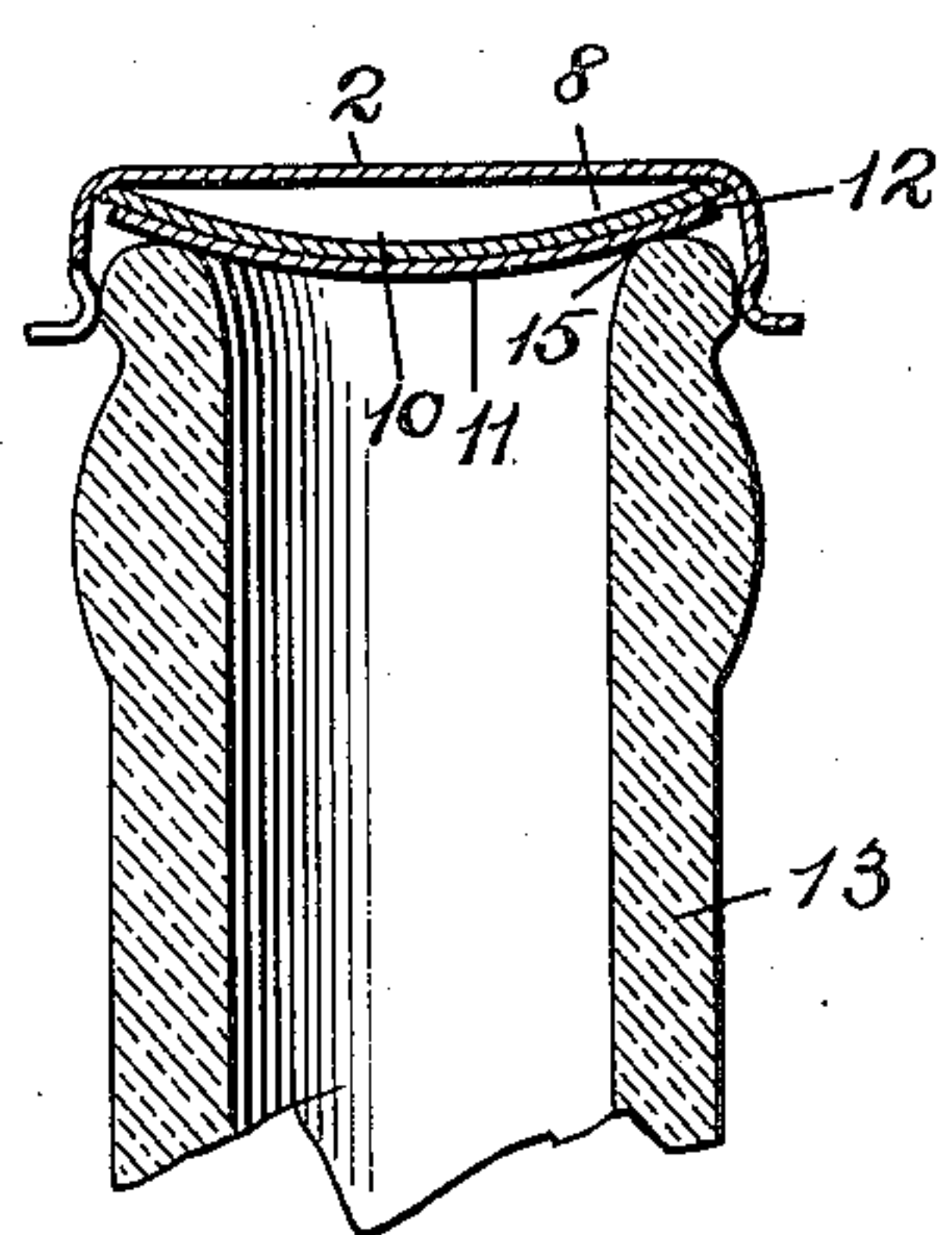


Fig. 4.



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DEVICE FOR SEALING BOTTLES.

No. 889,874.

Specification of Letters Patent.

Patented June 2, 1908.

Application filed January 27, 1908. Serial No. 412,786.

To all whom it may concern:

Be it known that I, FRANK DINGMAN, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Devices for Sealing Bottles, of which the following is a specification.

This invention relates to improvements in devices for sealing bottles and has particular reference to that class of bottle seals in which a sheet-metal cap containing a sealing medium is secured over the mouth of a bottle so as to resist internal pressure.

The present invention has particular reference to an improved construction and arrangement of sealing devices in combination with a cap to receive said devices,—said cap having pendent devices for engaging a locking shoulder on the bottle neck.

One object of the present invention is to provide an improved construction of sealing members on the interior of the cap which will be less expensive than the well-known cork disks heretofore employed and which will enable a more perfect seal to be effected than heretofore.

Another object of the invention is to provide an improved construction of sealing device by means of which the seal may be made at a point in the bottle mouth which is protected from damage and thus more apt to be perfect for sealing purposes.

Another object of the invention is to provide an improved construction, combination and arrangement of cap and disks whereby the sealing disk may be seated without liability of stretching and breaking at the sealing point.

The drawing illustrates the invention in which,—

Figure 1, shows a side elevation, the parts of which when assembled form a complete cap. Fig. 2, illustrates a sectional view of the cap. Fig. 3, shows a section of the cap and neck about to be brought together. Fig. 4, illustrates the first step in the sealing operation, and Fig. 5, shows a sectional elevation of a bottle neck to which the improved sealing device has been attached.

Referring to the drawing by numerals, 1, designates a sheet-metal cap which, in the present instance has a flat top surface, 2, and a pendent engaging device at the marginal edge of said top surface which engaging device in the present instance, has the form of a

circumferential flange, 3. In the form of cap shown, the flange thereof is provided with a plurality of notches, 4, which are formed at the lower edge so as to produce a plurality of segmental members, 5, having outwardly-projecting flanges, 6. Above the outwardly-projecting flanges, 6, the segmental members are provided with an inwardly-projecting shoulder, 7, which serve a useful function in connection with the improved sealing devices on the interior of the cap.

On the interior of the cap and immediately beneath the top surface thereof I provide a concavo-convex disk, 8, the concave side of the disk being uppermost and the marginal edges, 9, thereof having position adjacent and confronting the pendent engaging flange, 3, of the cap and lying in a horizontal plane above the central depressed portion, 10, of said disk. The concavo-convex disk, 8, is formed from a metallic plate.

A flat sealing disk, 11, of some suitable flexible material such as paper or fabric is preferably treated so as to form a coating on its flat surface and this sealing disk has position in the cap beneath the central depressed portion, 10, of the metal disk, 8, and the marginal edges, 12, of this sealing disk also confront the pendent engaging flange, 3, of the cap and are sustained by the inwardly-projecting shoulder, 7, on the engaging flange. It will thus be seen that the diameter of the sealing disk is greater than the diameter of the lower open-end of the cap below the shoulder, 7, and by reason of this variation in the diameters the sealing disk and the concavo-convex disk are held in place in the cap.

It will be apparent that the cap as a complete article ready for sale and use has a flat top with a pendent engaging device at its marginal edge and is provided with a flat sealing disk, and a concavo-convex disk between the flat sealing disk and the bottom side of the flat top.

In applying the improved cap to a bottle-neck the latter, shown in Fig. 3 and designated, 13, is provided with the usual annular locking shoulder, 14, and annular lip, 15, at the bottle mouth.

One object of the present invention is to provide a construction of sealing device that will operate to effect a seal at and around the lip, 15, for the reason that at this point the neck is protected and is more than likely free

of chips such as are often found on the exterior surface of the bottle mouth.

My arrangement of a flat sealing disk and a metallic disk with a depressed central portion above the sealing disk, produces a construction that is exceedingly effective in the operation of applying the caps to a bottle neck. For example, when the cap and bottle neck are brought together as shown in Fig. 3, the central portion of the sealing disk, 11, is backed up by the depressed central portion, 10, of the disk, 8, while the marginal edge, 12, of said sealing disk is unsupported against upward pressure so that after the first contact between the bottle mouth and sealing disk any further movement to bring the cap and bottle together will cause the central portion of the sealing disk, 11, to be forced down inside of the mouth of the bottle and because of its flexible character, seat close against the lip, 15, as shown in Fig. 4. During this portion of the sealing operation the marginal edge, 12, of the sealing disk may draw away from the pendent engaging flange, 3, of the cap and thus prevent a stretching of the sealing disk as would occur if the said marginal edge were held, and thus all liability of stretching and rupturing the sealing disk is avoided. After the sealing disk has been firmly seated around the lip, 15, as shown in Fig. 4, the further movement to bring the cap and bottle together will cause the margins of the sealing disk, 11, and metallic disk, 8, to be turned down and over the mouth of the bottle, as shown in Fig. 5.

From the foregoing explanation it will be seen that advantageous results are produced in the combination of a cap with a normally flat sealing disk on the inside thereof, and a metallic disk having a depressed central portion which latter disk is interposed between the cap and sealing disk.

A device constructed in accordance with this invention enables the use of a sealing disk of an exceedingly cheap material,—the two disks together being produced at a much less expense than a cork disk.

It is to be understood that the form of the inclosing cap may be varied and that the cap herein shown is substantially the same as

illustrated in Letters Patent of the United States Number 853,775 granted to me on the 14th day of May 1907.

Having thus described my invention what I claim and desire to secure by Letters Patent is,—

1. A metallic bottle-sealing cap having a continuous top surface and a pendent bottle-neck engaging device extending continuously downwardly from the marginal edge of the top surface of the cap, a metallic plate in said cap,—said plate being concavo-convex from its marginal edge at one side to the marginal edge at its diametrically-opposite side, and a flat sealing disk also in the cap beneath the metallic plate and having its marginal edge confronting the pendent bottle-neck engaging device.

2. The combination with a sheet-metal cap having a top and a pendent bottle-neck engaging device at the edge of said top, of a flat sealing disk in said cap and a second disk interposed between the cap-top and the flat sealing disk,—said second disk having a depressed portion which confronts the central flat portion of the sealing disk.

3. The combination with a sheet-metal cap having a top and a pendent bottle-neck engaging device at the edge of said top, of a flat sealing disk in said cap and having its marginal edge unsupported against upward pressure and a metallic disk interposed between the flat disk and cap-top and having a depressed central portion and the marginal edge of said metallic disk being normally spaced from the marginal edge of the sealing disk.

4. The combination with a sealing device having an annular flange-member, of a flat sealing disk within the flange-member and supported at its bottom side by said flange-member, and a concavo-convex metal portion encircled by the flange-member and having position above the flat sealing disk.

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

FRANK DINGMAN.

Witnesses:

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