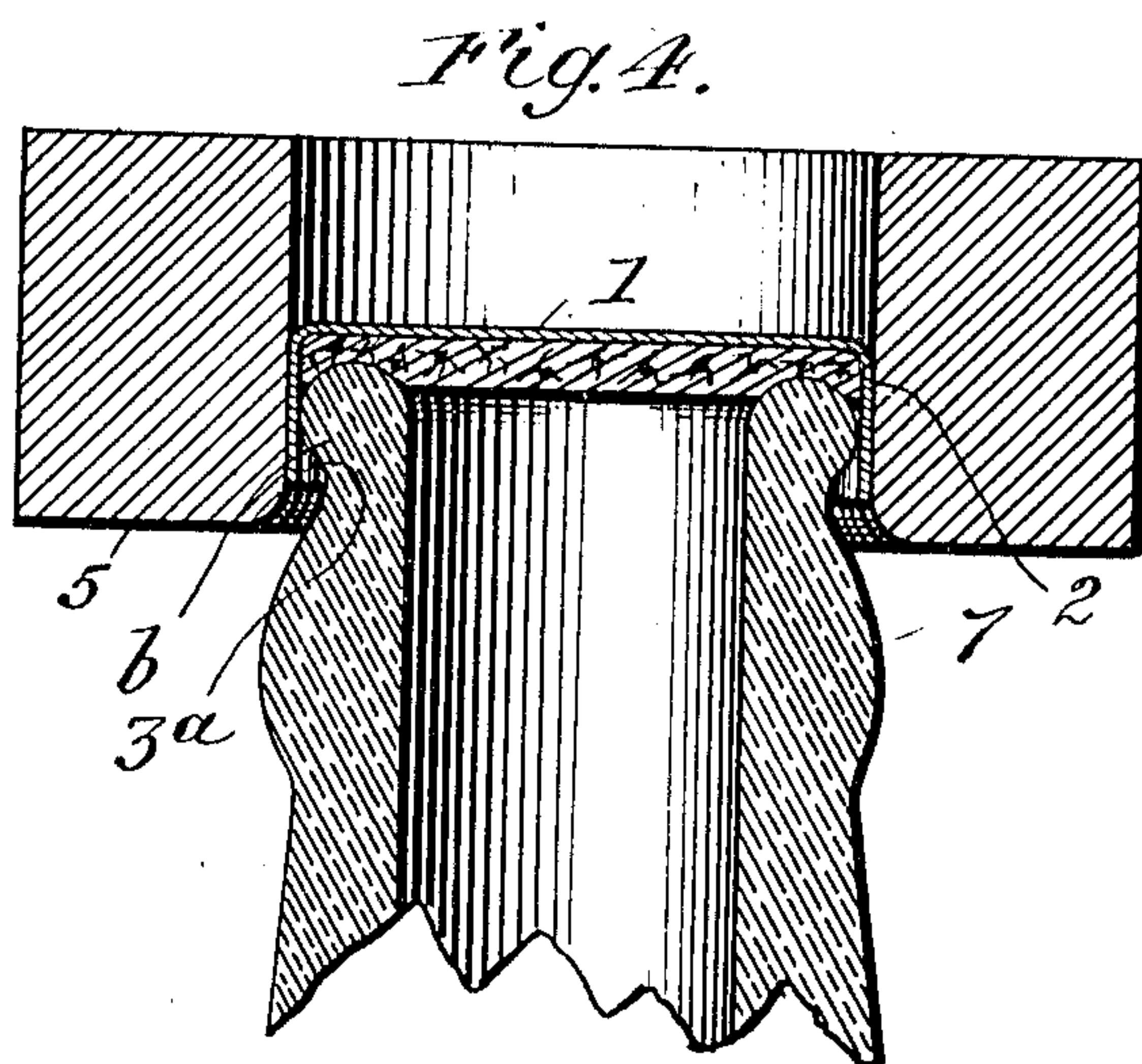
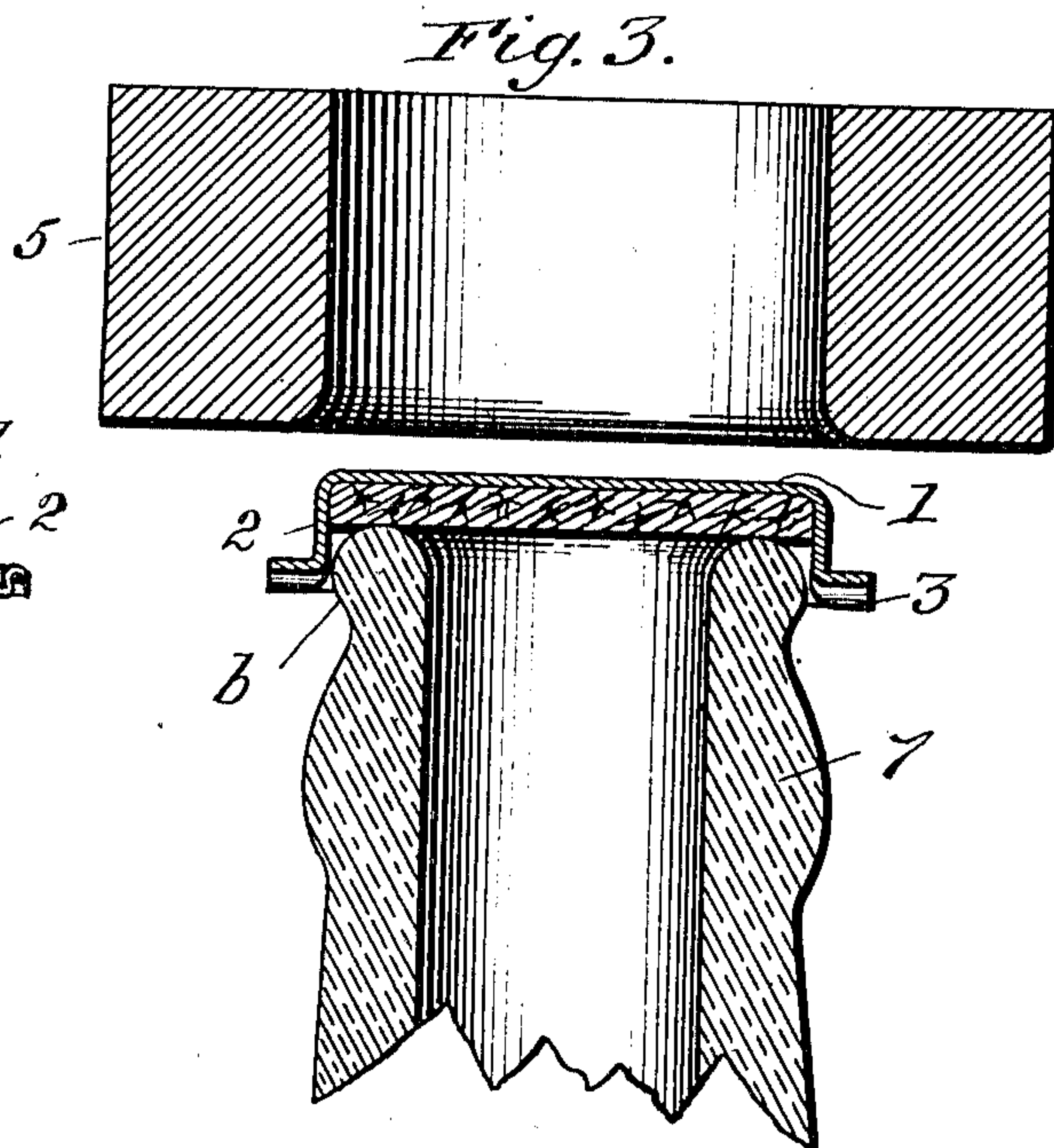
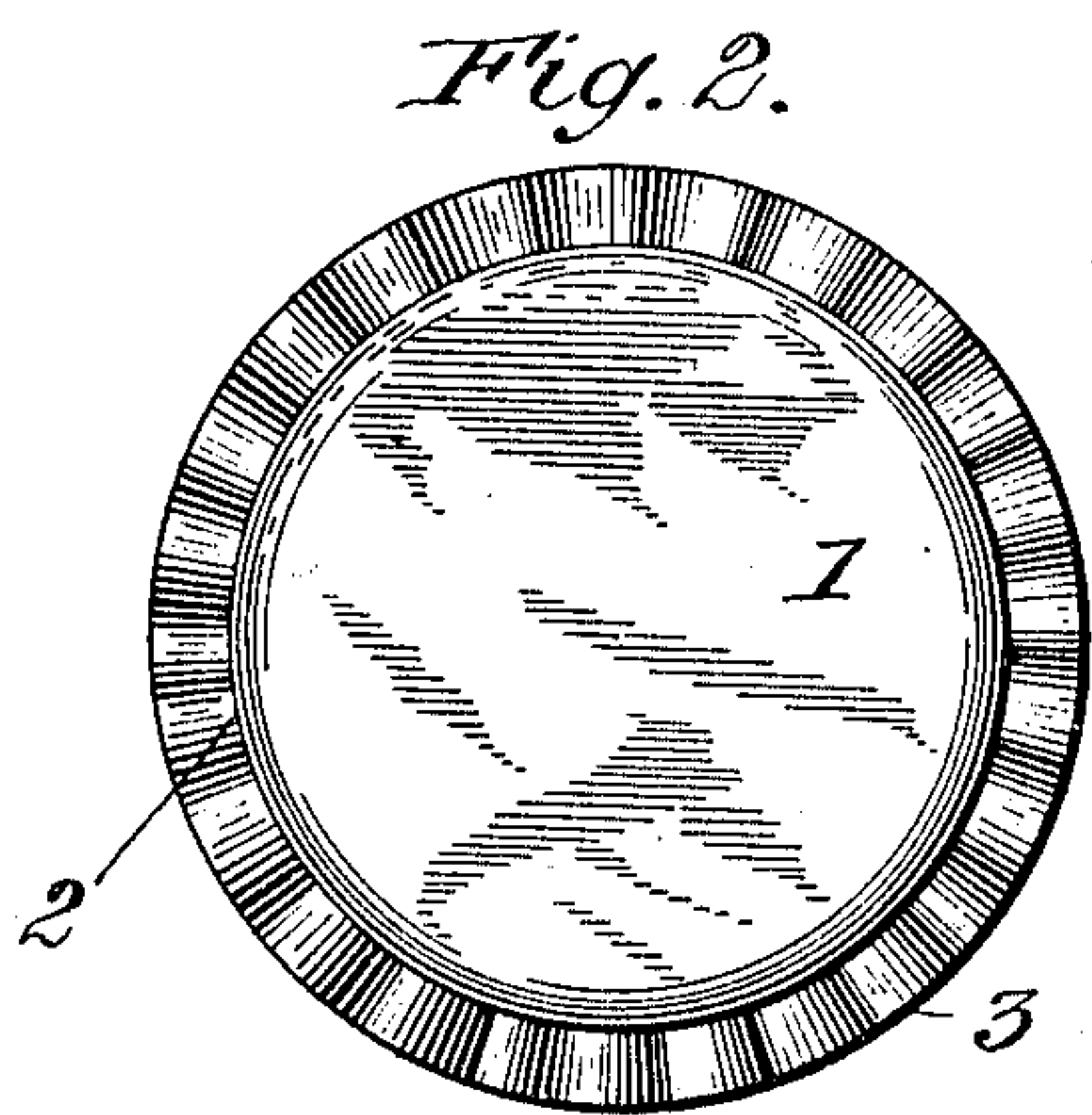
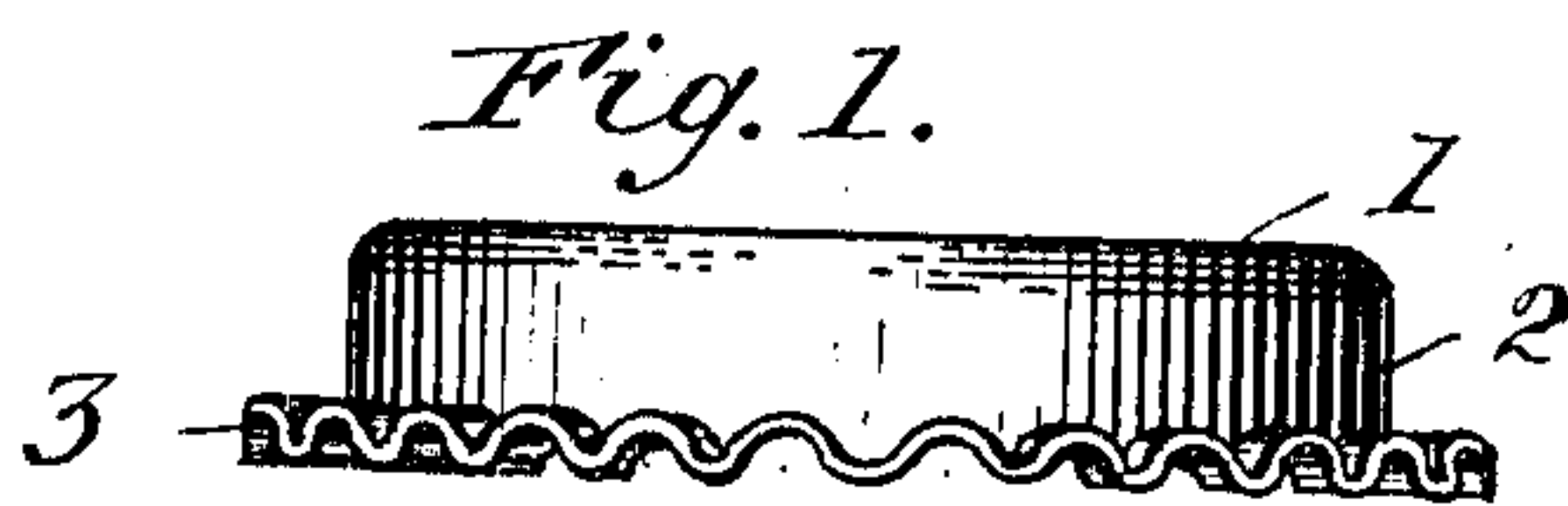


E. P. WETMORE.
METHOD OF SEALING BOTTLES AND OTHER VESSELS.
APPLICATION FILED NOV. 10, 1908.

954,406.

Patented Apr. 5, 1910.



Witnesses

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UNITED STATES PATENT OFFICE.

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METHOD OF SEALING BOTTLES AND OTHER VESSELS.

954,406.

Specification of Letters Patent.

Patented Apr. 5, 1910.

Application filed November 10, 1908. Serial No. 461,948.

To all whom it may concern:

Be it known that I, EARL PORTER WETMORE, of New York city, in the county and State of New York, have invented an Improved Method of Sealing Bottles and other Vessels, of which the following is a specification.

This invention has relation to an improved method of sealing bottles.

10 In carrying out my invention, I provide a sealing cap formed from a sheet metal blank, and consisting of a crown portion, a smooth pendent annular skirt portion, and a corrugated, substantially horizontal flange or extension. The cap in this form is then placed loosely upon the bottle head, having a projecting locking shoulder, and an annular bending or drawing die having an interior diameter which is equal to, or slightly less than, the diameter of the skirt portion of the cap, is forced thereover. The action of this die bends downwardly the corrugated horizontal flange on the line of its junction with the smooth skirt portion, and brings said flange to a substantially vertical position to form a cylindrical extension of the pendent skirt, portions of the corrugations being forced inwardly underneath the locking shoulder on the bottle. The smooth pendent skirt portion, and the corrugated flange portion, being of different degrees of rigidity, the die causes the flange to bend downwardly along the line of junction between these two portions, and which is a line of substantial uniform resistance.

35 In the drawing forming a part hereof, Figure 1 is an exterior edge view of the sealing cap as it appears after the first step in its manufacture, or as when stamped from a blank, and Fig. 2 a top view of the same. Fig. 3 shows the incomplete cap in vertical section, and seated on a bottle head, with a drawing die above it. Fig. 4 illustrates the complete cap, together with the die and bottle as they appear upon the conclusion of the drawing operation.

Referring now to the drawing, 1 is the crown, 2 the skirt, and 3 the horizontally-extending circular corrugated flange of the incomplete cap as that device appears before the final step in its formation in which the said flange is drawn to cylindrical form.

5 represents the simplest form of drawing tool or die, and 7 the bottle head.

55 Fig. 4 shows the position of the parts after

the die has completed its action, as above described. From this figure it will be seen that the flange 3 has been forced downwardly to a position in which it forms a vertical extension 3^a of the skirt, and that portions of the corrugations have been forced inwardly underneath and in locking engagement with the locking shoulder B of the bottle head.

It will be seen that the corrugated locking flange 3 of the cap is of appreciably greater rigidity than is the uncorrugated skirt portion 2; and that when said flange is bent downwardly from the position shown in Fig. 3 to the position shown in Fig. 4, the bend naturally occurs on the circular line which forms the junction of these two members 2 and 3 and at the inner ends of the corrugations, instead of across them. This gives a bending point of substantially uniform resistance throughout the circumference. This not only makes the bend occur much more easily, but it permits of a substantially uniform contraction of the flange as its diameter is decreased during the bending operation. The result is a substantially uniform forcing inward of all the corrugations and a substantially uniform locking engagement of all of them. The bending line of uniform resistance also permits the locking flange to adapt itself to varying sizes and irregularities of the bottle heads. By this method of bending, comparatively little inward radial pressure is required. This obviates to a very large degree the breakage of the bottles, which has occurred with the methods heretofore employed. It also permits of the application of the invention to other vessels besides bottles; that is to say, vessels such as fruit jars, jelly glasses, and like vessels having mouths of relatively large diameter.

It will be understood that the relation which the corrugated portion of the skirt bears to the shoulder of the bottle, at the conclusion of the drawing operation, is governed by the distance of the shoulder from the bottle lip, and the length of the skirt. I do not therefore confine my invention to bringing the sealing cap and bottle head into the exact relative positions shown in the drawing, but

I claim as my invention,—

1. The method of sealing bottles and other vessels with caps having a crown, pendent

skirt and substantially horizontal corrugated flange at the base of the skirt, which consists in bending the flange downward on a line forming the junction between the skirt
5 and flange into substantially vertical position, thus engaging the corrugations with the shoulder on the bottle.

2. The method of sealing bottles and other vessels with caps having a crown, pendent
10 skirt and substantially horizontal corrugated flange at the base of the skirt, which

consists in bending the flange downwardly on the line of junction between the skirt and flange into substantially vertical position over a locking shoulder on the bottle, and at
15 the same time confining the flange externally to force the corrugations inwardly underneath said shoulder.

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