

No. 801,683.

PATENTED OCT. 10, 1905.

J. K. PENFOLD.
VESSEL CLOSURE.

APPLICATION FILED OCT. 25, 1904.

Fig. 1.

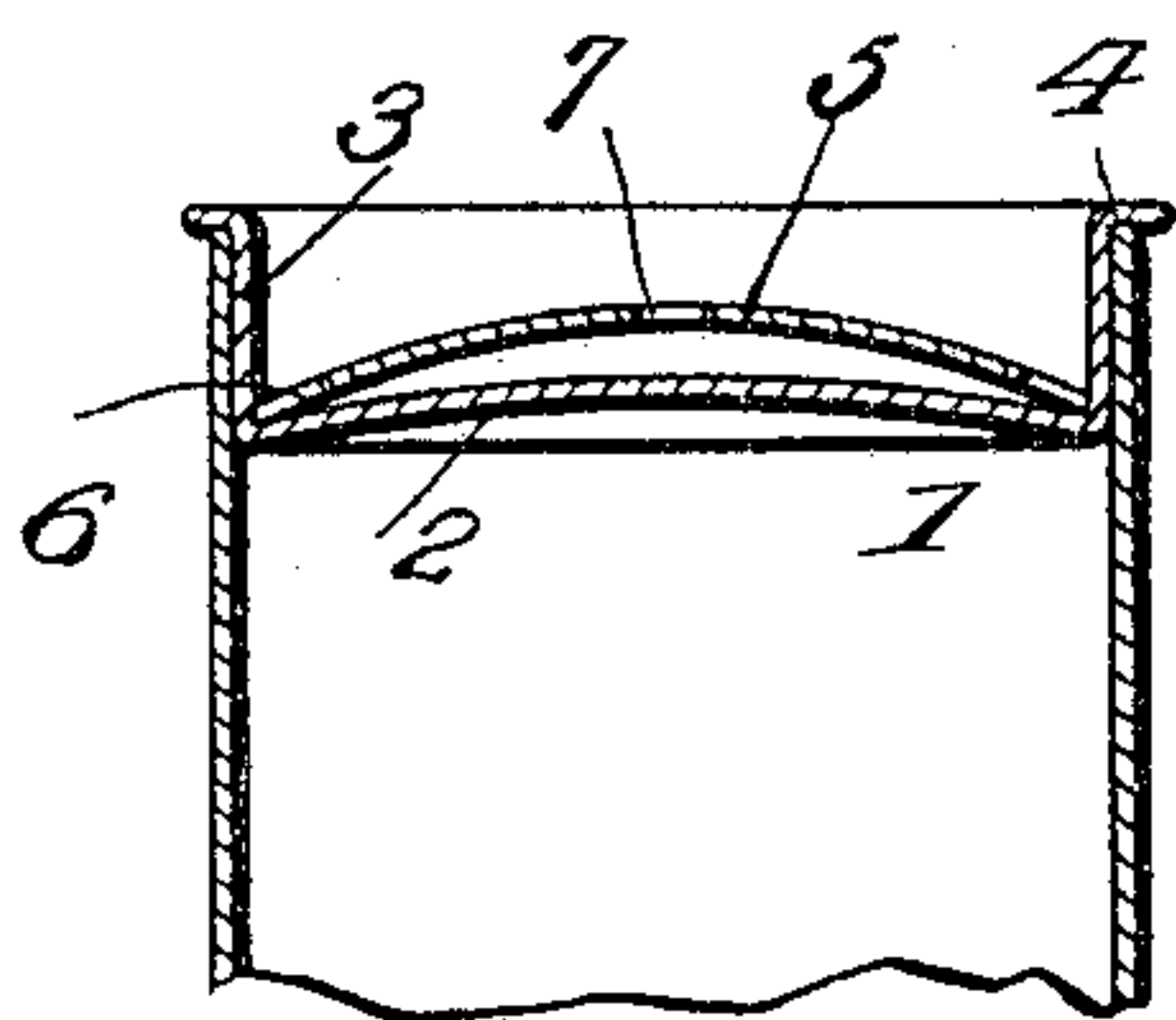


Fig. 2.

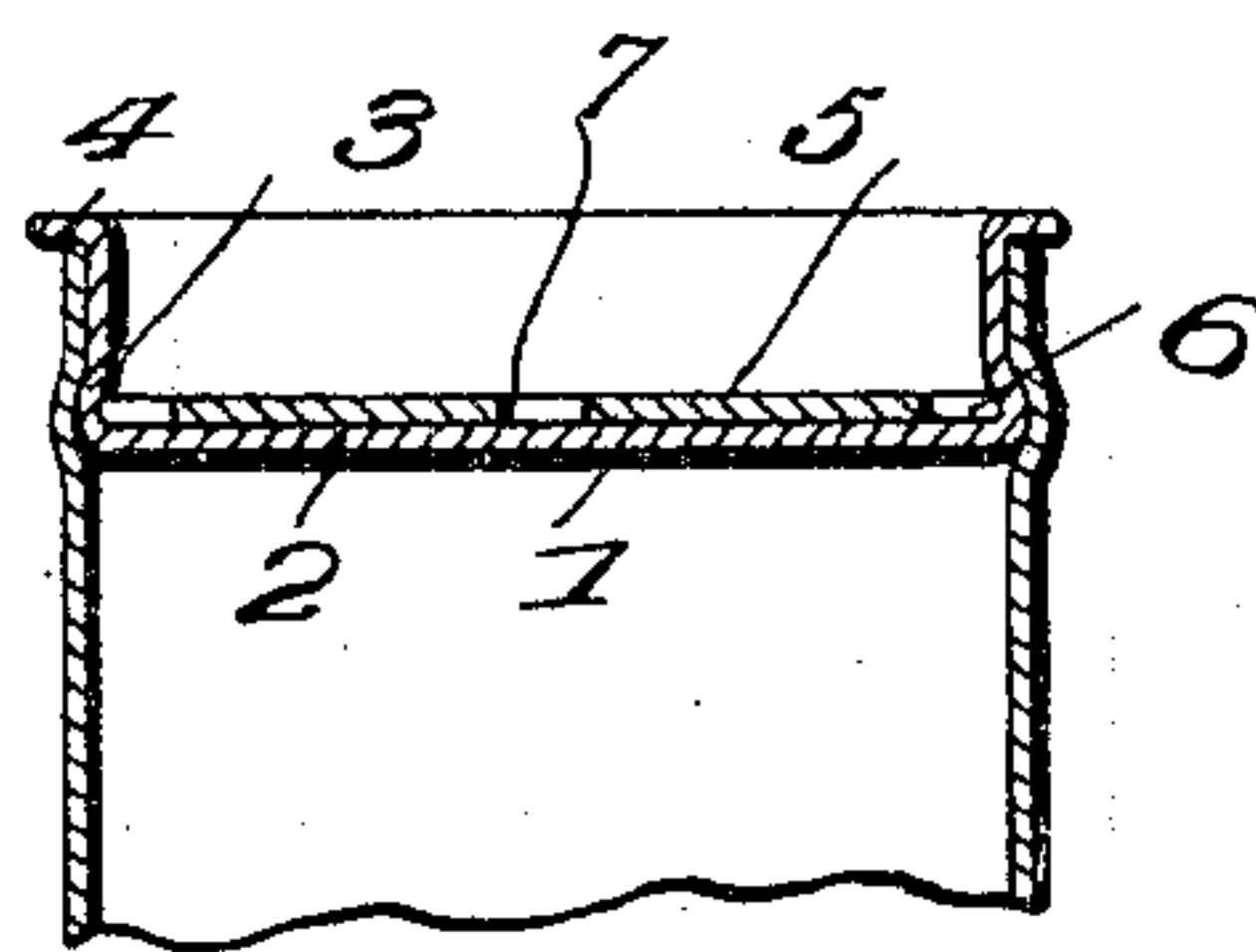


Fig. 3.

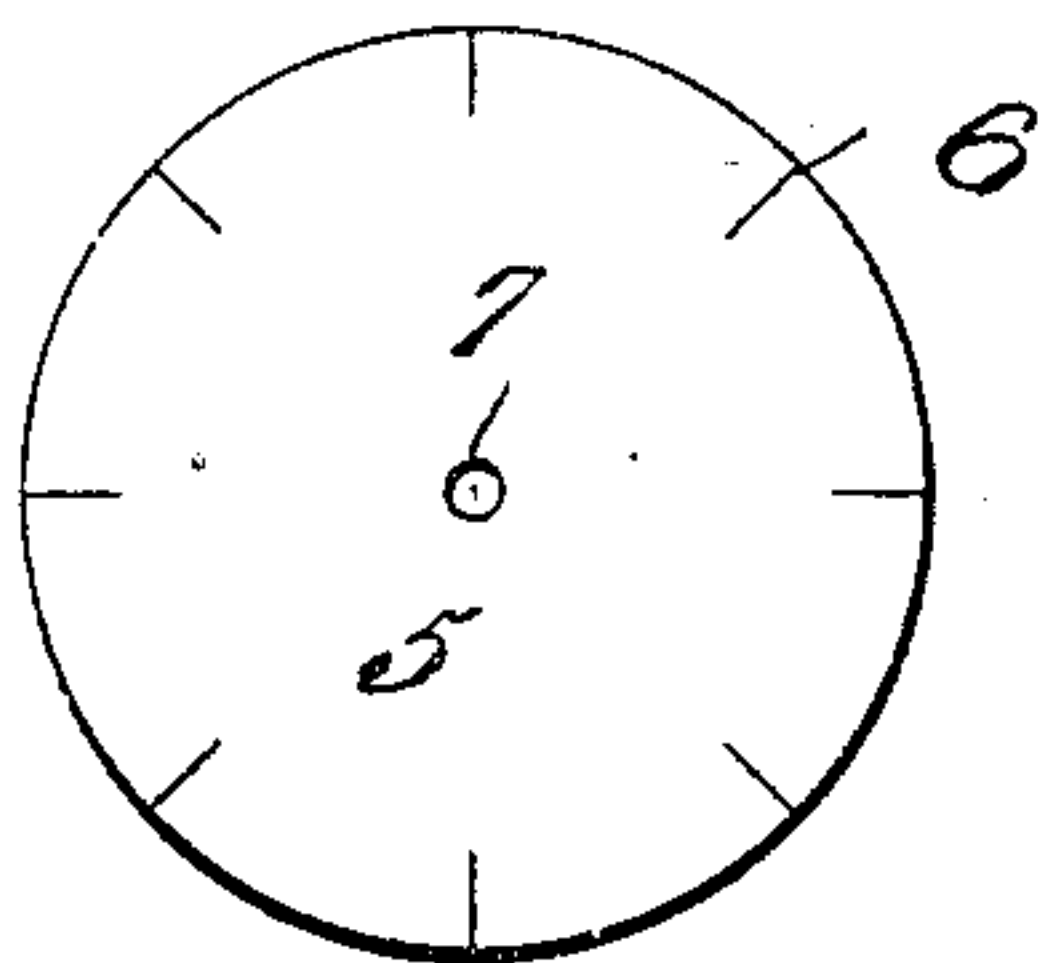


Fig. 4.

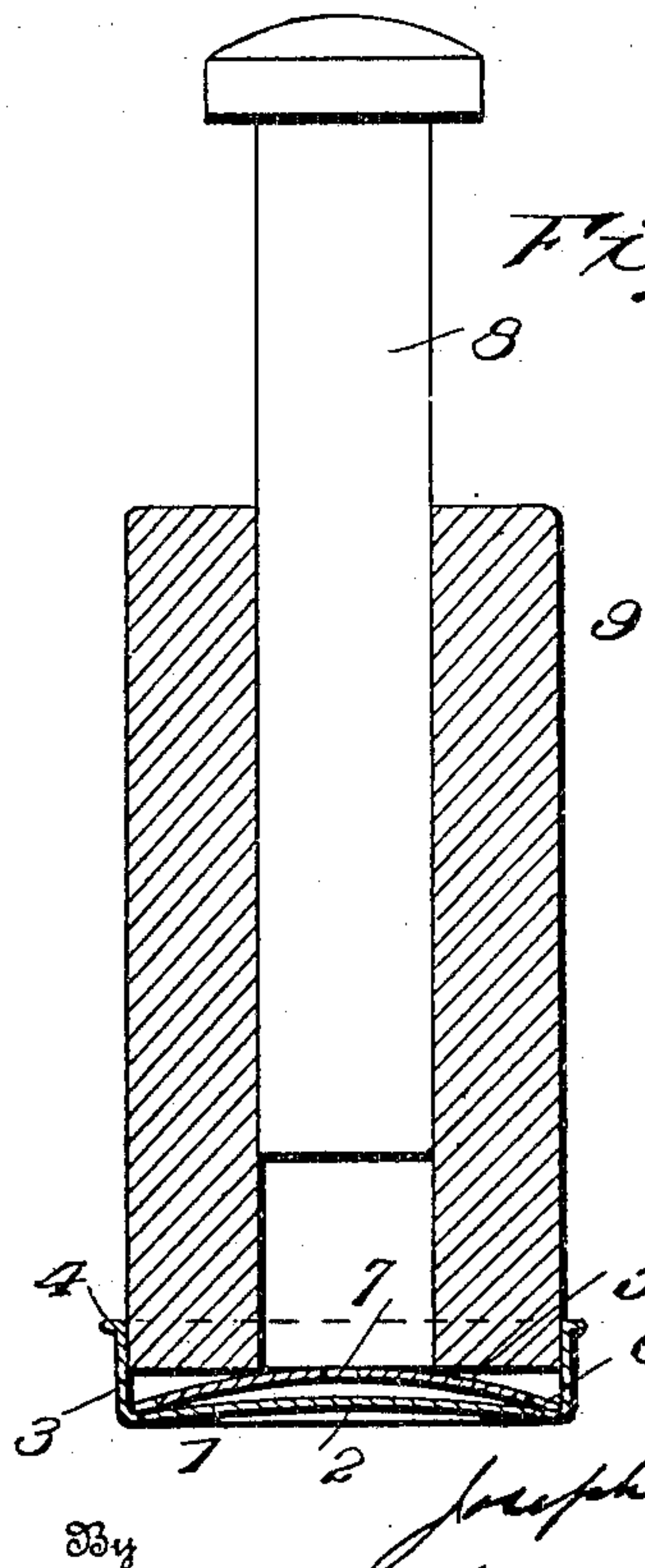


Fig. 5.



Witnesses

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VESSEL-CLOSURE.

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To all whom it may concern:

Be it known that I, JOSEPH K. PENFOLD, of Warren, in the county of Trumbull and State of Ohio, have invented certain new and useful

5 Improvements in Vessel-Closures; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

10 The object of this invention is to provide improved, simple, and highly-efficient means for securely locking a vessel-closure in place without the necessity of making any special provision in the formation of the vessel for

15 the accommodation of the closure, and yet at the same time permit of the latter being readily removed.

The invention will be hereinafter fully set forth, and particularly pointed out in the claim.

20 In the accompanying drawings, Figure 1 is a vertical sectional view of a portion of a vessel with the closure in position and its binding-disk loose therein. Fig. 2 is a similar view showing the binding-disk expanded.

25 Fig. 3 is a plan view of the disk. Fig. 4 shows means for expanding the disk, and Fig. 5 the device for releasing the closure.

Referring to the drawings, 1 designates the closure proper, which is shown as consisting

30 of a pan-like member having a circular bottom 2 and an upturned peripheral rim 3, the edge whereof is preferably flanged outwardly, as shown at 4. This member is designed to fit in the opening of a can, jar, or other vessel.

35 5 is the retaining-disk, of concavo-convex formation, having slits 6 in its edge and a hole 7 in its center. With its concaved face downward this disk is designed to fit in the pan-like member, its edge just clearing the rim of

40 the former when first placed therein. After being properly positioned the disk is spread outwardly into a perfectly flat state, (see Fig. 2,) so that its edge will impinge against the upturned rim of the closure with such force

45 as to firmly bind the latter in place within the can or other vessel.

In Fig. 2 the showing at the point of contact between the bottom of the closure and the can is somewhat exaggerated, the latter

50 being indicated as being slightly bulged. In actual practice this may or may not be the case.

The flattening out or expanding of the disk may be effected by various means. I have

55 shown for this purpose a plunger 8 movable

within the bore of a cylindrical body 9, the exterior diameter of which latter corresponds to the internal diameter of the closure. In practice the body 9 is positioned within the closure member, fitting snug against the up- 60 turned rim thereof and pressing and holding down the outer slitted edge of the disk. Thereupon the plunger is forced downwardly against the center of the disk, effecting the expansion of the edge thereof and opening or 65 spreading such edge sufficiently to cause it to squeeze the bottom of the rim of the closure to the extent of slightly enlarging the same, and thereby binding it within the can or other vessel. 70

In removing the closure the hooked instrument 10, Fig. 5, is inserted in the central hole 7 of the disk and then pressed downwardly, with the edge of the vessel acting as the fulcrum. The disk being thus pried out, the 75 closure may be readily loosened or removed by the aid of any suitable means inserted under the flange 4.

The advantages of my invention are apparent to those skilled in the art. It will be 80 seen that I have provided an extremely simple and inexpensive form of closure especially adapted for jars and cans, but alike applicable to other vessels. It is only necessary that the pan-like member be of size to conform to the opening of the vessel, the locking 85 thereof in place being effected entirely by the expanded disk.

The expansible disk when flattened out serves to strengthen the pan-like member and also 90 the neck or top of the receptacle itself, with the result that a lighter and cheaper grade of tin or other metal may be employed. The disk may be made from scrap material from the stamping out of the other member, thus 95 preventing waste, with resultant economical advantages. Preferably the bottom of the pan-like closure is full before expansion—that is, it is not flat—with the result that greater latitude is allowed in expanding the 100 closure under the action of the disk; but I do not limit myself in this respect.

I claim as my invention—

The combination with a vessel having a smooth interior at its mouth, of a pan-like 105 member having a full bottom and a peripheral rim, said member being designed to fit within the mouth of the vessel, and a metallic disk consisting of a single concavo-convex plate of slightly less diameter than the inte- 110

rior of said member and formed with slits at
its periphery, said disk when expanded being
designed to force the rim of said member
against the smooth wall of the vessel-mouth
5 and to conform throughout to the bottom of
said member.

In testimony whereof I have signed this

specification in the presence of two subscrib-
ing witnesses.

JOSEPH K. PENFOLD.

Witnesses:

GEO. W. UPTON,
S. B. CRAIG.