

No. 702,412.

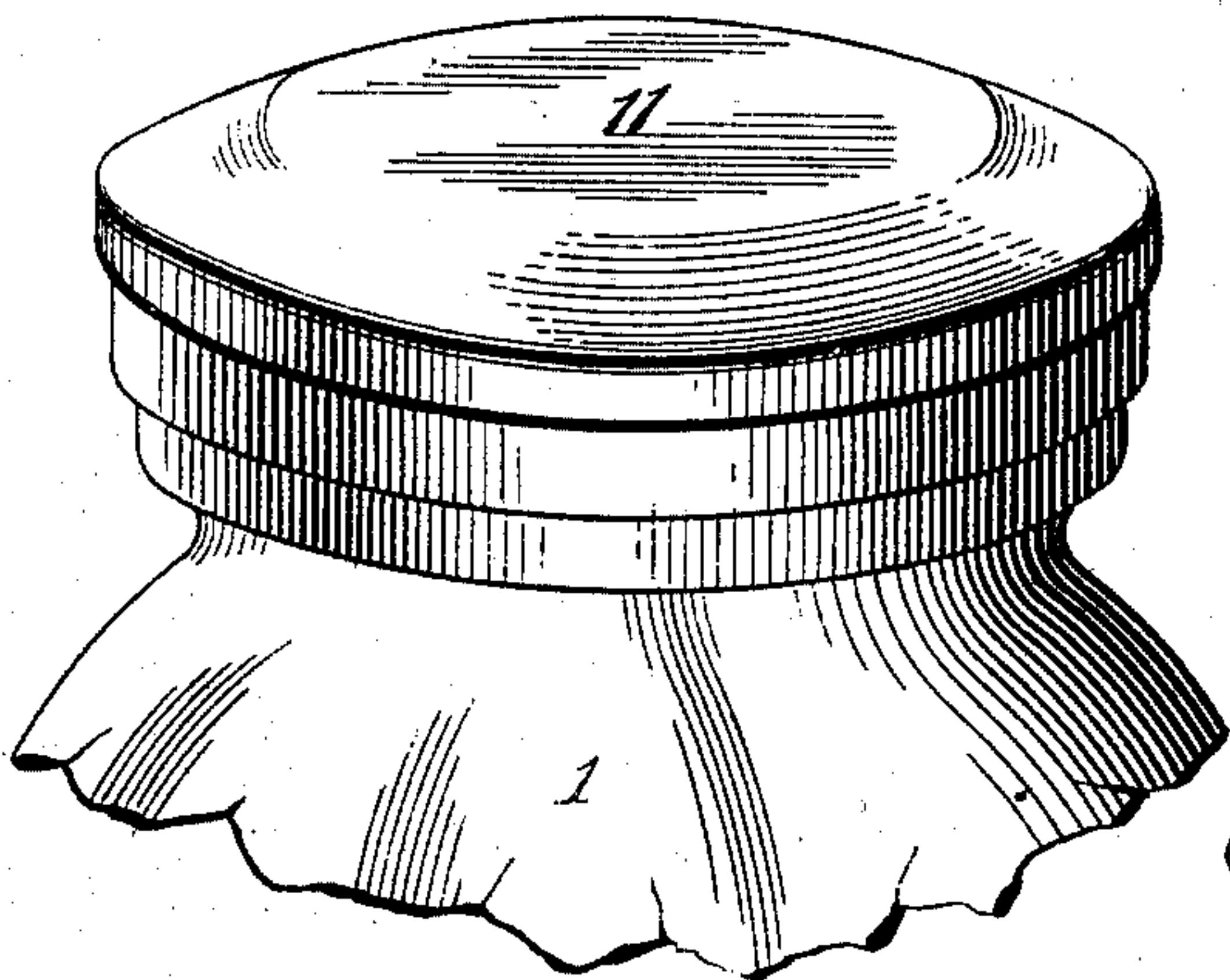
Patented June 17, 1902.

F. E. DOPHEIDE.  
JAR CLOSURE.

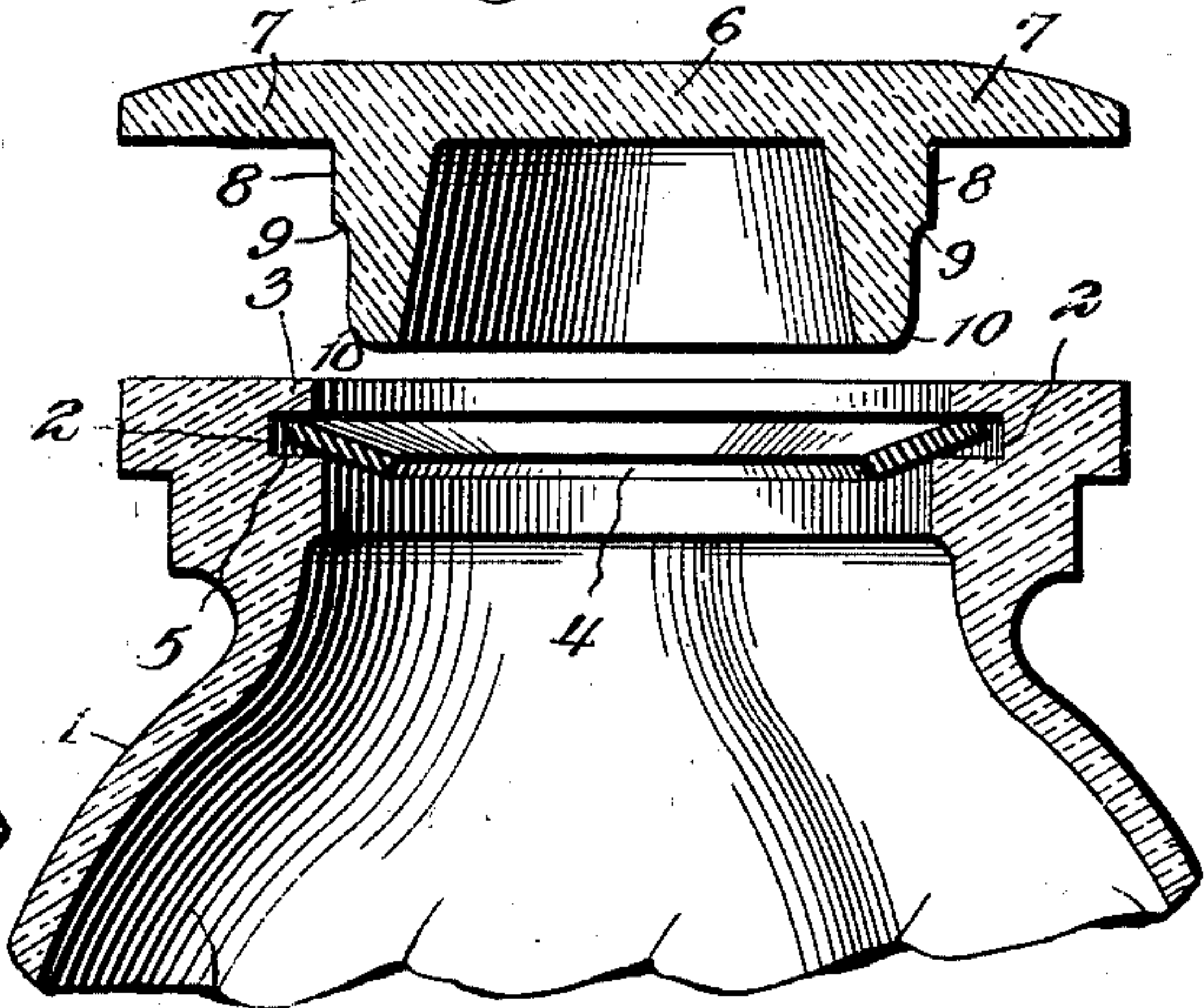
(Application filed Nov. 27, 1901.)

(No Model.)

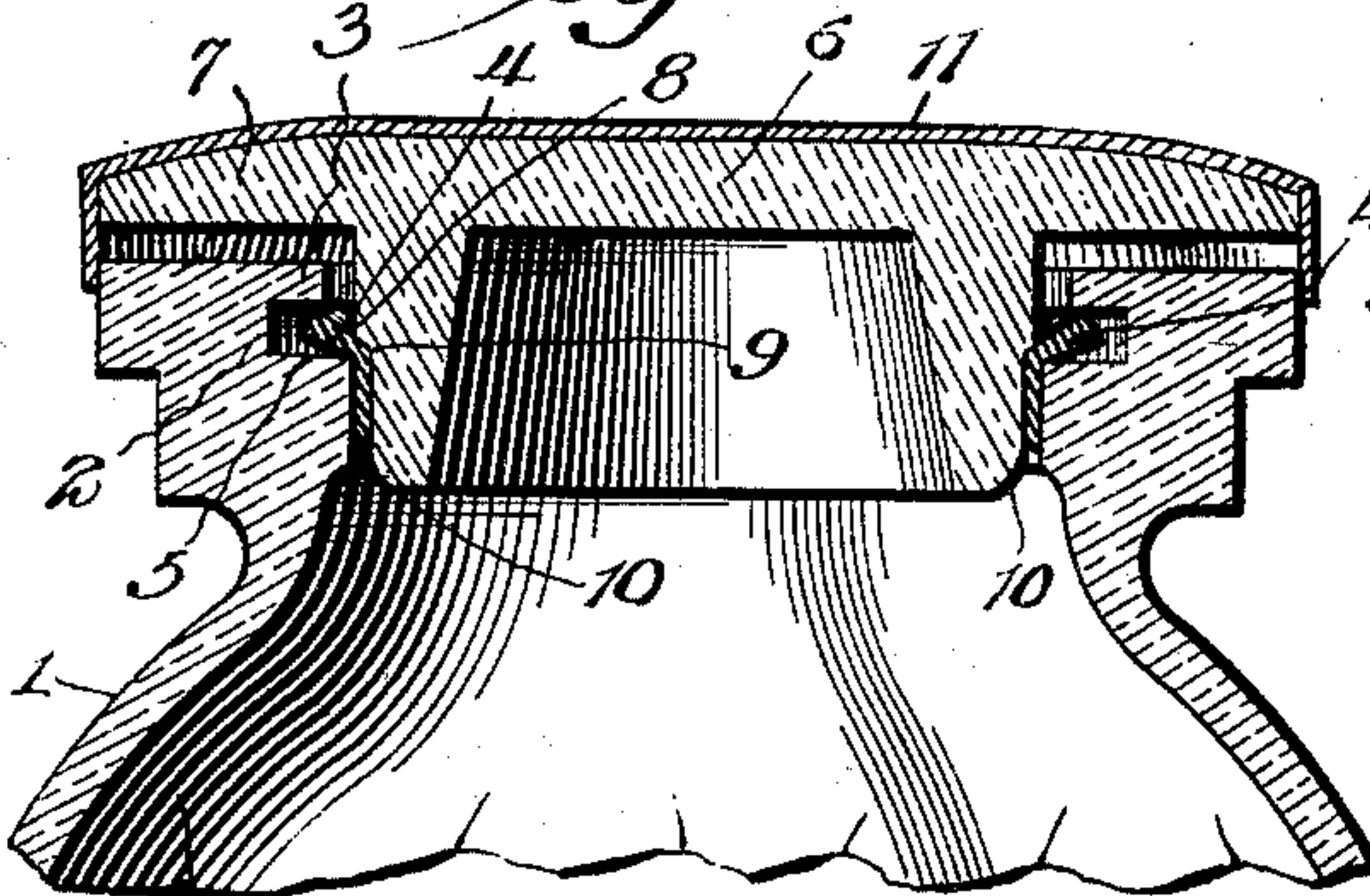
*Fig. 1.*



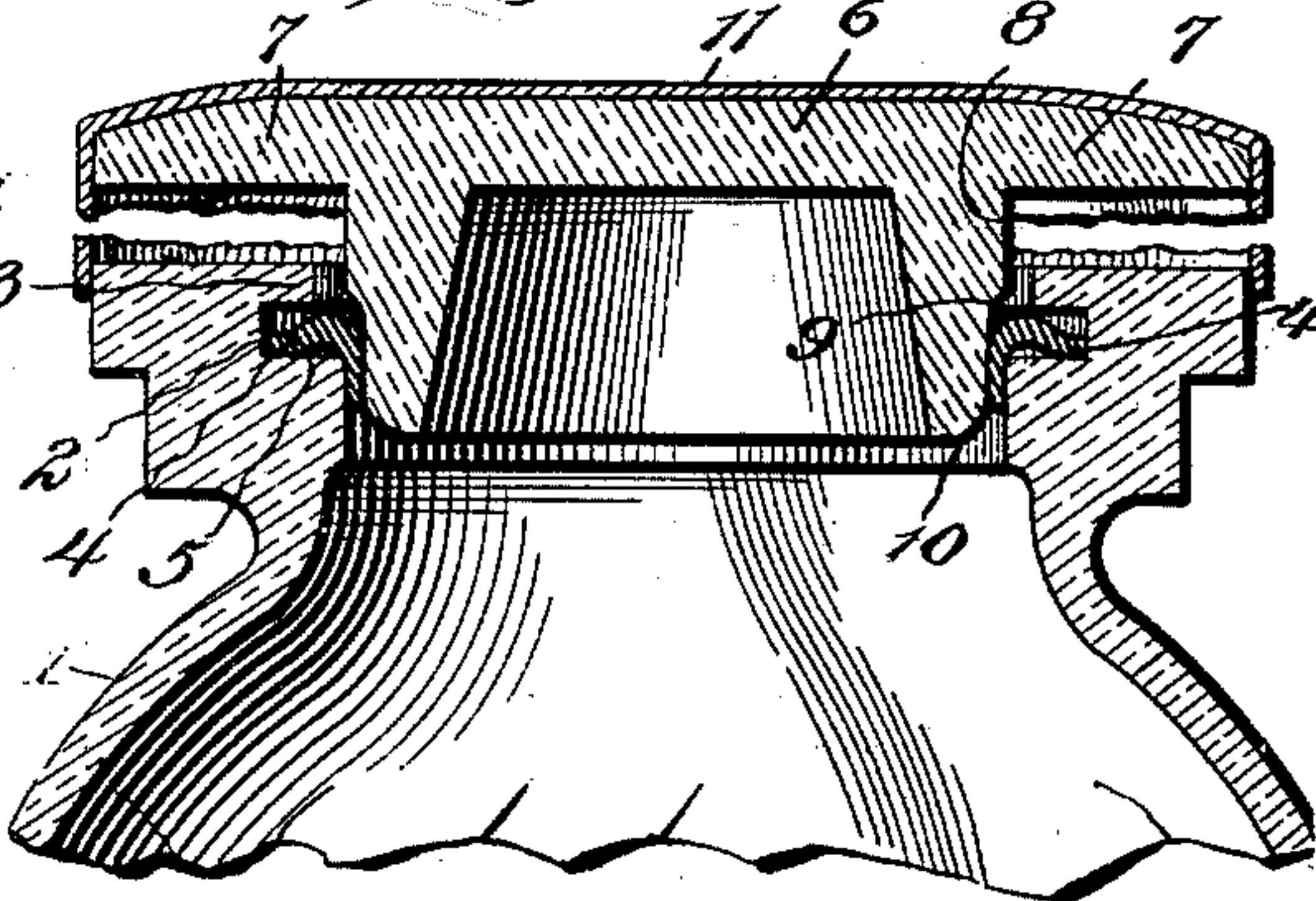
*Fig. 2.*



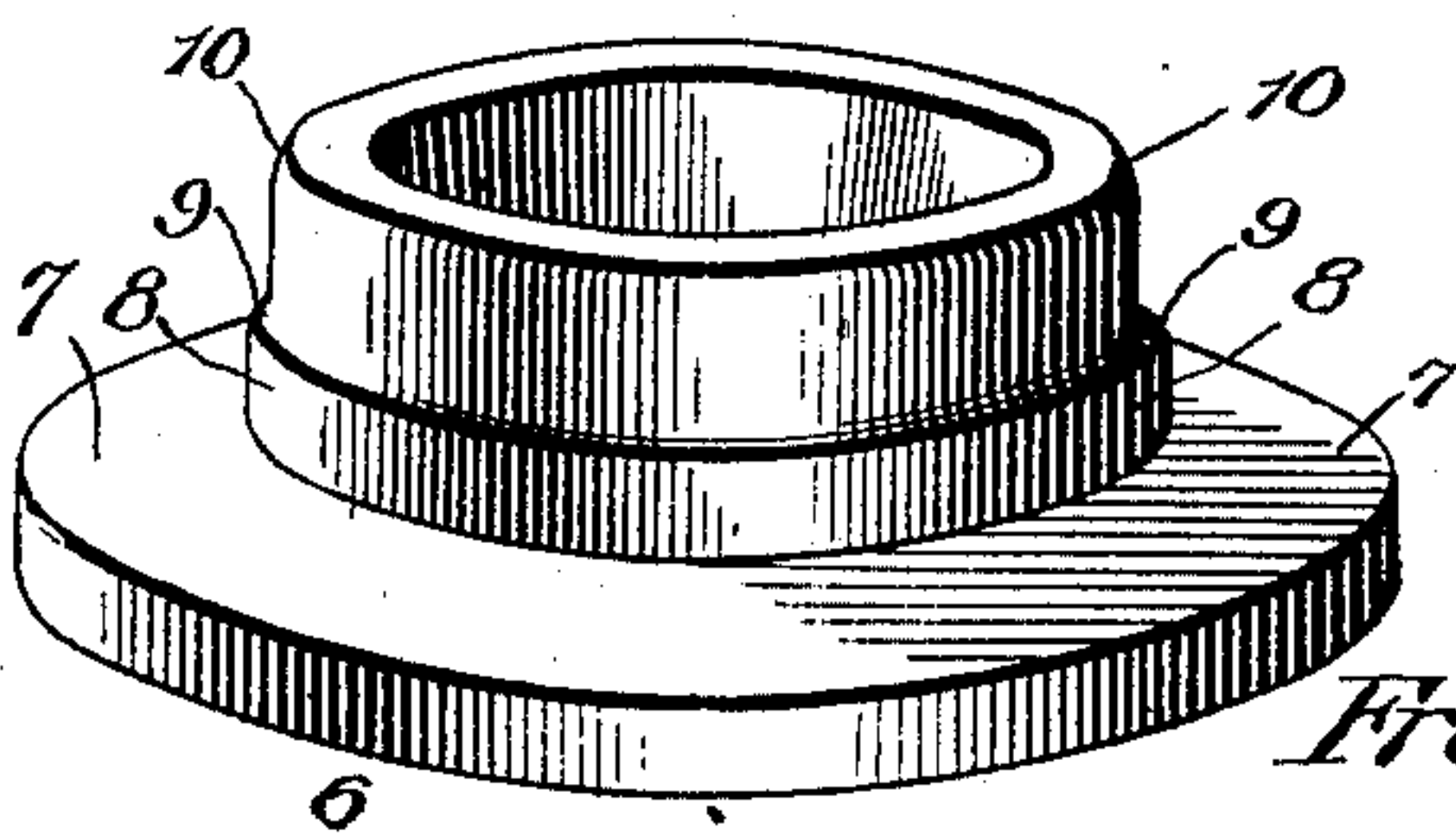
*Fig. 3.*



*Fig. 4.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

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## JAR-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 702,412, dated June 17, 1902.

Application filed November 27, 1901. Serial No. 83,862. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK E. DOPHEIDE, a citizen of the United States, residing at Palmyra, in the county of Macoupin and State of Illinois, have invented a new and useful Jar-Closure, of which the following is a specification.

This invention relates to jar-closures; and its object is to facilitate the application and removal of the closure-plug, to dispense with external fastenings, so that the jar may be free from projections and obstructions, and at the same time to insure air-tight closing of the jar, so as to prevent ingress of dust and other foreign matter and also to prevent displacement of the plug by rough handling and by the pressure of the gases within the jar. It is furthermore designed to so combine the neck of the jar, the closure-plug, and the packing-ring that the latter will be gripped between the neck and the plug, so as to effectually seal the jar and also to prevent withdrawal of the plug except under excessive pressure, which may be obtained by forcing some instrument under the flange of the plug and then prying the same out of the neck of the jar.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be hereinafter more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a perspective view of a jar-neck having the present closure applied thereto. Fig. 2 is a cross-sectional view thereof, illustrating the position of the packing-ring before the insertion of the closure-plug. Fig. 3 is a similar view showing the plug in its normal closed position. Fig. 4 is a similar view to illustrate the action of the packing-ring when the plug is started from its closed position. Fig. 5 is an inverted detail perspective view of the closure-plug.

Like characters of reference designate corresponding parts in all the figures of the drawings.

Referring to the accompanying drawings, 1 designates the neck portion of any ordinary fruit-jar, which is provided with an inner marginal groove 2, the upper wall of which is terminated short of the outer end of the lower wall, so as to form a flange 3, which overhangs the rear portion only of the broad ledge formed by the bottom of the groove. An ordinary thin flat rubber packing-ring 4, as now commonly employed in connection with fruit-jars, and of greater width than the depth of the groove, is placed in the neck of the jar and rests against the ledge 5 or bottom of the groove 2, and in view of the comparative shortness of the upper flange 3 of the groove the packing-ring is conveniently fitted in place, and its outer edge readily snaps beneath the overhanging flange 3, while the inner edge of the packing-ring inclines inwardly and downwardly beyond the outer edge of the lower ledge or bottom 5 of the groove. The plug consists of a circular body 6 of a diameter to be readily inserted in the outer end portion of the neck and to bind against the inner edge of the packing-ring. The outer end or top of the plug is provided with an outwardly-directed marginal flange 7 to rest upon the upper edge of the jar, and thereby limit the inward movement of the plug. Another and much smaller annular enlargement or flange 8 is formed upon the body of the plug and at the inner edge of the cap-flange 7. It will be noted that the outer margin of the plug is curved inwardly from the lower edge of the flange or enlargement 8, as indicated at 9, and the lower marginal edge of the plug is rounded or beveled inwardly, as at 10, so as to slightly taper or reduce the lower end of the plug to permit of said lower end of the plug sliding over the packing-ring and to prevent hanging of the plug upon the ring, as would be the case if the side and end walls of the plug met at right angles. When the plug is being inserted into the neck, it will be understood that the packing-ring is drawn downwardly and partially out of the groove or seat 2 and is also snugly wedged between the outer lower edge of the groove or seat and the lower concaved portion of the flange or enlargement 8 of the plug, thereby preventing entire displacement of the packing-ring from its groove or seat. The fric-



tional engagement between the neck of the jar, the packing-ring, and the closure-plug is sufficient to prevent accidental displacement of the plug by rough handling and the pressure of the gas within the jar, although it may be forcibly removed by inserting a knife-blade or other implement beneath the cap-flange 7 and prying upwardly thereon, so as to overcome the frictional engagement between the plug and the jar.

It is here desired to call attention to Fig. 4 of the drawings, wherein the plug has been shown slightly started from its closed position, whereby the packing-ring is also forced outwardly, and in view of the fact that its outer edge is bent over the lower edge of its seat it will be forced outwardly and beneath the upper overhanging flange 3 of the seat instead of being forced out of the neck of the jar with the plug. When the outer edge of the packing-ring has come into engagement with the back of the groove and cannot be further displaced, its inner edge portion rucks up between the neck of the jar and the closure-plug, as the packing-ring is greater in width than the depth of the groove, which results in increased frictional engagement between the jar and the plug, and unless the force is sufficient to overcome this frictional engagement the closure-plug will not be displaced. Ordinarily rough handling and the pressure of the gases within fruit and pickle jars is not sufficient to force the plug out of the neck of the jar, and therefore the present arrangement of parts, although extremely simple, is effective for the purpose designed and accomplishes the result of holding the closure-plug snugly within the neck of the jar without the employment of external fastenings.

I also contemplate sealing the jar by means of a piece of paper or label 11, which is applied across the outer end of the plug and pasted to the upper edge of the jar, whereby dust is excluded from the joint between the plug and the jar, and it is necessary to destroy the paper seal or label when an implement is inserted between the cap-flange and the jar to pry the plug out of the neck of the jar.

After the closure-plug has been removed from the neck of the jar the packing-ring may be removed from its seat in the neck and fitted to the closure-plug so as to snugly embrace the shouldered portion 8 thereof, so that when the plug is again inserted into the neck the packing-ring will bind upon the upper edge of the neck portion 3, so as to close the joint between the plug and the neck in a manner to exclude dust and foreign matter from the interior of the jar, whereby it will be understood that it is not necessary to again insert the plug to the original extent, and the plug may be conveniently removed whenever it is desired to remove some of the contents of the jar without requiring the application of force, as is necessary to unseat the plug from its original position.

What I claim is—

1. The combination with a jar having an inner marginal groove or seat formed in the neck thereof and provided with back, top and bottom walls and open at its front only, of a thin flat packing-ring of greater width than the depth of the groove with its outer edge seated in the groove and its inner edge projected out of and beyond the open front of the groove or seat, and a closure-plug slightly less in diameter than the inner diameter of the neck of the jar at the lower side of the groove therein, and provided with an intermediate marginal enlargement or flange to bind the packing-ring between the lower outer edge of the groove or seat and the lower edge of the flange, whereby the packing-ring will be rucked up in the seat upon an initial outward movement of the closure-plug and thereby prevent accidental displacement thereof.

2. The combination with a jar having an inner marginal groove or seat formed in the neck thereof, a thin flat packing-ring having its outer edge seated in the groove and its inner edge projected inwardly and downwardly into the neck of the jar, and a closure-plug having its outer end provided with a marginal cap-flange to engage the upper edge of the jar, and an intermediate marginal flange or enlargement to engage the inner projected edge of the packing-ring and bind the same between the lower edge of the flange and the lower outer edge of the groove or seat in the jar.

3. The combination with a jar, having an inner marginal groove or seat formed in the neck thereof, with the lower side of the groove projected into the neck-opening beyond the upper side thereof, a packing-ring of greater width than the depth of the groove with its outer edge fitted in the groove or seat and its inner edge projected out of the groove, and a closure-plug having a diameter slightly less than that of the neck at the lower side of the groove therein, and also provided with an intermediate marginal enlargement or flange to bind the packing-ring between the lower edge of the groove or seat and the lower side of the flange, whereby the packing-ring will be rucked up in the seat upon an initial outward movement of the closure-plug and thereby prevent accidental displacement thereof.

4. The combination with a jar having an inner marginal groove or seat formed in the neck thereof, the lower side of the groove being projected into the neck and beyond the upper side of the groove, a thin flat packing-ring having its outer edge fitted in the groove and its inner edge projected out of the groove, and a closure-plug of slightly less diameter than the inner diameter of the neck at the lower side of the groove, and provided with an intermediate marginal enlargement or flange having a beveled lower side to bind the packing-ring between said lower side and the lower edge of the groove or seat, and an outwardly-directed marginal cap-flange at



the outer end of the plug to overlap the upper edge of the jar.

5. The combination with a jar having an inner marginal groove or seat formed in the neck thereof and provided with back, top and bottom walls, and an open front, of a flat packing-ring of greater width than the depth of the groove, with its outer edge seated in the groove and having its inner edge projected out of and beyond the open front of the groove or seat, and a closure-plug slightly less in diameter than the neck of the jar at the lower side of the groove therein and capable of frictional engagement with the projected inner edge of the packing-ring to bind the latter between the lower edge of the groove or seat and the plug, whereby the packing-ring will be rucked up in the seat upon an initial outward movement of the closure-plug and thereby prevent accidental displacement thereof.

6. The combination with a jar having an inner marginal groove or seat formed in the neck thereof and provided with back, top and bottom walls, and an open front, of a flat packing-ring of a greater width than the depth of the groove, with its outer edge seated in the groove and having its inner edge projected out of and beyond the open front of the groove or seat, and a closure-plug which

has a reduced end, an intermediate external diameter capable of frictional engagement with the projected inner edge of the packing-ring to bind the latter between the lower edge of the groove or seat and the plug, and a cap-flange to overhang the outer edge of the neck of the jar, whereby the packing-ring will be rucked up in the seat upon initial outward movement of the closure and thereby prevent accidental displacement thereof.

7. The combination with a jar having an internal marginal flange or shoulder within the neck thereof, of a closure-plug, a flat packing-ring lying between and in frictional engagement with the plug and the neck, with its outer edge underlying the flange or shoulder, whereby the ring will be rucked up upon an initial outward movement of the closure-plug, and thereby prevent accidental displacement thereof, and means to prevent the packing-ring from being pushed into the jar by the insertion of the closure-plug.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

FRANK E. DOPHEIDE.

Witnesses:

C. L. STIEDLEY,

A. E. DOPHEIDE.