

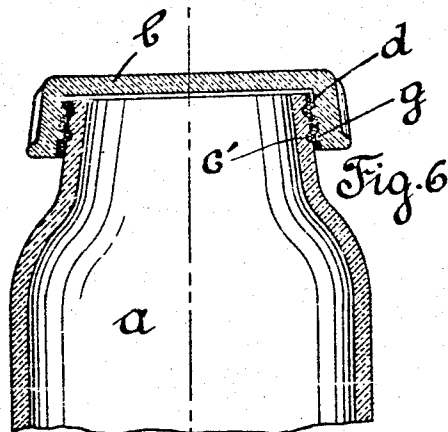
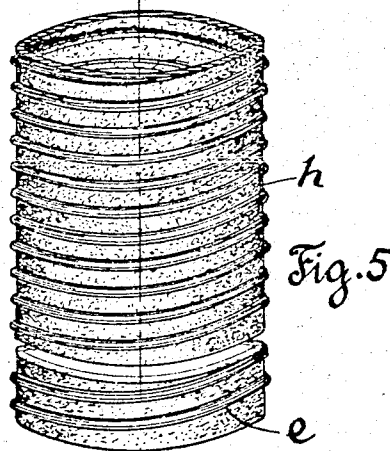
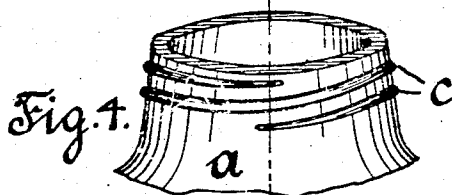
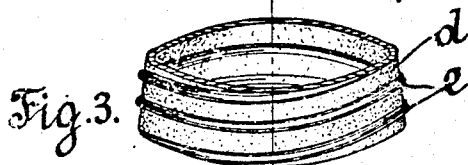
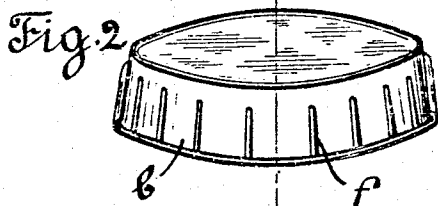
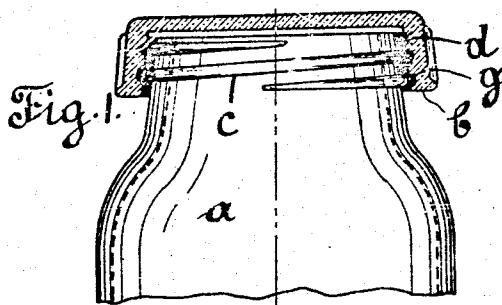
No. 759,168.

PATENTED MAY 3, 1904.

W. B. FENN.
JAR CLOSURE.

APPLICATION FILED JUNE 10, 1903.

NO MODEL.



Witness:

W. H. Clay
Chas. H. Chert

Inventor,
William B. Fenn
by *Paul Synnestvedt*
Attorney

UNITED STATES PATENT OFFICE.

WILLIAM B. FENN, OF WASHINGTON, PENNSYLVANIA.

JAR-CLOSURE.

SPECIFICATION forming part of Letters Patent No. 759,168, dated May 3, 1904.

Application filed June 10, 1903. Serial No. 160,830. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM B. FENN, a citizen of the United States, residing at Washington, in the State of Pennsylvania, have invented certain new and useful Improvements in Jar-Closures, of which the following is a specification.

My invention relates to removable means for effecting hermetical or liquid-tight closures of jars, bottles, or other like receptacles. The objects of my invention are, to provide a closure which is readily adjustable to its place and easily removable; to provide a means by which the packing is compressed by reason of the shape of the parts and may be graduated to any desired pressure; to provide a cap closure in which the cap is not brought in contact with any hard material and therefore may be made of glass without the necessity of great accuracy in its form; to provide a packing ring which is firmly held in place and yet may be easily removed; to provide a closure of which all the parts are open and removable so as to be easily washed, and yet when in place are not dependent upon mere friction to hold them in position. The foregoing objects, together with other advantages which will hereinafter appear, I attain by the construction and assemblage of parts as illustrated in preferred forms in the accompanying drawings, wherein

Figure 1 is a vertical central section through my closing device, on a jar neck shown in elevation.

Figures 2, 3 and 4 are perspective views of the cap, the packing ring, and the jar neck, respectively, shown separately.

Figure 5 shows a convenient mode of making rubber rings for the packing, by slicing them off of a tube molded for the purpose.

Figure 6 represents a central section of a jar embodying a modification of my device in which the situation of the threads is inverted, making a groove in the jar neck instead of a projecting thread.

For simplicity and cheapness the closure is made of two parts, a cap and a packing. In order to avoid the use of metallic parts I prefer to use a glass cap *b*, and for convenience I arrange it to screw upon the jar. It is necessary, however, to avoid contact of the two

parts of glass, because it would be difficult to fit them nicely together and there is danger of breakage if one part grinds upon the other. Again, means for compressing the packing is necessary to get a good seal. The closure therefore is made by forming both the outer surface of the neck of the vessel *a*, and the inner surface of the cap *b*, of sloping or conical form, and providing each surface with threads *c*, *g*, thereon, which are thus differential in relation, and so gradually reduce the space between them as the cap *b* is screwed on. Between the neck and cap is preferably placed a rubber ring *d* of the proper consistency, and it is provided with threads as shown, so as to have an independent hold upon each the neck and the cap. It will be seen that the ring *d* may either turn on the neck and move with the cap, or turn in the cap and remain stationary on the neck, or turn on both at once; and in any case the turning of the threads compresses the rubber ring and makes an extremely tight seal, not depending on friction to keep it in place.

Upon unscrewing the cap, a very little turn removes it, and the rubber ring then remains attached to one or the other of the parts. The cap is very readily put in place and the fact that either cap or ring may turn, indifferently, prevents sticking and renders any adjustment unnecessary. The form of thread gives a very powerful pressure and a secure locking in place, the glass parts do not come into contact, and while the contents of the jar only meet the packing on a thin edge, the latter presents a wide thickness between the inside and any port of escape.

In some cases it may be convenient to place the male thread on the cap and the female thread in the neck, as shown in Figure 6 (*c'* and *g'*), and in this instance of course, the positions of the threads in the wall of the ring *d* are inverted to correspond. A series of ribs *f*, may be used on the cap for aid in turning it. The rings *d* may be made in any desired manner, either molded conical in form or joined up from a strip, or sliced from a tube *h*, as shown in Figure 5.

The device shown is not only very cheap to make, but it will be seen that the parts can be readily taken apart and cleaned, as they pre-

sent no undercut surfaces to catch dirt. The common difficulty of crumpling or "bunching," in the use of rubber packing rings, is entirely avoided by the peculiar form of ring, as well as by the provision for free turning of either of the parts in screwing to place. Other advantages will readily occur to users of such devices.

Having thus described my invention and illustrated its use, what I claim, and desire to secure by Letters Patent, is the following:

1. A jar closure comprising in combination a revoluble packing ring provided with means for holding it upon the jar neck and provided upon its outside with threads arranged upon a sloping surface, and a cap provided with co-operating threads upon its interior, also arranged upon a conical or sloping surface, substantially as described.

2. The combination with a cap having an interior conical surface, a vessel neck having a conical exterior surface substantially parallel with the said cap surface, and an elastic ring provided with means for holding it upon said neck and means for holding it within said cap.

3. The combination with a vessel neck having means for retaining a revoluble ring thereon, of an elastic ring provided with screw-threads on its outer surface arranged upon a conical face, and a cap co-operating with said ring provided with an interior conical face and screw threads to co-operate with said threads on the ring.

4. In a jar closure the combination with a threaded neck and threaded cap, of a packing ring comprising a strip of pliable material with screw threads on its exterior and on its interior surfaces, substantially as described.

5. In a jar closure the combination with a threaded cap and neck, of an elastic ring provided with both interior and exterior conical surfaces, each provided with differential threads thereon, whereby the ring may move either in or on the threads of the neck and cap to tighten the contact.

6. The combination of a jar having a conical neck, a cap having a conical interior surface, a ring having parallel surfaces inside and outside, both surfaces of said ring and of the cap and of the neck being provided with differential threads, substantially as described.

7. A jar closure comprising a screw-threaded neck, a screw-threaded cap and a screw-threaded packing ring between the two.

8. In a jar closure the combination of a conical neck having differential threads, an interiorly conical cap having corresponding differential threads, and a revoluble screw-threaded elastic packing ring between the cap and neck, substantially as described.

9. A closure for glass jars comprising a neck provided with threads, a glass cap provided with corresponding threads, and a packing between the cap and neck threads, the threads on both said parts being of varying diameter with respect to the center of the neck, whereby the space between the parts is reduced as the cap is screwed on the neck, substantially as described.

In witness whereof I have hereunto signed my name in the presence of the two subscribed witnesses.

WILLIAM B. FENN.

Witnesses:

MINNIE A. LEONARD,
ALVAN DORMAN.