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VACUUM PACKAGE AND MEANS FOR SEALING SAME.

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1,079,450. Patented Nov. 25, 1913.

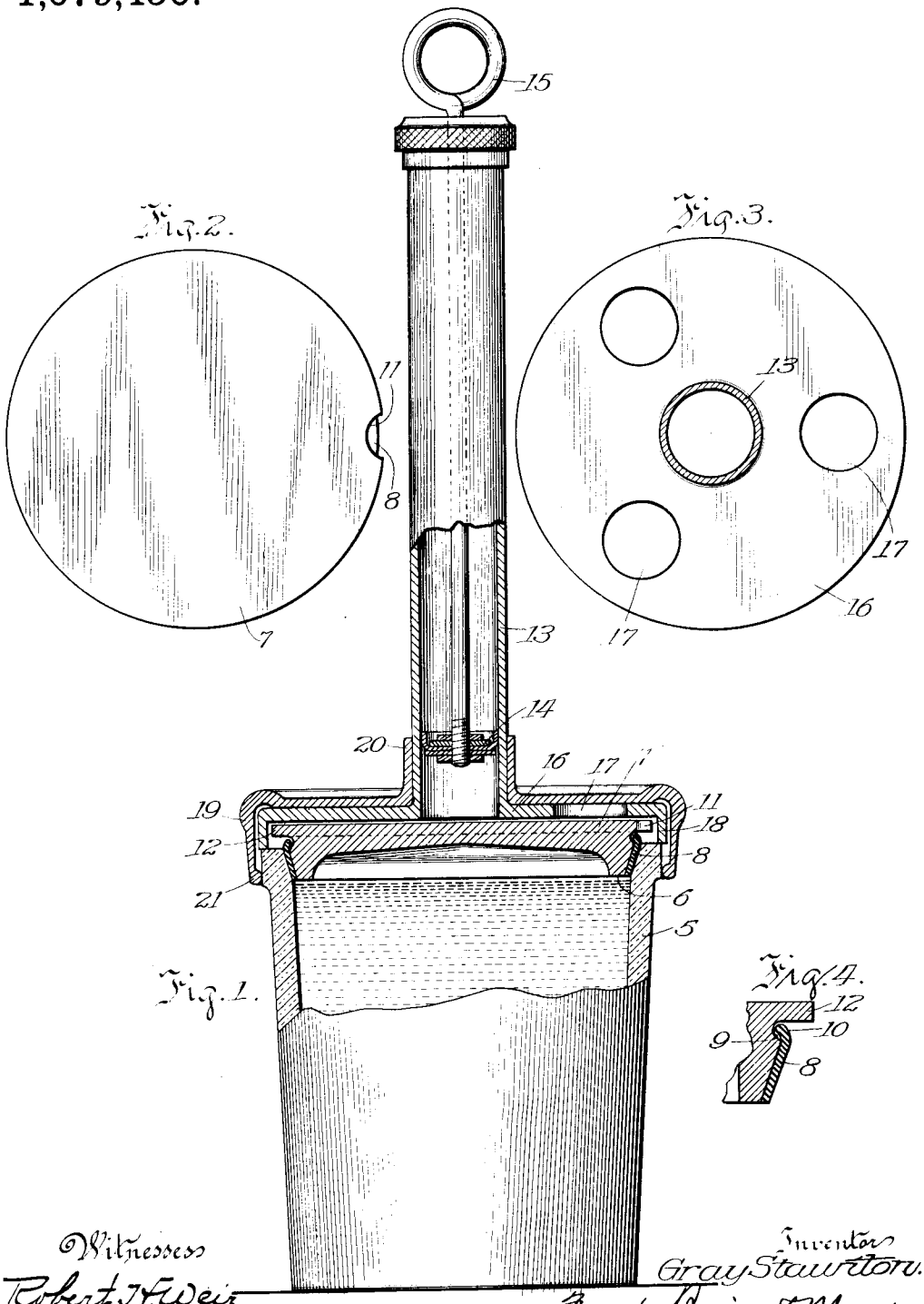


Fig. 2.

Fig. 3.

Fig. 1.

Fig. 4.

Witnesses

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VACUUM-PACKAGE AND MEANS FOR SEALING SAME.

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Application filed July 12, 1912. Serial No. 708,965.

To all whom it may concern:

Be it known that I, GRAY STAUNTON, a citizen of the United States, residing at Muskegon, in the county of Muskegon and State of Michigan, have invented certain new and useful Improvements in Vacuum-Packages and Means for Sealing Same, of which the following is a specification.

My invention relates to improvements in certain features of vacuum packages, and means for sealing said packages.

One of the objects of my invention is to provide an imperforate, sanitary package, comprising a jar and lid, or closure, to be made, preferably, entirely of glass, with the exception of the packing ring, which may be composed of a yielding, resilient material, such as rubber, or the like.

Another object of my invention is to provide a mechanical air-exhausting means, which, in coöperation with the jar body will permit the closure, or lid thereof, to act as a valve during the process of exhausting the air from the package. And still another object of my invention is to provide a novel means for holding the packing ring on the lid or closure before its application to the jar.

Other and further objects of my invention will become readily apparent to persons skilled in the art from a consideration of the following descriptions when taken in conjunction with the drawing, wherein:

Figure 1 is a central, vertical section of a portion of the jar and the exhausting means therefor. Fig. 2 is a top view of the lid, or closure, of the jar. Fig. 3 is the metallic base terminal of the pump, which encompasses the closure and fits over on top of the jar when the pump is applied to the jar for the purpose of extracting the air therefrom. Fig. 4 is a fragmentary section of a part of the closure or lid, showing the manner of attaching and retaining the packing ring thereon.

In all the views the same reference characters indicate similar parts.

5 is a jar in which food or other perishable material may be preserved. At its mouth its walls are preferably outwardly-flared, as at 6. For sanitary purposes the jar and closure are preferably made of glass or other vitreous material. The closure 7 is also tapered at substantially the same angle as the interior mouth surface of the jar, but somewhat smaller in diameter, to admit of the intervening packing ring 8. The body of the closure, or that portion which enters the jar being tapered, an annular groove 9 is made in the closure, near the upper portion near the tapered top, for the purpose of securely holding the packing ring in place.

When the packing ring is applied to the closure, the largest diameter of the closure being near the groove, the resilient and elastic material, of which the packing ring or band, 8 is composed being more greatly stretched at this point, it will cause its edge to turn into the groove as at 10, thereby holding the packing ring securely on the closure before application of the closure to the jar.

When substantially all of the air has been extracted from the jar by the pump the closure, or lid, will be held down firmly in its seat, in the jar opening, by the preponderating atmospheric pressure from without the jar, and the jar surfaces, at its mouth, and the surfaces of the closure that confront the same being tapered, and the packing ring between these surfaces being of a yielding nature, the closure, or lid, will be wedged firmly into the mouth of the jar by the effect of the atmospheric pressure. A notch 11 is provided in the overlaying ledge 12 of the closure to permit access to the packing ring 8.

When it is desired to break the seal it is only necessary to insert a sharp instrument, such as a pin, through the notch 11 and thereby press the packing ring 8 to one side to permit entrance of air into the jar, and thereby equalize the pressure on both sides of the closure.

For the purpose of exhausting the air from the jar I provide an air pump 13, provided with a reciprocatable piston 14, operated by means of the handle 15, and terminating in a disk base, 16, which is provided with a plurality of perforations 17. The disk is turned down at its edges to provide a flange 18, which, in the process of sealing, encompasses the closure 7, and rests upon the upper edge of the jar, as plainly shown in Fig. 1, to permit valve action of the closure 7 during the process of sealing. An overlying, soft rubber cap 19, makes close contact with the cylinder of the pump, as at 20, and at its terminal edge makes air-tight contact with the jar to be sealed, as at 21.

When the piston 14, of the pump is ele-

vated, in the process of sealing the jar, the closure 7 is thereby raised to permit air to escape between the said closure and the confronting surfaces of the jar into the cylinder of the pump. When the piston is depressed the closure is immediately seated and the air that has been taken from the jar will escape through the openings 17 and out at the edge, between the cap 19 and the jar, as at 21, and these effects are produced at each reciprocation of the pump until the jar has become completely exhausted of air. After the jar has thus been exhausted of air, the pump may be removed and the closure will remain firmly in place, as heretofore stated, by the preponderance of the pressure produced by the atmospheric conditions.

The ease and efficiency with which the jar can be so quickly sealed, and the cheapness of the cost of the article renders it highly valuable for house-hold uses or for manufacturing purposes.

Having described my invention, what I claim is:

1. In a device of the character described the combination with a vessel to be sealed, a closure therefor and an air exhaust pump having a piston and an expanded base adapted to overlie and encompass said closure and to rest upon the edge of said vessel, leaving room for the closure to move upwardly to permit escape of the air from said vessel during process of sealing, said base having openings for escape of air on the downstroke of its piston, and a resilient member extending from adjacent the center of said base over said openings in the base and over the joints between the pump base and vessel, the free edge of said member being in contact with the vessel below said joints.

2. In a device of the character described, the combination with a vessel to be sealed, a closure therefor, smaller in diameter than said vessel at the open end thereof, a pump having a base, encompassing said closure and adapted to rest upon the edge of said vessel, and an air tight yieldingly responsive means overlying the base and bridging the joint between said vessel and base during the process of sealing the vessel, said base having air-admitting openings under said air tight means.

3. In combination with a vessel to be sealed having a coöperative closure carrying a packing ring, of a pump having a base part supported directly by said vessel, leaving the closure free, and a rubber cap overlying said base part and said closure and having a lower edge adapted to make contact with said vessel below the open mouth thereof, said base being shaped to provide openings for passage of air under said cap for discharge from its lower vessel-contacting edge.

4. In a device of the character described, the combination with a vessel to be sealed, said vessel having, surrounding its open end, an annular edge and a cover for said open end having a flat upper portion of less diameter than said annular edge of the vessel, and suitable packing means between the vessel and cover, of a pump having a base provided with a flat portion coacting with the flat portion of the cover and a flange extending from said flat portion of the base down around said flat portion of the cover for engagement with said annular edge of the vessel, said flange being of a depth to space said flat portion of the base from said cover to permit operation of the cover as a valve for the vessel during operation of the pump, and a rubber cap overlying said pump base and annular edge of the vessel to operate as a valve for the space between the cover and base during operation of the pump.

In testimony whereof I hereunto set my hand in the presence of two witnesses.

GRAY STAUNTON.

In the presence of—

ARTHUR A. ANDERSON,

OTTO N. MUSKE.