No. 774,120. PATENTED NOV. 1, 1904.

W. W. VAUGHAN.

MEANS FOR SEALING JARS OR PACKAGES AND METHOD OF SEALING SAME.

APPLICATION FILED MAY 13, 1904.

NO MODEL.

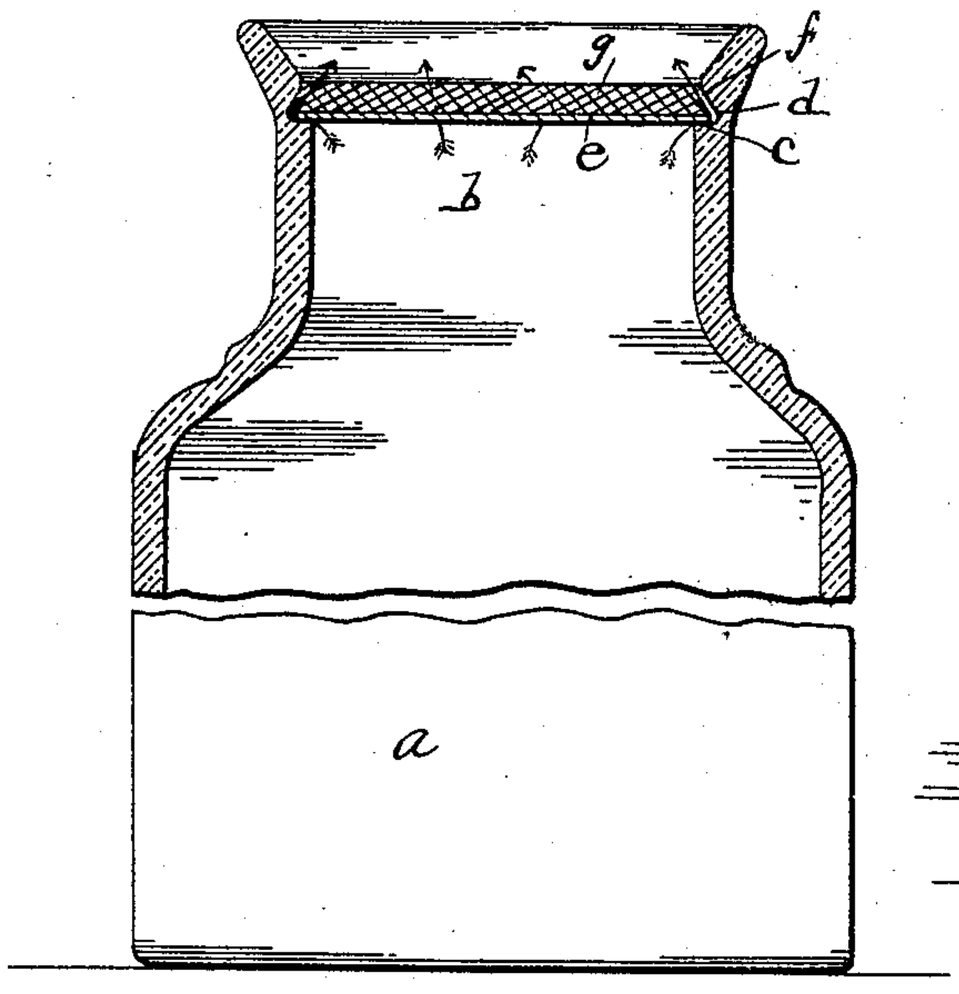

Fig. 1.

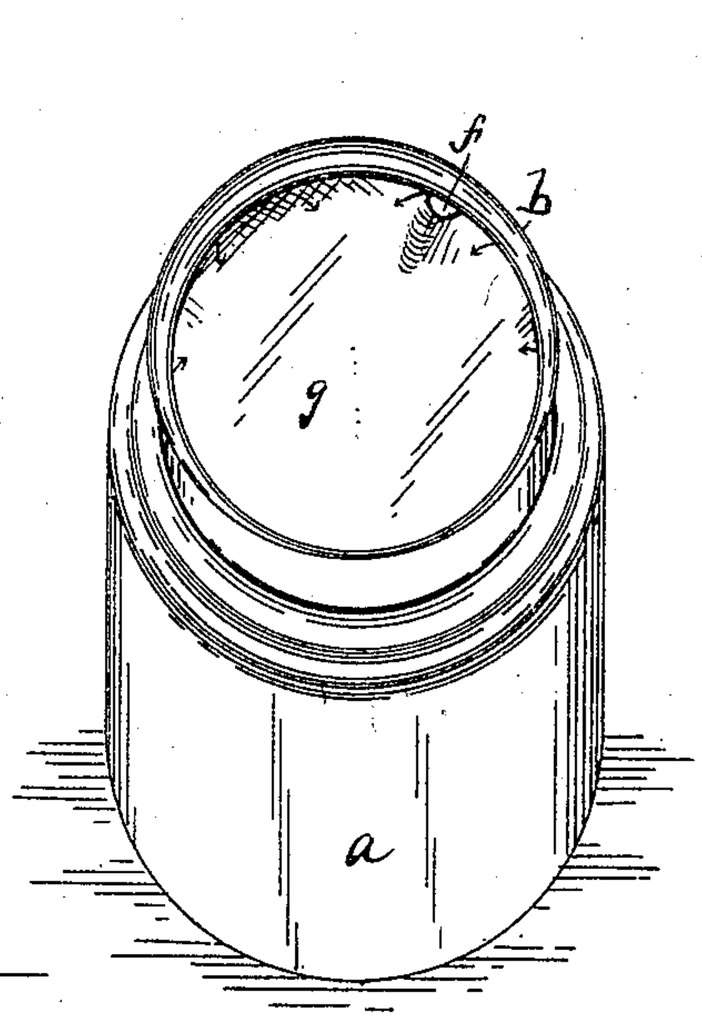

Fig. 2.

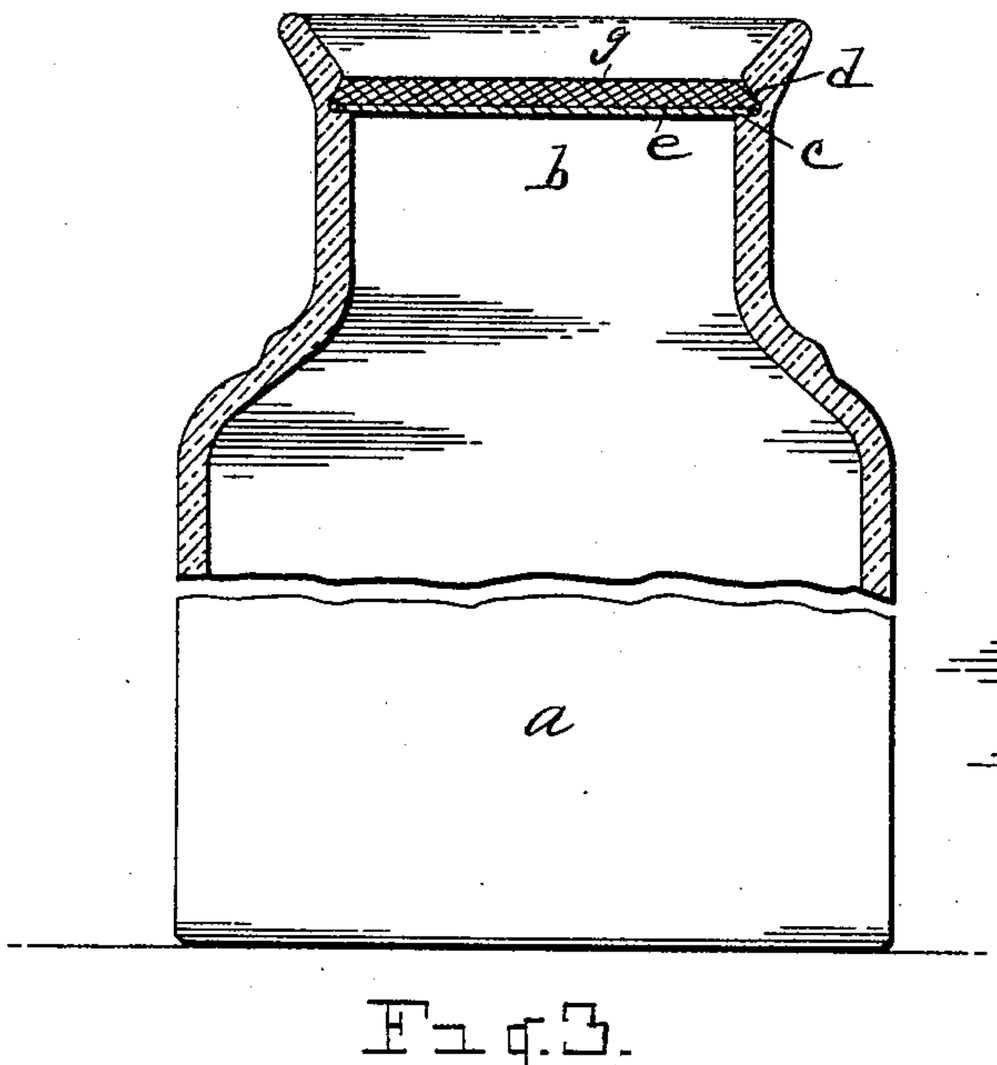

Fig. 3.

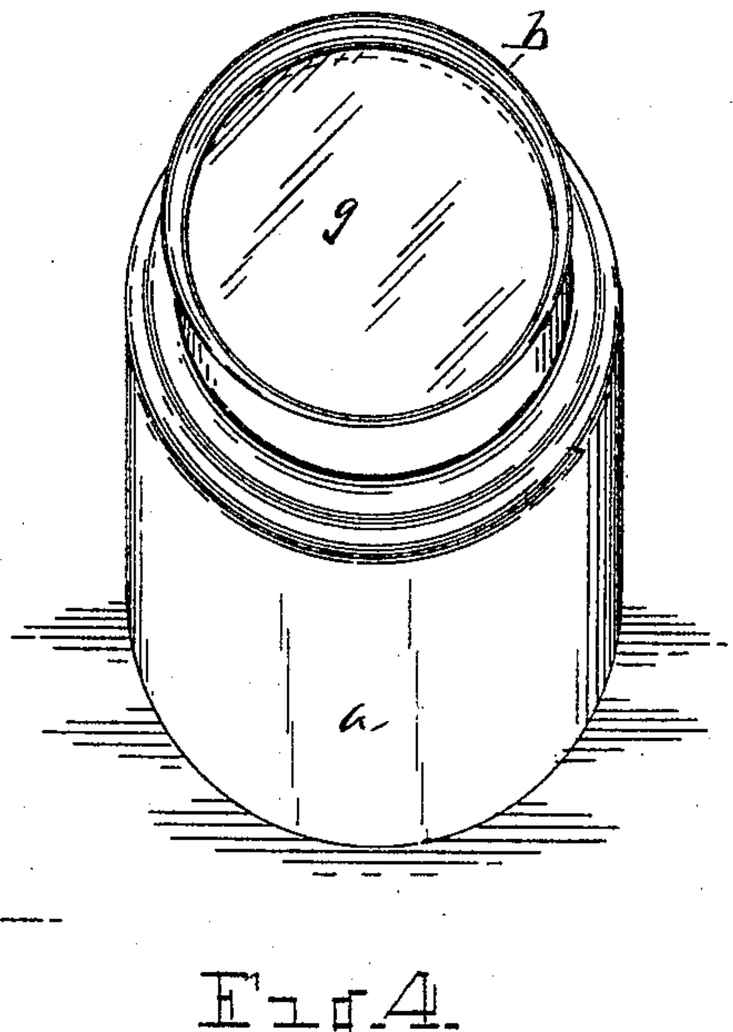

Fig. 4.

Witnesses:
C. B. Baenziger.
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By his Attorney
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No. 774,120. Patented November 1, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM W. VAUGHAN, OF DETROIT, MICHIGAN.

MEANS FOR SEALING JARS OR PACKAGES AND METHOD OF SEALING SAME.

SPECIFICATION forming part of Letters Patent No. 774,120, dated November 1, 1904.

Original application filed October 24, 1903, Serial No. 178,374. Divided and this application filed May 13, 1904. Serial No. 207,828. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. VAUGHAN, a citizen of the United States, residing at Detroit, county of Wayne, State of Michigan, have invented a certain new and useful Improvement in Means for Sealing Jars or Packages and Methods of Sealing the Same, of which the following is a specification, reference being had to the accompanying drawings, which form a part of this specification.

My invention has for its object an improved means for sealing jars or packages and the method of sealing the same.

My invention comprises the construction and method hereinafter specified and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is a view in vertical section through a jar, showing the means and method of sealing the same before the process is completed, the said process showing how the heated air escapes through the heated wax before pressure is applied thereupon. Fig. 2 is a view in perspective of the jar, showing my invention while the process is yet incomplete or before pressure is applied to the heated wax. Fig. 3 is a view in vertical section, showing the completed package after pressure has been applied. Fig. 4 is a view in perspective, illustrative also of the completed package.

My present invention aims to provide improved means and method of sealing jars or packages in a superior, simple, and efficient manner.

As illustrated in the drawings, *a* represents the body of a jar or package, which may be of any desired form, the same having a neck *b*, provided on its interior periphery with a shoulder *c*, and a groove *d*, projecting outwardly and forming a part of said shoulder, the shoulder projecting inward, preferably, beyond the upper edge of the groove, the diameter of the neck at the upper edge of the groove being larger than the diameter of the neck from the inner edge of the said shoulder, as shown. Upon the said shoulder I contemplate locating a disk *e*, of any suitable material—as, for example, a paper disk—the disk being readily seated upon the shoulder in consequence of the diameter of the neck being larger thereacross at the inner edge of the said groove. The disk preferably rests loosely upon the shoulder, its diameter being preferably less than the diameter of the outer periphery of the shoulder. This allows a ready escape of air about the edge of said disk. Where the disk is made of porous material, the air may also escape through the body of the disk. Upon this disk I flow melted wax, of any desired material, the wax flowing over the body of the disk and into said groove. I have found that by flowing melted wax upon the disk the air within the jar or package is rarefied by the heat and expands, causing air to escape about or through the disk and through the melted wax, the air bubbling therefrom through corresponding channels or vents formed in the melted wax by the pressure of the air beneath, such vents or channels through which the air has passed or bubbled being indicated in Figs. 1 and 2 at *f*. Obviously, however, the sealing would be incomplete and unsatisfactory if the jar or package were left in this condition, as when the package cooled air would reënter thereinto through the vents or channels formed in the melted wax, as above stated. In the process of sealing the package my invention contemplates a careful watching to see when the air has ceased to bubble through the melted wax and then immediately, while the wax is still plastic, applying pressure in any suitable manner upon the wax to close all the said vents or passages and to more effectually force the plastic wax into said groove about the periphery of said disk to fill said disk and make a firm closure of the package, so that no air can reënter thereinto. There is thus formed within the package above its contents a certain degree of vacuum, in consequence of which the contents of the package are thoroughly preserved.

While I do not limit myself to any particular means of applying pressure to the plastic wax, as above stated, this might be accomplished by means of a suitable seal construct-

ed to imprint the name of the firm (or other desired matter) by whom the package is prepared or by whom it is put upon the market.

In the construction of jars or packages there very naturally result slight inequalities in the periphery of the groove; but wax under pressure is obviously caused to efficiently contact with such inequalities of surface to effect a tight closure of the package. The melted wax is indicated at *g*. In this manner the package can be rendered perfectly air-tight.

The desirability of having a partial vacuum above the contents of the jar or package is well understood, and the means and process employed in carrying out my invention efficiently secure this end, while when such partial vacuum has been secured by the application of pressure to the plastic wax the liability of this partial vacuum being destroyed is effectually prevented, as all openings where the air has escaped through the melted wax are by such pressure effectually closed up, as indicated more particularly in Figs. 3 and 4.

When the wax is applied in a heated condition upon the disk *e*, thereby heating the air within the neck of the package, air will sometimes escape at various points, the arrows in Figs. 1 and 3 indicating air vents or passages, while at other times the air will escape mainly at a single point, as through the opening indicated at *f*, the melted wax being blown back away from the opening while the air is escaping. The location and number of air-vents will of course vary with various packages, one or more such air-vents being caused by the pressure within the package in the escape of the air.

This invention is designed as an improvement upon that for which an application was filed by me October 24, 1903, Serial No. 178,374.

What I claim as my invention is—

1. The method herein described of sealing a jar or package consisting of seating in the neck of the jar or package a disk, applying wax in a heated condition over the upper surface of said disk whereby the air within the jar or package will be heated and expanded thereby causing a portion of the air to escape from the jar or package, and applying pressure upon the heated wax to close the orifices through which the air has escaped to render the closure of the jar or package air-tight.

2. The method herein described of sealing a jar or package consisting of seating in the neck of the jar or package a disk, flowing wax in a heated condition over the upper surface of the disk whereby the air within the jar or package will be heated and expanded causing a portion of the air to escape through said jar or package about the periphery thereof, and then applying pressure upon the melted wax thereby closing any openings through which the air has escaped through or about the heated wax and forcing the melted wax about the periphery of the disk to make an air-tight closure of the jar or package.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

WILLIAM W. VAUGHAN.

Witnesses:
N. S. WRIGHT,
MARCIA V. SMITH.