E. MEIERJOHANN.

JAR SEALING MEANS.

APPLICATION FILED JAN. 18, 1916.

1,197,646. Patented Sept. 12, 1916.

Fig. 1.

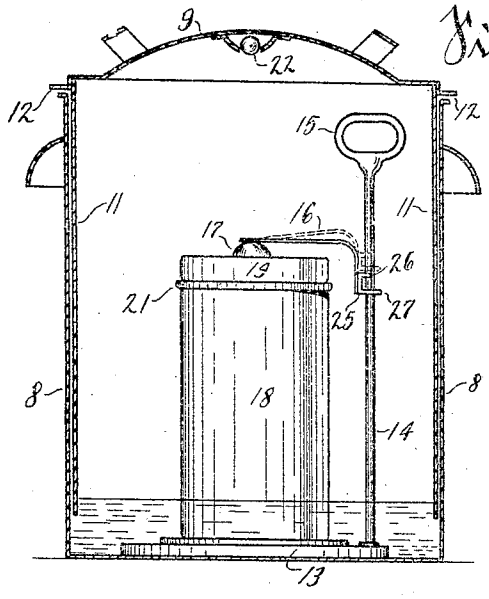


Fig. 2.

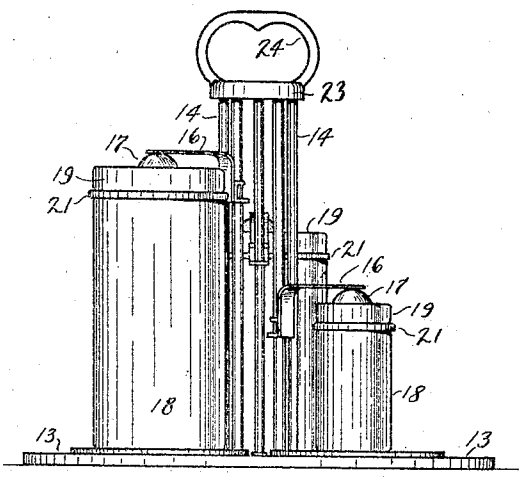


Fig. 3.

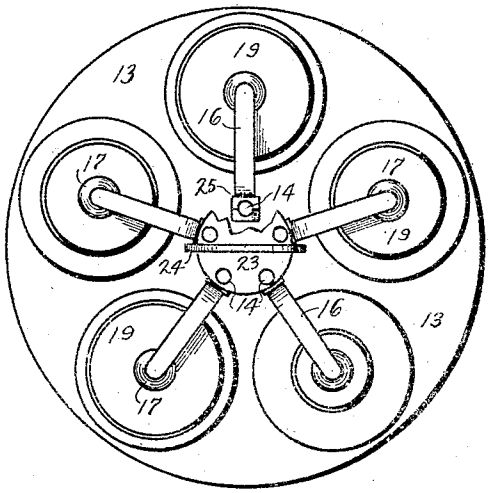


Fig. 4.

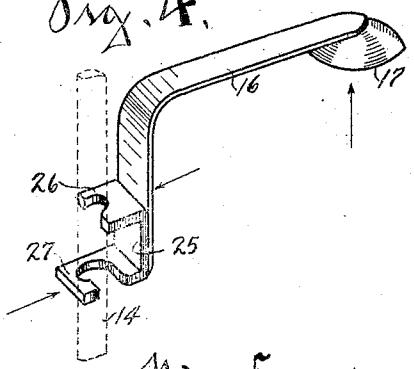


Fig. 5.

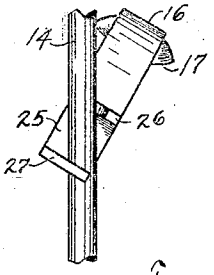
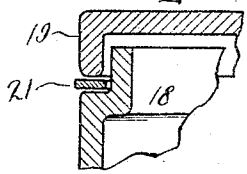


Fig. 6.



Inventor.

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UNITED STATES PATENT OFFICE.

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JAR-SEALING MEANS.

1,197,646. Specification of Letters Patent. Patented Sept. 12, 1916.

Application filed January 18, 1916. Serial No. 72,871.

To all whom it may concern:

Be it known that I, ERNST MEIERJOHANN, residing at Cincinnati, Hamilton county, State of Ohio, have invented certain new and useful Jar-Sealing Means, of which the following is a clear, full, and exact description, attention being called to the drawing which accompanies this application and forms a part thereof.

In some processes for preserving food matter like fruits, vegetables, meats, etc., it is essential that the vessels, jars and cans which are used are closed hermetically. Such air-tight closures may be obtained in various ways. In some methods reliance is had upon a vacuum or partial vacuum within the vessels whereby the cover of the vessel is closely held to its seat by the effects of the atmospheric pressure. Empty space, limited, but sufficient for the purpose and in excess of that occupied by the contents of the vessels is presumed, or in other words, the vessels are not completely or solidly filled.

My invention concerns means for reducing the air in this space, or for rarefying it sufficiently to obtain a vacuum which is effective for the required purpose. These means comprise an apparatus and appliances used in conjunction therewith, and the invention consists of the construction of these means as the same is hereinafter described and pointed out in the claims.

In connection with this description, the invention is also illustrated in the accompanying drawing, in which:

Figure 1 illustrates the apparatus of my invention complete in its simplest form, in which it may serve the limited use of a small family. Fig. 2 is a side-view of a part of the apparatus of larger size. Fig. 3 is a top-view of this part. Fig. 4 is a perspective view and Fig. 5 is an end view of an appliance used in connection with my apparatus. Fig. 6 in an enlarged sectional detail view illustrates a preferred form of construction of the jar to be used in connection with my invention.

In the drawing, numeral 8 indicates a vessel, preferably of cylindrical shape and of sheet metal. 9 is a lid for the same and 11 is a flange which depends from the underside of the lid and is closely fitted to the inside of vessel 8. This flange approaches sufficiently close to the bottom of the vessel so that its lower edge extends into a body of water of limited depth in the lower part of the vessel, the object being to obtain thereby an air-sealing joint or closure. Lid 9 projects beyond this flange 11 where they are connected to each other and forms there a shoulder 12 whereby the lid is seated upon the upper edge of vessel 8.

13 is a base of suitable material adapted to rest upon the bottom of vessel 8 and 14 is a post rigidly connected thereto. By preference the base is provided with a handle 15 whereby it may be conveniently handled when placed into vessel 8 or withdrawn therefrom.

16 is a spring arm at one end in sliding engagement with post 14, its free end extending over base 13 and provided with a cap-shaped bearing 17 secured to it.

The apparatus so constructed is used as follows: A jar 18 containing the prepared substance and with its lid 19 in position ready for sealing, is placed upon base 13 and spring arm 16 is lowered until its free end rests upon the lid. After that, its connected end is forced down on the post and beyond the position shown in dotted lines in Fig. 1. This places the spring arm under tension causing its free end to yieldingly hold down lid 19 of the jar. It also tends to tilt its rear end causing it to bind on opposite sides of the post as indicated by arrows in Fig. 4 and prevents the arm from slipping up. Base 13 with the jar on it is now placed into vessel 8 which by preference has been on a stove or a burner to heat the water therein. Vessel 8 which assumes the function of a steamer is closed by lid 9 to confine the steam therein which is generated quite rapidly owing to the limited quantity of water. The jar is subjected to this heat causing the air in it to expand as well as generation of steam from its contents which are usually placed into the jar hot. The excess of this air and steam escapes from under the lid which is forced up and commences to pop and vibrate on its seat whenever the pressure within overcomes the resistance of the spring-arm. This affords temporary relief after which the arm forces the lid again to its seat. A few minutes' treatment of the jar is sufficient after which, with base 13, it is removed from the steamer. The rapid change in temperature causes the hot and expanded air in the jar to condense thereby becoming rarefied and producing the partial vacuum necessary for the purpose.

The pressure of the atmosphere causes the lid to become firmly seated and to remain so until forcibly removed.

The use of a gasket 21 between the jar and its lid upon which the latter seats is presumed.

A suitable safety device which may be in form of a weighted ball 22, caged in lid 9 and automatically controlling an outlet in this latter prevents excessive pressure and by the blow-off also indicates conditions within.

The process is carried out in short time because the construction of the steamer permits quick generation of steam in view of the limited quantity of water required.

In Figs. 2 and 3 the possibility of constructing an apparatus of larger capacity is indicated, the steamer, not shown, being of correspondingly larger size. A plurality of vessels, five for instance may be treated simultaneously and accordingly there are five spring-arms and five posts. At their upper ends they are held in proper relation by a cap 23 which forms also a base for the handle 24.

In view of the presence of the handle at the upper end of posts 14, it is necessary that spring-arms 16 are constructed in a manner permitting their attachment to the posts and removal therefrom sidewise. The details of the construction whereby this is accomplished are illustrated in Figs. 4 and 5. The arms near their inner ends are bent so as to be substantially parallel to the posts and on this portion a coupling member 25 is provided which has two outwardly projecting lugs 26 and 27. These lugs have notches, the notch in the upper lug being open rearwardly, and the notch in the lower lug being open laterally as shown and engage the posts as shown in Fig. 4, the post being indicated in dotted lines. When the spring arm is under tension and the resistance of the jar under its free end forces said arm upwardly, lug 26 is pushed against the post from one side and lug 27, having a tendency to pull away from the post, is pushed against the opposite side thereof. Thus the coupling tends to twist in a vertical plane and binds against the post preventing the spring arm from slipping up on the post. Observe arrows in Fig. 4 which indicate the direction in which the forces act. The notch in the lower lug 27 is laterally open and permits removal of the arm in the manner indicated in Fig. 5, it being first slightly tilted to disengage the upper lug from the post.

A preferable form of construction of the jar to be used is illustrated in Fig. 6.

By breaking the air tight seal, to admit air to the jar, the lid is set free at once. This may be done by pulling the gasket sidewise at one or more points to disturb its position between the jar and its lid. By outwardly enlarging the gasket at one or more points in its periphery it may readily be grasped for the purpose.

Having described my invention, I claim as new:

1. In jar sealing means, the combination of a steamer serving to generate heat for raising the temperature of preserving jars placed thereinto, said steamer consisting of a vessel adapted to contain water in its lower part, a lid for it provided with a flange fitted to the inside of the vessel and extending with its lower edge into the water therein to water-seal the steamer, and means to yieldingly hold the lids of the jars down to their seats while in said vessel.

2. Jar-sealing means consisting of a base adapted to support a preserving jar provided with a cap, a post on this base and a spring arm on this post adapted to yieldingly bear at its free end upon the cap of the jar mentioned and provided at its other end with two spaced lugs each notched and fitted to adjustably engage the post and adapted to hold the arm in a fixed position thereon by the tension produced in it when its free end is caused to bear upon the cap mentioned.

3. Jar-sealing means consisting of a base adapted to support preserving jars provided with a cap, a plurality of posts grouped thereon, a cap to connect them at their upper ends, a handle provided on this cap serving to manipulate the device and a spring arm on each post removably connected thereto and in a manner to have a sliding engagement therewith permitting adjustment in a vertical direction of its free end with references to the caps on the preserving jars.

In testimony whereof, I hereby affix my signature in the presence of two witnesses.

ERNST MEIERJOHANN.

Witnesses:
ALBERT C. MITTENDORF,
C. SPENGEL.