

No. 639,682.

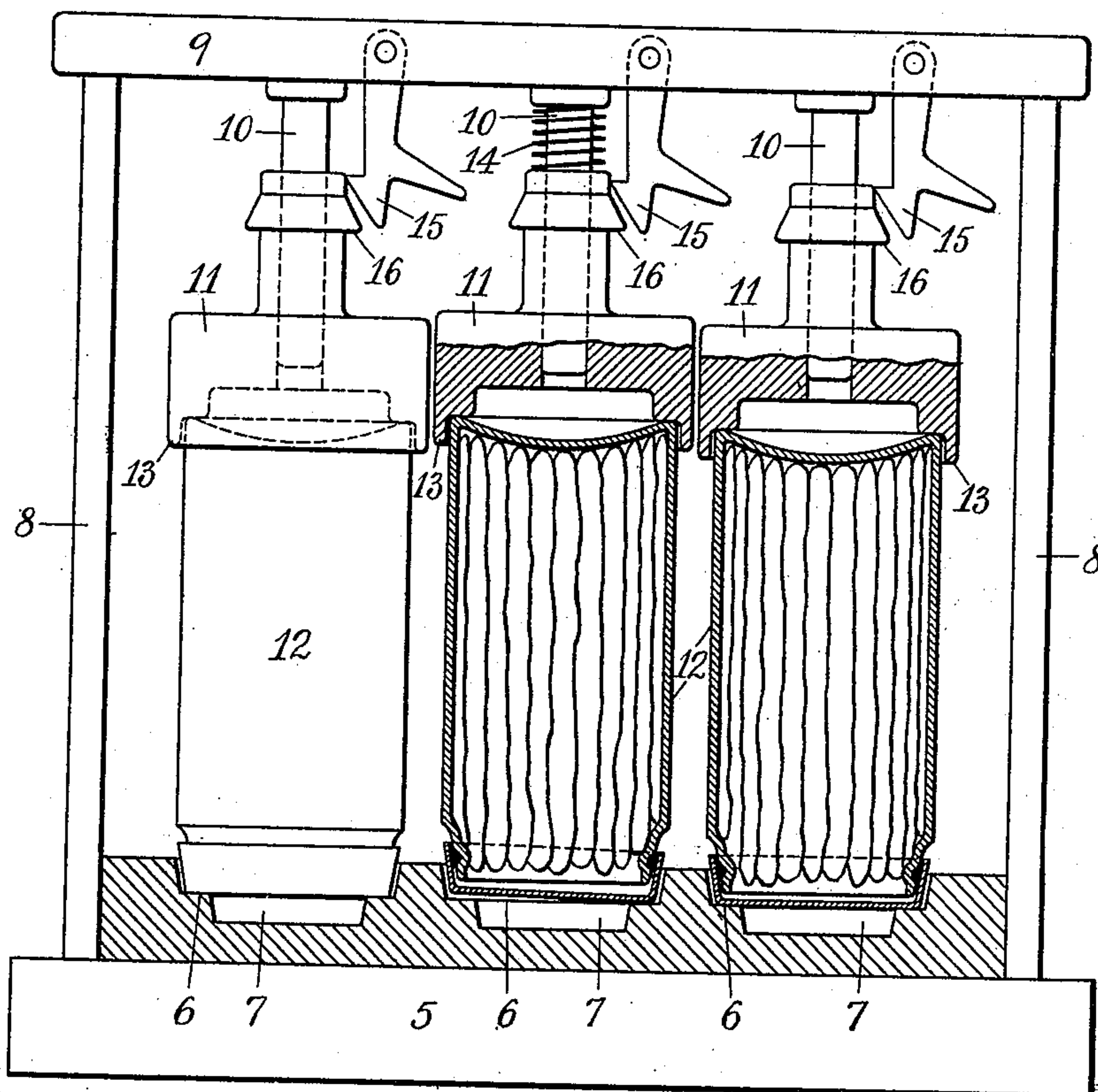
Patented Dec. 19, 1899.

W. A. LORENZ.
JAR SEALING APPARATUS.

(No Model.)

(Application filed Aug. 5, 1899.)

Fig. 1



Witnesses:
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UNITED STATES PATENT OFFICE.

WILLIAM A. LORENZ, OF HARTFORD, CONNECTICUT, ASSIGNOR OF THREE-FOURTHS TO WILLIAM H. HONISS, OF SAME PLACE, AND BARTLETT ARKELL, OF CANAJOHARIE, NEW YORK.

JAR-SEALING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 639,682, dated December 19, 1899.

Application filed August 5, 1899. Serial No. 726,320. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. LORENZ, a citizen of the United States of America, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Jar-Sealing Apparatus, of which the following is a specification.

This invention relates to improved apparatus for centering and leveling the caps of hermetically-sealed jars and for closing them down squarely upon their respective jars during the sealing operation.

The drawing is a side view, partly in central longitudinal section, of an apparatus embodying the present invention.

Jars of this class are hermetically sealed by means of a rubber gasket which is mounted on a shoulder or in a groove upon the outside of the neck of the jar and which is compressed during the sealing operations by means of a metallic cap having a flaring rim. The cap is pressed down upon the outside of the gasket during the cooking or air-exhausting operation, by means of which the air is expelled or withdrawn from the interior of the jar, after which the cap is permanently held in sealing contact with the gasket by means of external atmospheric pressure. During the operation of expelling or exhausting the air from these jars and sealing them down the caps are pressed into contact with the gaskets, and in so doing they are liable to become tilted, as represented by the middle jar of the drawing. This tilting of the caps is objectionable both for its appearance and for the more important reason that when sealed in this tilted position the belt of contact between the circular gasket and the conical rim of the inclined cap is not a circle, but is approximately an ellipse, which, therefore, does not compress the gasket uniformly at all points thereof, so as to seal the jars with certainty. The reliable and perfect sealing of these jars is highly important, especially in the treatment of food products, the preservation of which is dependent upon the complete exclusion of the air. Furthermore, by reason of variations in the necks of the jars, the

diameters of the caps, and the thickness of the gaskets the tops of the different caps are not at uniform distance from the base of the jar when properly sealed, thereby requiring that each cap in a series should be pressed down by independently-operating means.

The apparatus herein shown and described as an embodiment of my invention is represented as being of a size for receiving three jars, although the size of the apparatus may obviously be varied so as to take any desired number of jars. The jars are placed in this apparatus in an inverted position, and therefore this apparatus is best suited to the sealing of jars containing only solids. The base of the apparatus is provided with seats for the caps of the jars, these seats being preferably provided with a central recess, which may, if desired, be utilized as a seat for caps of a smaller size. The base is provided with the uprights 8, supporting a cross-bar 9, from which depend the studs 10, on which are mounted the plungers 11. These plungers are fitted to slide freely on the studs, and their lower faces are adapted to receive and centralize the bottoms of the inverted jars. As a means for centralizing the jars the plungers are provided with the flanges 13, which may either be continuous or interrupted, as in the form of a series of spurs, or the faces of the plungers may be adapted to centralize the jar by fitting into the depressions commonly made in the bottoms of jars of this class, as represented by the jars shown in the drawing.

The plungers 11 and their associated devices are or may be exactly alike and in any case are independent of each other in their operation. They may be made heavy enough to exert the required pressure by their own weight added to that of the jars and their contents, or the weight may be supplemented by means of a spring, as 14, above each of the plungers. As a means for holding the plungers in an elevated position clear of the jars while changing the latter the apparatus is provided with the latches 15, which may be suspended from the cross-bar 9 and engage beneath the shoulders 16 of the plungers.

In employing this device for the sealing operation the jars are filled, their gaskets and caps are placed in position, and the jars are transferred to the apparatus in an inverted position with their caps resting in their seats 6. The plungers are then let down upon the caps, and the apparatus, with its contained jars, is placed in the cooking-bath or in the retort of the exhausting apparatus, as the case may be. If the caps should happen to be placed upon the jars in a tilted position, as represented by the middle cap of the drawing, the raised side of the cap only will rest in contact with the seat 6, and therefore that raised portion will receive the entire weight of the jar and the pressure of the plunger 11, thereby tending to level and aline the cap with its jar until all rest centrally and squarely upon the seats 6, as represented by the right-hand jar of the drawing. If, however, the cap should fit too tightly around the gasket to permit the weight of the jar and its plunger thus to level and aline the cap, the subsequent operation of expelling or exhausting the air from the jar will complete that work, inasmuch as the air in escaping from the jar will lift that side of the cap which offers the least resistance, which in the case of the middle jar of the drawing, would be the left-hand side thereof. When an exhausting-pump is employed, this lifting action takes place at each pulsation of the pump, and each time that the cap lifts it is subjected to the leveling tendency of the pressure of the jar and its plunger upon the higher side of the cap, which tendency continues throughout the exhausting operation or until the cap rests squarely upon the jar. In order that the pressure of the jar and its plunger may thus be brought upon that side of the inclined cap which requires to be pressed down, it is necessary to centralize the jar with the seat 6 for the cap; otherwise the jars would incline sidewise to an extent equaling the inclination of the caps. For ex-

ample, the middle jar of the drawing would, in the absence of the centralizing flanges or spurs 13, have a tendency to incline to the left until its cap rested evenly upon the seat 6. This centralizing action is therefore the function of the flanges or spurs 13, which encompass the bottom of the jar and support it concentric with and at right angles to the seat 6 for the cap. The work of sealing jars of this class is particularly facilitated by this automatic centralizing and leveling of the caps with their respective jars, less care being required of the operator to place the caps squarely upon their respective jars.

I claim as my invention—

1. In a jar-sealing apparatus, a series of seats for the jar-caps, and a corresponding series of independent plungers acting on the bottoms of the jars located centrally with the seats and supported for movement longitudinally of the position of the jars, and adapted to automatically level the caps with the jars.

2. In a jar-sealing apparatus, a series of seats for the jar-caps, and a corresponding series of independent plungers located centrally with the seats and supported for movement longitudinally of the position of the jars, provided with means for centralizing the bottoms of the jars with the seats for the caps, and adapted to automatically level the caps with the jars.

3. In a jar-sealing apparatus, the combination of a series of seats for the jar-caps, a corresponding series of independent plungers provided with flanges for centralizing the bottoms of the jars with their respective caps, and adapted to automatically level the caps with the jars.

Signed by me at Hartford, Connecticut, this 4th day of August, 1899.

WILLIAM A. LORENZ.

Witnesses:

JOS. MERRITT,
W. H. HONISS.