Jan. 29, 1924. 1,482,049

N. E. SWANSON

CLOSURE CONSTRUCTION FOR PRESSURE COOKERS

Filed June 3, 1922 2 Sheets-Sheet 1

FIG. 1.

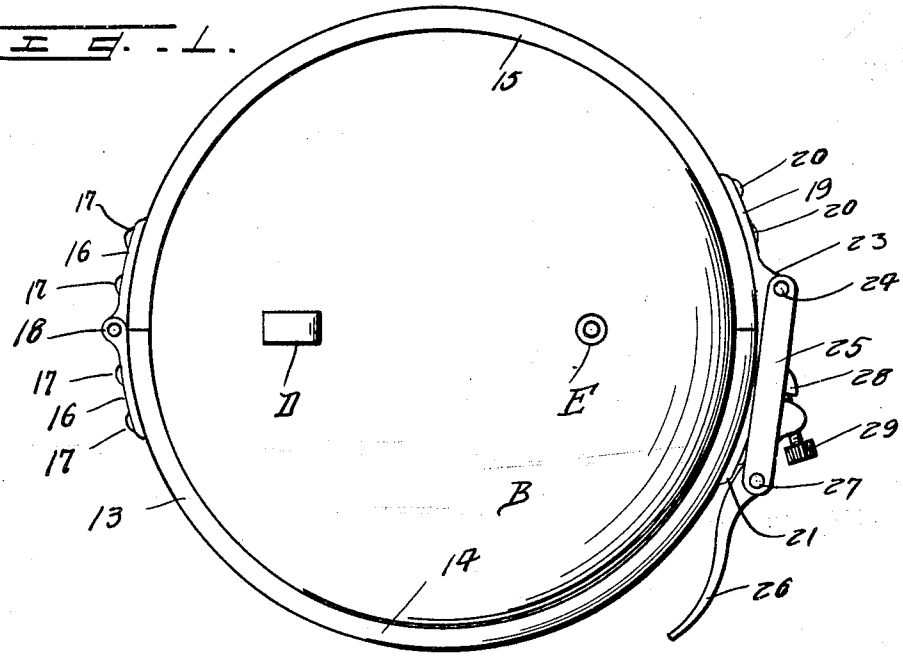


FIG. 2.

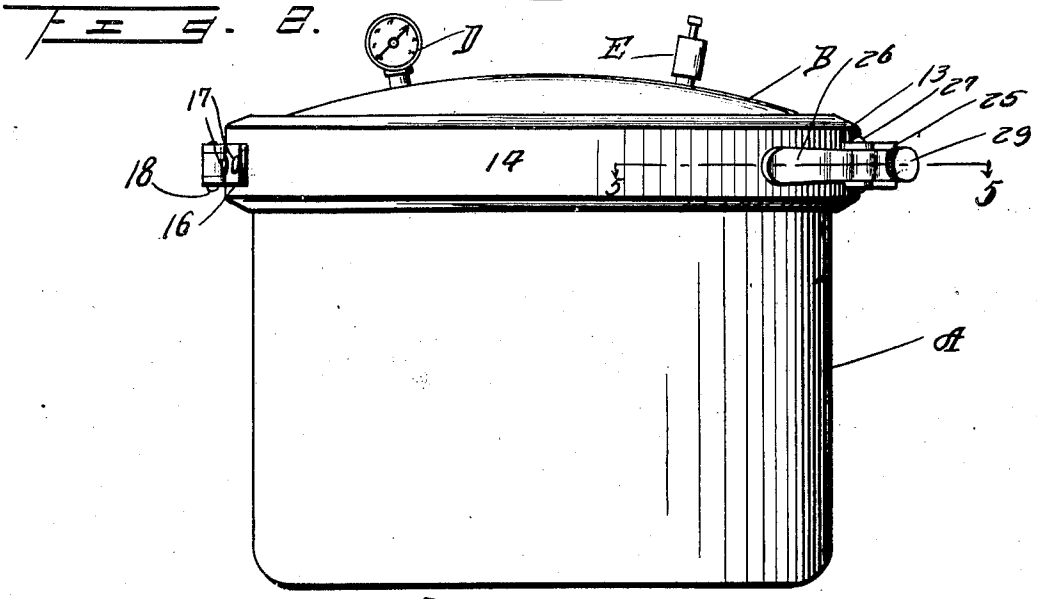
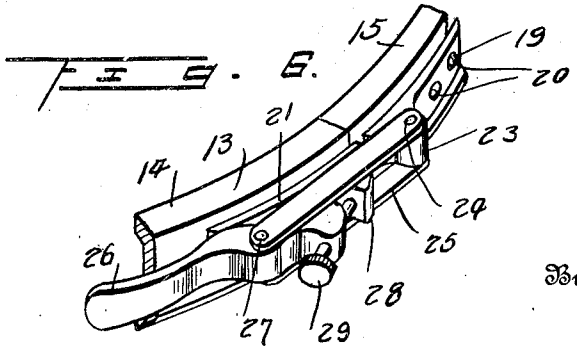


FIG. 6.



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FIG. 3.

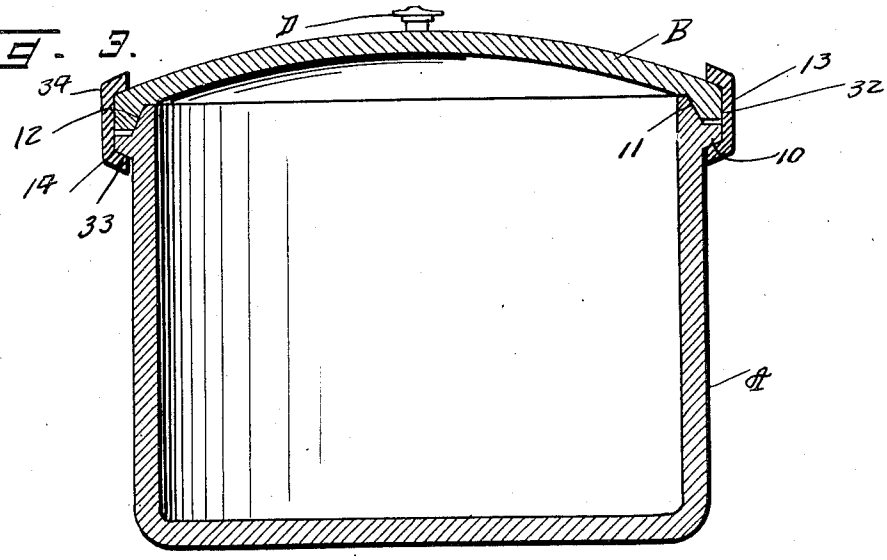


FIG. 4.

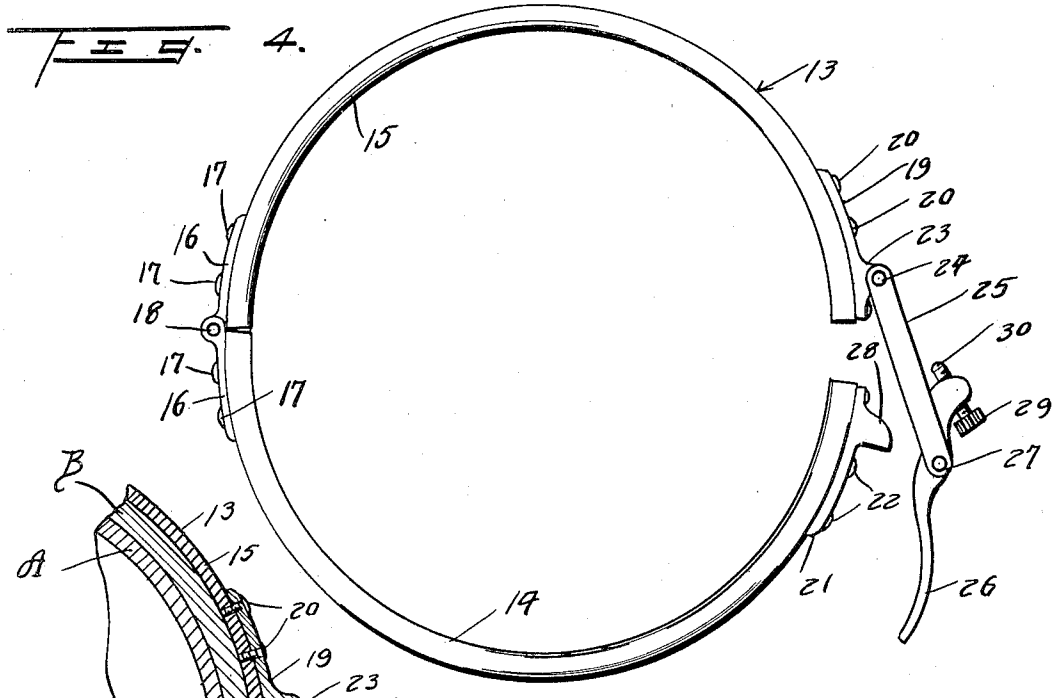
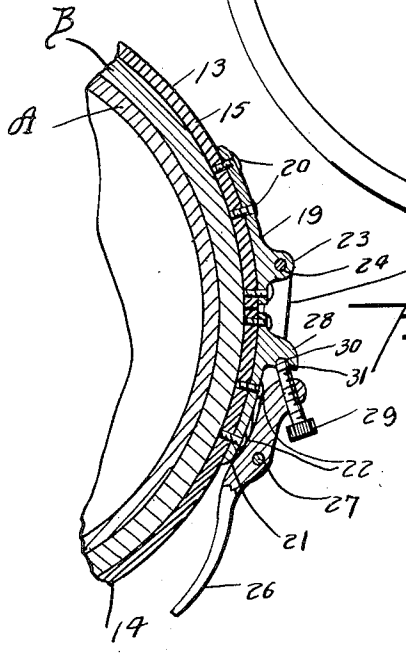


FIG. 5.



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Patented Jan. 29, 1924. 1,482,049

UNITED STATES PATENT OFFICE.

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CLOSURE CONSTRUCTION FOR PRESSURE COOKERS.

Application filed June 3, 1922. Serial No. 565,598.

To all whom it may concern:

Be it known that I, NELS E. SWANSON, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in a Closure Construction for Pressure Cookers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to a closure particularly applicable to pressure or steam cookers.

The invention aims to provide a simple and efficient construction of fastening means which avoids objectionable projections and imparts a neat appearance, and more specifically a construction utilizing interlocking elements as will be hereinafter explained in detail and employed preferably in combination with a novel operating means.

A second object is to provide a construction wherein the container and the closure have projections and a single ring is applicable thereto to perform the closing function.

Another object is to provide in connection with such a ring, a suitable draw mechanism which may be adjusted to the pressures desired and to take up wear.

A further object is to provide a construction in which the pressure within the cooker is utilized to increase the degree of hermetic engagement or sealing between the closure and the container of the cooker.

Additional objects and advantages will become apparent from a consideration from the description following taken in connection with accompanying drawings illustrating one practical embodiment.

In said drawings,

Figure 1 is a plan view of a steam cooker constructed in accordance with my invention;

Figure 2 is a side elevation;

Figure 3 is a vertical sectional view;

Figure 4 is a plan view of the fastening ring showing the same open;

Figure 5 is a horizontal sectional view on the line 5—5 of Figure 2 particularly passing through the locking means of the closure ring, and

Figure 6 is a detail perspective view of the closure ring, showing the sections separate or open.

Like reference characters designate like or similar parts in the different views.

The parts comprising the improved closure mechanism are applicable to receptacles generally although at this time particularly adapted for use in a steam or pressure cooker in view of which fact, I have shown the same in connection with such a cooker in the accompanying drawing by way of example. Said cooker consists of a container section or receptacle A and a cover or closure B for separable connection therewith. A steam or pressure gage may be mounted on the said cover B as at D and likewise a relief or excessive pressure escape valve may be secured as at E on the cover B.

A flange extends outwardly, encircling and preferably integral with the container A as at 10 and the container has its outer wall beveled or inclined as at 11 above the flange 10 in order to provide a seat. The closure B is provided with an inclined beveled wall or seat as at 12 to directly engage the seat 11 in order to form a hermetic or pressure-tight joint.

A lock ring or annulus 13 surrounds the upper end of the container A and closure B and is preferably made in two separable sections 14 and 15. These sections are hinged together as by means of leaves 16 screwed or otherwise fastened thereto as at 17 and pivotally joined by means of a pintle as at 18. A suitable means is provided whereby the sections 14 and 15 may be drawn relatively to each other and fastened in such drawn or tensioned relation. The sections 14 and 15 are preferably made of metal as will be understood and to one of them a plate 19 may be fastened as by means of screws 20 while a plate 21 may be fastened to the other through the medium of screws 22. The plate 19 has an enlargement at 23 in which a pintle 24 is journaled and which connects one or more toggle links or bars 25 to said plate 19.

A lock lever 26 is pivoted by a pin or pintle 27 to and intermediate a toggle link 25 for coaction in a cam-like manner with a stud 28 integral with and projecting from the plate 21. While one end of the lever

26 may directly engage the lug 28, yet I preferably thread a set screw or pin 29 through the lever to provide an adjustable means to vary the degree of the cam action and to take up wear. The active end of the pin 29 is preferably hemispherical at 30 and the lug 28 is provided with a cavity or recess 31 similar in shape to the extremity 30 so that upon the locking of the lever 26 a ball and socket action will occur between the end 30 and socket 31.

The annulus or ring 13 is generally U-shaped in cross section as shown so that it will have the channel at 32 in order to receive the flange 10 and the marginal edge of the closure or cover B. Attention is called to the fact that the lateral walls of the channel 32 and the adjacent wall of flange 10 and closure are inclined to provide seats as at 33 and 34, respectively. In this manner the closure and container will not only seal or move into engagement at the seats 11 and 12 through fastening of the annulus, but such action will be augmented or increased by the inclination of the walls at 33 and 34 as will be understood.

In order to attach the annulus 13, the same surrounds the flange 10 and marginal edge of the closure B whereupon the lever 26 is manipulated to dispose the pin 29 in the socket 31 and then moved toward the axis of the container past a line passing through the pintles 24 and 27 so that it will be locked in a cam-like manner. Wear occasioned through frequent use may be taken up or compensated for through appropriate adjustment of the pin 29. In detaching the annulus, the lever 26 at its free end is swung outwardly away from the closure to a position beyond a line passing through the pivots 24 and 27, thus releasing the engagement between the pin 29 and socket 31.

Particular attention is called to the fact that the expansion, incidental to heating of the cooker, occurs primarily in the container A. As a result, such expansion forces the seat of the container and closure into tight engagement with the seat of the annulus in order to provide a better hermetic and pressure-proof joint.

I also desire to emphasize the efficiency of the joint due to the fact that the annulus engages both the container and the closure in a cam-like manner and that the container and closure engage each other in a cam-like manner, thus forming a three point cam connection which is very efficient in use.

As merely one practical embodiment has been illustrated and described, it is to be understood that changes in the details may be resorted to provided they fall within the spirit and scope of the invention.

Having thus described the invention, what I claim is:—

1. In a receptacle in which a pressure occurs, a closure seated on said receptacle along a surface inclined downwardly and outwardly, the lower edge of the closure being out of contact with the receptacle, the closure having a cam surface on one side of the seat, the receptacle having a cam surface on the other side of the seat, a fastening element of channel formation surrounding and intimately engaging the outer surfaces of the receptacle and closure and having cam surfaces in engagement with said cam surfaces, and the fastening element being adjustable according to the pressure within the vessel and the degree of contact of the receptacle and closure at their seat.

2. In a receptacle, a closure, a fastening element to surround the receptacle and closure separable at a portion thereof, draw means for the element adjacent said portion, consisting of a toggle member pivoted to the element on one side of said portion, a lock lever pivoted to the toggle member, means on said fastening element on the other side of said portion engageable by said lever, consisting of a socket, and the lever having a pin to directly engage said socket.

3. In a receptacle, a closure, a fastening element to surround the receptacle and closure separable at a portion thereof, draw means for the element adjacent said portion consisting of a toggle member pivoted to the element on one side of said portion, a lock lever pivoted to the toggle member, means on said fastening elements on the other side of said portion engageable by said lever, consisting of a socket, the lever having a pin to directly engage said socket, and the engaging walls of said pin and socket being substantially spherical.

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

NELS E. SWANSON.

Witnesses:
ENOCH A. SWANSON,
ABRAM GRANT COX.