

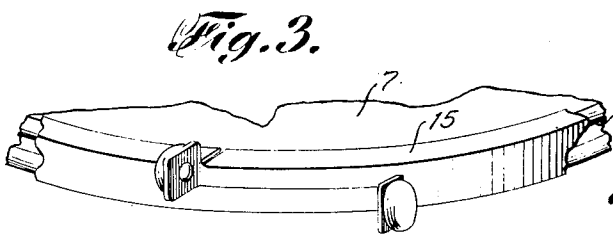
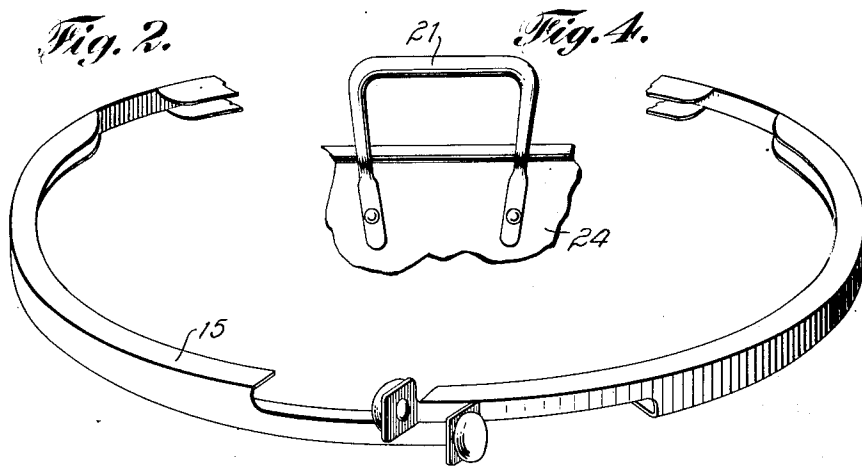
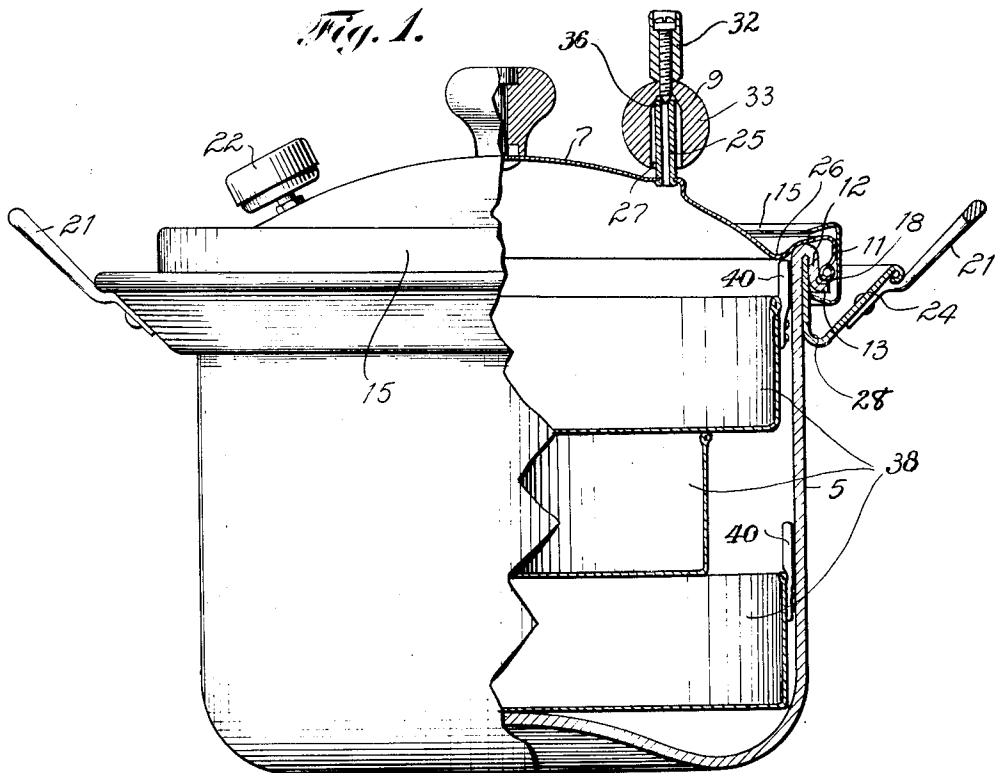
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PRESSURE COOKER

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# UNITED STATES PATENT OFFICE.

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## PRESSURE COOKER.

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This invention relates to containers and with regard to certain more specific features, to pressure cookers.

Among the several objects of the invention may be noted the provision of a simple construction for sealing the container against escape of steam or water; and the provision of an inexpensive retainer or clamp between the body and the cover of the container. Other objects will be in part obvious and in part pointed out hereinafter.

The invention accordingly comprises the features of construction, combinations of elements and arrangements of parts which are exemplified in the structure hereinafter described and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, in which is shown one of various possible embodiments of this invention,

Figure 1 is an elevation partly in section of a preferred form of container.

Fig. 2 is a perspective of a spring ring, showing the ring expanded.

Fig. 3 is a similar view, showing the ring contracted, that is, in normal position with respect to the container; and,

Fig. 4 is a detail elevation of a handle.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

Referring now more particularly to Fig. 1, there is illustrated a container having the side or body or main portion 5 of a suitable material, such as aluminum, and a lid or cover or closure 7 constructed preferably of steel. A valve 9 in the cover permits escape of fluid from the container whenever the pressure of said fluid exceeds a predetermined amount, or at any time at the will of the operator. The lid terminates in an annular flange 11 which at normal or room temperatures has a sliding fit upon the upper outer edge of the flange 12 on the body 5, but which at supernormal temperatures is pressed tightly against said body owing to the fact that the lid is of a material having a lower temperature coefficient of expansion than the body.

A shoulder 13 on the flange 12 limits the downward or inward movement of the lid. A spring ring 15 is normally fitted around flanges 11 and 12 and tends to prevent the

cover from being removed from the body of the container.

The valve 9 above mentioned comprises a tube 25 passing through and upwardly from the lid 7, and a weight 33 mounted on the tube. The weight tends to close the tube. The annular space 27 between tube and weight permits egress of fluid from the container when the pressure in the container forces the weight upwardly. The valve thus opens automatically to relieve the pressure within the container whenever such pressure exceeds a predetermined amount.

When the container is at temperatures above normal, the expansion of the body with respect to the lid causes the flange 11 of the lid to fit tightly against the outer surface of the body, to form therewith a pressure-tight joint. This makes it possible to dispense with the clamping devices commonly employed to insure a pressure-tight joint, and in view of the fact that at normal temperatures this joint between lid and body is simply a sliding fit, it is possible for the operator to put the lid on and off at normal temperatures with ease.

The device may be operated as follows: Into the body 5 are placed suitable materials or ingredients. The cover is then slipped onto the body until the flange 11 of the cover abuts against the shoulder 13 on the body. The spring ring 15 is then held in expanded position (Fig. 2) by the fingers and inserted in place. When the spring ring 15 is in place, the lid may be pulled outwardly far enough to bring the flange 11 against the ring but this is not absolutely necessary, because the pressure within the container as soon as cooking gets under way, may cause this movement automatically, and if it does not do so, the device will ordinarily seal itself anyway. The container is now ready to be heated. This heating ordinarily causes the pressure within the container to rise above atmospheric pressure. This heating automatically causes the joint between flange 11 and cover to be pressure-tight for the reasons above set out. The internal pressure within the container can be relieved at any time to any desired extent by grasping the wood knob 32 and lifting the weight 33. The point 36 that closes the opening in the upstanding tube is protected from extraneous dust and dirt. Excessive pressure is automatically relieved

by the lifting of said weight and the resulting opening of the valve 9. When the lid is to be removed, the internal pressure may be partly or entirely relieved by lifting the weight 33; the rim of the body may be cooled by running cold water in the trough 28 or in any other suitable way. The spring ring 15 may be compressed with the fingers and removed, after which the lid 7 may be easily pulled away from the body portion. If a partial vacuum is formed within the container at any time, due to cooling of the container, such vacuum may be relieved manually by lifting the weight.

By virtue of the construction herein shown, the contact between body and container is along a surface 18 so narrow as to be substantially only a line. This minimizing of the area of contact increases the pressure per square inch of contact for a given total pressure developed by the unequal expansion of body and cover, and ensures a tight seal even at temperatures not far above normal or room temperature.

A pressure gauge 22 of suitable construction indicates the pressure within the container.

The pans 38 (if more than one is used) are preferably oval or of other non-circular form, and alternate pans are in staggered relation in order to space the pans and permit passage of steam and vapors from one to the other. Handles 40 may be riveted on the pans.

The outstanding rim 24 protects the ring and adjacent parts from deformation by external blows; in addition to forming the trough 28 above mentioned.

Handles 21 are shown in Figs. 1 and 4.

The downwardly extending bead 26 on the cover is spaced inwardly from the junction of cover and body and causes the condensed steam on the cover to drop off at the bead instead of reaching the junction of cover and body.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As various possible embodiments might be made of the above invention and as various changes might be made in the embodiment above set forth, it is to be understood that all matter herein set forth or shown in the accompanying drawings is to be interpreted as illustrative and not in a limiting sense.

I claim:

1. A container combining a body and a closure, and means tending to retain the latter in position on the former, the body and closure having unequal thermal coefficients of expansion, the two parts being readily separable at normal or room temperatures, and the closure fitting snugly the mouth of the body and being adapted to form a sealing contact therewith by virtue of the unequal expansion coefficient of body and closure when the parts are at super-normal temperatures, a spring ring around the outside of the cover and the body and holding the cover against removal from the body; and an annular basin formed near said mouth adapted to receive water for cooling the body.

2. A container combining a body and a closure, and means tending to retain the latter in position on the former, the body and closure having unequal thermal coefficients of expansion, the two parts being readily separable at normal or room temperatures but said parts being so arranged as to form, by virtue of said unequal coefficients, a substantially line sealing contact with one another at super-normal temperatures; the cover having a downwardly extending bead spaced inwardly from the junction of body and cover and adapted to prevent condensed steam on the inner side of the cover from reaching the junction of body and cover.

3. A container combining a body and closure and elongated non-circular superposed pans arranged in staggered relation to space the pans and permit passage of steam and vapors from one pan to the other.

In testimony whereof, I have signed my name to this specification this 28th day of December, 1921.

ALFRED VISCHER, JR.