Aug. 28, 1945. J. E. SHARP 2,383,747

CLOSURE MEMBER

Filed Oct. 22, 1943

Fig. 1

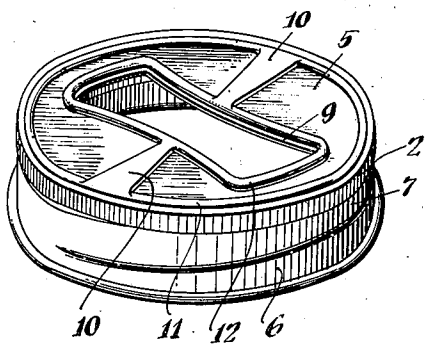


Fig. 2

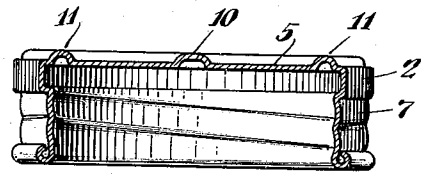


Fig. 3

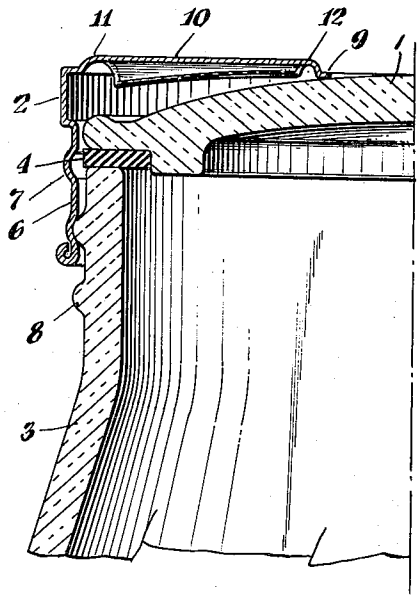
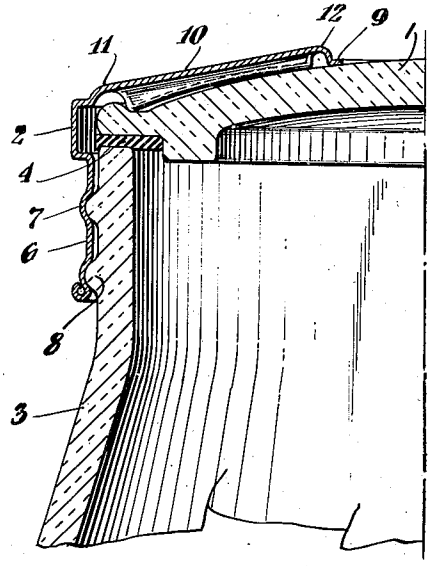


Fig. 4



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Patented Aug. 28, 1945 2,383,747

UNITED STATES PATENT OFFICE

2,383,747

CLOSURE MEMBER

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Application October 22, 1943, Serial No. 507,245

4 Claims. (Cl. 215—97)

This invention relates to two piece closures of the type which include a glass or metal cover adapted to seal the mouth of a container and an over-closure adapted to fit upon and partially enclose said cover and to cooperate with threads, lugs or similar means formed on the container to force said cover tightly on the container mouth and to hold it thereon in sealing position.

The general object of this invention is to provide an improved over-closure of this type which is of simple, light and rugged construction. Other objects and advantages of the invention will be mentioned in, or will be apparent from, the following description and the accompanying drawing.

In the drawing, in which is illustrated a closure member embodying the principles of this invention,

Fig. 1 is a perspective view of said over-closure member;

Fig. 2 is a sectional view taken through the closure member;

Fig. 3 is a vertical partial sectional view taken through the upper part of the container upon which the closure member of Fig. 1 is mounted in a position preliminary to final sealing; and

Fig. 4 is a vertical partial sectional view showing the same elements as shown in Fig. 3 with the closure member seated in final sealing position.

Referring to the drawing, in which like numerals designate like parts, the two piece closure comprises a cover 1, usually formed of glass, and the closure member 2 made of light gauge metal. The cover 1 is shaped to rest upon and seal the mouth of the container 3, as shown in Figs. 3 and 4, and cooperates with a sealing gasket 4 to effect a tight hermetic seal when forced downwardly upon the container mouth by the closure member 2. The closure member 2, which is examplary of closure members of the type to which this invention particularly relates, comprises a top disk-like portion 5 from which depends a flange 6 to form a circular skirt. Screw threads 7 formed in said skirt cooperate with threads 8 formed on the neck of the container and are examplary of the varied and usual means by which a closure can be fastened to and locked upon a container. Located in the top portion 5 of the closure member 2 is an opening 9 of approximately oblong form. This opening, which is desirably but not necessarily located centrally in the top portion, is of a usual type found in the art and is shaped to not only present a decorative appearance but also to leave substantial areas of the top portion 5 intact in order to allow said top portion to press firmly on the cover 1 during and after the sealing operation. However, experience has shown that such oblong-like openings offer a point of weakness in that the metal surrounding the opening tends to distort under the pressure of sealing with the result that after one or more uses the closure member 2 no longer efficiently performs its function and must be discarded. This condition is aggravated when one-piece closure members of this type are struck from very thin gauge metal, which latter is, of course, desirably used in order to reduce the cost of the closure member to the consumer.

In order to overcome this weakness and to allow the use of thin gauge metal as a material for such closure members, I provide in the top portion 5 of the closure the two ribs 10 positioned in the following manner. Each rib 10 is struck from the metal of the closure and rises at or near a point central to a long side of the oblong opening. From there it proceeds at approximately right angles to the longitudinal axis of the opening 9 to the edge or a point adjacent the edge of the top portion 5. In the preferred form the width of ribs 10 increases uniformly from the edge of the opening 9 to the edge of the top portion 5 to thus take the wedge-shaped form shown in the drawing. If desired, the top portion of the closure member 2 may likewise be provided with continuous ribs 11 and 12 which offer a further strengthening effect at the rim of the closure member and around the edge of the opening 9 formed therein, but such ribs are not necessary in the practice of this invention and are optional. By reason of the ribs 10 the top of the closure member 2 is greatly strengthened and failure of the closure member in use is considerably minimized. Such ribs may be readily struck into the top of the closure member at the time the member is formed. Their use allows the employment of light gauge metal in the construction of the closure and decreases the manufacturing cost of such closures.

In the home packaging of certain foods the present practice is to screw the over-closure downwardly to effect a tight hermetic seal and then to loosen it slightly to allow the pressure generated by the heat of cooking to escape. In such processing vacuum begins to form immediately when the jar of hot food is removed from the water in which it has been processed, and with use of the ordinary closure some vacuum may be lost before the closure can again be tightened to effect the desired seal. Using, however, an over-closure embodying the principles of my inven-

tion, the loosening of the closure to a position such as that shown in Fig. 3 will allow the pressure generated by the heat of cooking to escape. That portion of the rim of the opening 9 which is reinforced by rib 10 may be left in contact with the curved cover 1, even though the closure is slightly loosened, to create resilient pressure on the said cover and its gasket 4 which will not be sufficient to prevent the escape of pressure built up during the cooking process but which will be sufficient to hold the cover 1 and the gasket 4 tightly enough against the lip of the container 3 to prevent escape of vacuum in that period between the removing of the hot container from the water and the final retightening of the closure.

It will be apparent that various changes may be made in the form of the closure member herein illustrated and described without departure from the essential principles and advantages of this invention and within the scope of the appended claims such changes are contemplated.

I claim:

1. A one piece closure member adapted to secure and hold a cover upon a container, said member comprising a top portion and a flange portion depending therefrom to form a circular skirt, said top portion having formed therein an oblong-like opening each long side of which is strengthened by a rib struck in said top portion, each said rib extending in a direction approximately at right angles to the longitudinal axis of said opening from a point central to a long side of the opening to a point adjacent the edge of said top portion.

2. A one piece closure member adapted to secure and hold a cover upon a container, said member comprising a top portion and a flange portion depending therefrom to form a circular skirt, said top portion having centrally formed therein an oblong-like opening each long side of which is strengthened by a rib struck in said top portion, each said rib extending in a direction approximately at right angles to the longitudinal axis of said opening from a point central to a long side of the opening to a point adjacent the edge of said top portion.

3. A one piece closure member adapted to secure and hold a cover upon a container, said member comprising a top portion and a flange portion depending therefrom to form a circular skirt, said top portion having formed therein an oblong-like opening each long side of which is strengthened by a rib struck in said top portion, each said rib extending in a direction approximately at right angles to the longitudinal axis of said opening from a point central to a long side of the opening to a point adjacent the edge of said top portion, each rib increasing in width toward the edge of said top portion.

4. A one piece closure member adapted to secure and hold a cover upon a container, said member comprising a top portion and a flange portion depending therefrom to form a circular skirt, said top portion having centrally formed therein an oblong-like opening each long side of which is strengthened by a rib struck in said top portion, each said rib extending in a direction approximately at right angles to the longitudinal axis of said opening from a point central to a long side of the opening to a point adjacent the edge of said top portion, each rib being wedge-shaped with its greatest width disposed at the edge of said top portion.

JOHN E. SHARP.