Jan. 20, 1942. C. M. BELLG 2,270,714

LINER FOR CLOSURES

Filed Nov. 25, 1939

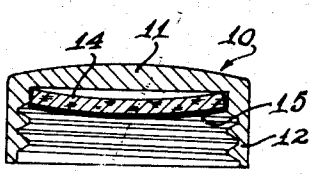


Fig. 1.

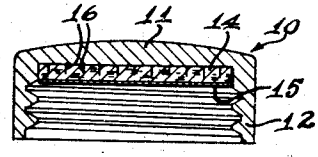


Fig. 2.

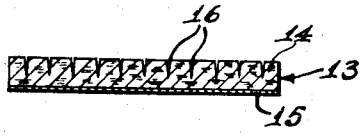


Fig. 4.

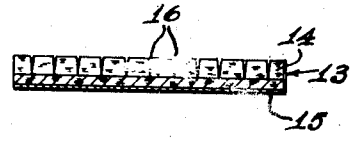


Fig. 6.

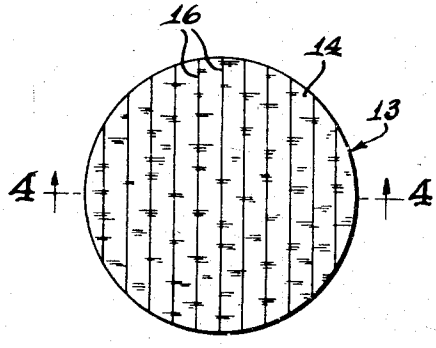


Fig. 3.

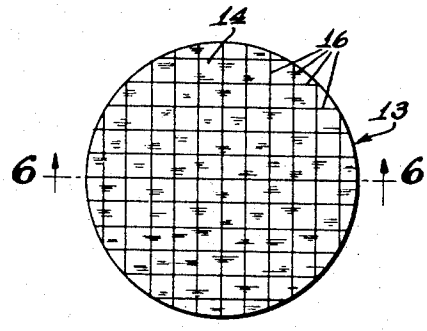


Fig. 5.

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LINER FOR CLOSURES

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Application November 25, 1939, Serial No. 306,105

1 Claim. (Cl. 215—40)

The present invention relates to improvements in liners for closures of the type employed in sealing bottles, jars and like containers, and has for an object, the provision of means for preventing warpage of the liners such as frequently occurs while they are in storage as an integral part of the closures and at other times.

Liners which are used commercially are formed of cork, cork composition and in some instances are produced from other compositions, which in sheet form, have a strong tendency to warp, this being due to the fact that such materials absorb and release moisture as atmospheric conditions vary, thereby causing alternate shrinkage and expansion of the material. This condition has been found to prevail with every type of cork or cork composition liner that has been available to date.

An object of the present invention is the provision of a liner or sealing disk which may be formed of cork, cork composition, etc., and retain the advantages incident to the use of such material without the disadvantages arising from warpage or curling of the material. To this end the invention consists simply in forming a number of slits in that surface of the liner which is bonded to the closure. This procedure has proved conclusively to be the solution of the warpage problem and invariably prevents warpage of the liners and separation thereof from the closures.

Other objects will be in part apparent and in part pointed out hereinafter.

In the drawing:

Fig. 1 is a vertical sectional view illustrating the manner in which the ordinary cork or cork composition liner frequently breaks away from the closure on account of shrinkage and warpage of the liner.

Fig. 2 is a sectional view of a liner and closure assembly, the liners being constructed in accordance with my invention.

Fig. 3 is a top plan view of a liner in which one face thereof is provided with a series of parallel slits.

Fig. 4 is a sectional view taken substantially along the line 4—4 of Fig. 3.

Fig. 5 is a plan view of a liner illustrating another method of slitting one face to prevent warpage.

Fig. 6 is a sectional view taken substantially along the line 6—6 of Fig. 5.

My improved liner or sealing disk is illustrated in conjunction with a molded bottle cap 10 or closure, including a circular top 11 and depending attaching flange 12. The preferred form of the liner 13 (Figs. 2, 3, and 4) consists of a disk-like sheet 14 of cork, cork composition or other suitable composition and a facing disk 15 which may be formed of tin-foil, oil paper or like material. In this form of the invention, the upper face of the liner which is bonded to the closure by means of an adhesive, is provided with a series of parallel slits 16 which may extend approximately half way through the cork disk, the slits opening at their ends through the periphery of said disk. These slits (Fig. 4) separate the inner face of the disk into parallel ribs and evidently provide means for compensating for expansion and construction of the liner as a whole.

In another form of the invention (Figs. 5 and 6) the cork disk 14 is provided with two sets of slits 16, one set crossing the other at right angles and thereby dividing the upper face of the liner into relatively small islands of generally rectangular configuration.

Modifications may be resorted to within the spirit and scope of the appended claim.

I claim:

In combination, a closure for bottles or jars, a liner for the closure comprising a disk-like sheet of composition material, one flat face of the liner being attached to the interior of the closure, the liner having said one flat face provided with a series of slits, the ends of which open through the periphery of the liner, said slits being of a depth equal to approximately one-half the thickness of the sheet and a facing sheet attached to the other flat face of said liner.

CHARLES M. BELLG.