July 13, 1943. J. HAYCOCK 2,324,387

CONTAINER AND END CLOSURE THEREFOR

Filed Sept. 20, 1940

Fig. 1.

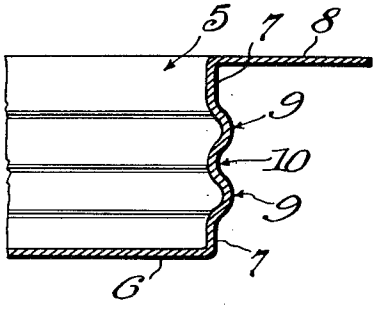


Fig. 2.

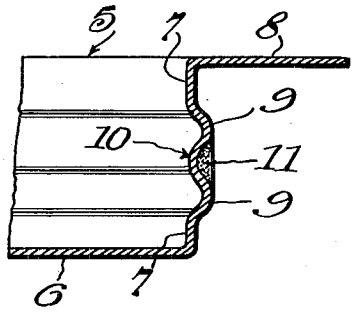


Fig. 3.

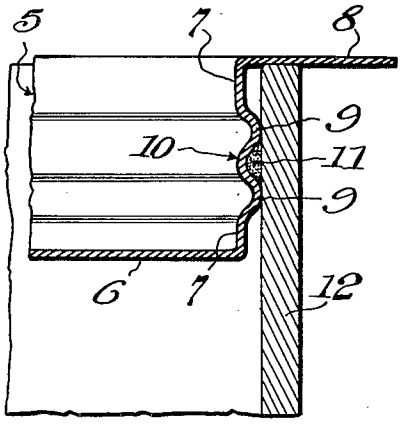


Fig. 4.

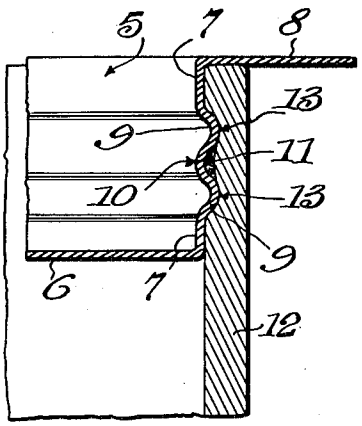
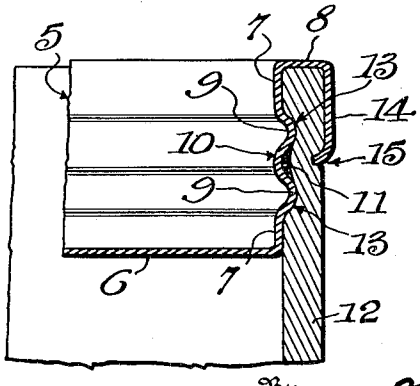


Fig. 5.



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Attorneys

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CONTAINER AND END CLOSURE THEREFOR

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Application September 20, 1940, Serial No. 357,634

5 Claims. (Cl. 229—5.5)

The invention relates generally to containers and seeks to provide a novel inexpensively manufactured container structure which can be utilized in the packaging of oil or other liquids and which is composed of a body of fiber or similar inexpensive and deformable material and metallic end closures formed and applied in a novel manner for assuring against leakage of packaged oil or other liquids between the attached ends and the body portions.

Containers composed of a fiber body and metallic end closures have heretofore been provided, but considerable difficulty has been encountered in providing a seal between the attached metallic end closure and fiber body portions which would assure against leakage of packaged liquids such as oil. It is the purpose of the present invention to provide an improved container structure of the nature stated in which the conditions complained of are eliminated.

In its more detailed nature the invention resides in the provision of a novel container structure embodying a body or side walls formed of fiber or similar deformable material, and metallic end closures each including a body portion, a deep heel portion inserted in the respective end of the body or side walls and having formed therein two vertically spaced outwardly directed annular ribs forming an annular groove between them and being embedded in said side walls, and a securing flange portion embracing the side walls and securing the indented relation of the ribs and side walls.

Another object of the invention is to provide a container of the character stated in which the groove intervening the annular ribs of an end closure is filled with a sealing compound which adheres to the closure heel and to the container body side wall so as to form an efficient liquid seal.

Another object of the invention is to provide a container of the character stated in which the lower terminus of the side wall embracing skirt is indented in the side wall at the position of the sealing compound filled groove and serves to press and hold the side wall into intimate liquid sealing contact with the annular ribs and the sealing compound therebetween.

Another object of the invention is to provide a novel metallic end closure of the type stated for use in sealing the ends of container bodies of fiber or equivalent deformable material.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more clearly understood by following the detailed description, the appended claims, and the several views illustrated in the accompanying drawing.

In the drawing—

Figure 1 is a fragmentary vertical cross sectional view of an end closure embodying the invention.

Figure 2 is a view similar to Figure 1, a sealing compound being shown applied to the annular groove in the heel wall of the end closure.

Figure 3 is a fragmentary vertical cross section illustrating the end closure of Figure 2 inserted in the end of a container body.

Figure 4 is a view similar to Figure 3, the annular ribs of the end closure being shown embedded in the deformable wall of the container body.

Figure 5 is a view similar to Figure 4 and illustrates the completely affixed condition of the end closure.

In Figure 1 of the drawing there is illustrated a fragment of one of the improved metallic end closures adapted to be applied to container bodies formed of fiber or other equivalent deformable or compressible material. The improved end closure is generally designated 5 and includes a centrally depressed main body portion 6 and an annular wall or deep heel portion 7 from the upper edge of which a securing flange 8 is extended in the horizontal direction. The heel wall portion 7 is provided with two longitudinally spaced annular ribs 9 which extend outwardly from said wall portion and provide an external groove 10 between them.

Before the end closure is applied to a container body, a sealing compound or adhesive 11 is applied to the groove 10 in the manner illustrated in Figure 2 of the drawing. After the sealing compound or adhesive 11 is applied to the groove, the heel wall portion 7 is inserted into the open end of a container body 12 in the manner illustrated in Figure 3 of the drawing. By now applying pressure in the lateral direction, the annular ribs 9 are caused to become embedded or indented in the compressible or deformable container wall 12, as at 13, in the manner illustrated in Figure 4 of the drawing, and after the ribs are thus embedded within the container side wall, the securing flange 8 is bent over and clamped against the external surface of the body in the form of a clamping skirt 14 in the manner illustrated in Figure 5 of the drawing. While the clamping of the skirt 14 may be effected by formation of a double seam in the securing flange 8 in the manner well known in this art, it is

preferred that the terminus of the skirt 14 be indented or embedded in the outer surface of the container body 12 in the manner indicated in Figure 5 and at a point directly opposite the sealing compound or adhesive 11 in the annular groove 10. By this means the indentation at 15 not only assists the embedded ribs 9 in securing the end closure on the container body, but the sealing contact of the compound 11 and the adhesion thereof to the heel portion 7 and the inner surface of the container body 12 is greatly facilitated and an end seal for the container is provided which will prevent leakage of liquids packaged in the container.

It is preferred that the sealing compound 11 be applied in liquid or tacky state to the annular groove 10 just before the end closure is to be affixed to the container body, but it is to be understood that a heat fusible adhesive, such as Pliofilm or any similar heat seal-forming material, can be applied to the end closure groove 10 at the time of manufacture thereof to be softened by application of heat at the time the end closure is actually applied to the container in the manner hereinbefore described.

It is also preferred that the sealing compound 11 be some material which will not be objectionably affected by the liquid to be packaged in the containers. For example, if oil is to be packaged in the containers, the sealing compound 11 should be some material not soluble in oil.

It is understood that the specific details of construction of the end closure and the particular steps performed in the application thereof to container bodies may be variously altered to accommodate various demands of use without departing from the scope of the present invention as defined in the appended claims.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:

1. A container having a tubular body of fiber or equivalent deformable material, and a metallic end closure, said end closure being formed to include an annular channel defined by heel wall and skirt portions between which the end of said body is tightly clamped, said heel wall having two longitudinally spaced annular ribs formed therein and indented in said body, and said skirt being indented in said body between said ribs, and a sealing compound confined between the heel wall and the body between said annular ribs.

2. A container having a tubular body of fiber or equivalent deformable material, and a metallic end closure, said end closure being formed to include an annular channel defined by heel wall and skirt portions between which the end of said body is tightly clamped, said heel wall having two longitudinally spaced annular ribs formed therein and indented in said body, and said skirt terminating at a point opposite the space intervening said annular ribs and being indented in said body at its terminus.

3. A container having a tubular body of fiber or equivalent deformable material, and a metallic end closure, said end closure being formed to include an annular channel defined by heel wall and skirt portions between which the end of said body is tightly clamped, said heel wall having two longitudinally spaced annular ribs formed therein and indented in said body, and said skirt terminating at a point opposite the space intervening said annuar ribs and being indented in said body at its terminus, and a sealing compound confined between the heel wall and the body between said annular ribs.

4. A container having a tubular body of fiber or equivalent deformable material, and a metallic end closure, said end closure being formed to include an annular channel defined by heel wall and skirt portions between which the end of said body is tightly clamped, said heel wall having two longitudinally spaced annular ribs formed therein and indented in said body, and said skirt being indented in said body between said ribs, and a sealing compound confined between the heel wall and the body between said annular ribs and not soluble in the liquid to be packaged in said container.

5. A container having a tubular body of fiber or equivalent deformable material, and a metallic end closure, said end closure being formed to include an annular channel defined by heel wall and skirt portions between which the end of said body is tightly clamped, said heel wall having two longitudinally spaced annular ribs formed therein and indented in said body, and said skirt being indented in said body between said ribs, and a heat fusible sealing compound confined between the heel wall and the body between said annular ribs.

JOHN HAYCOCK.