Nov. 21, 1944. F. J. O'BRIEN 2,363,352

CLOSURE FOR PAPER CONTAINERS

Filed Oct. 18, 1943

Fig. 1.

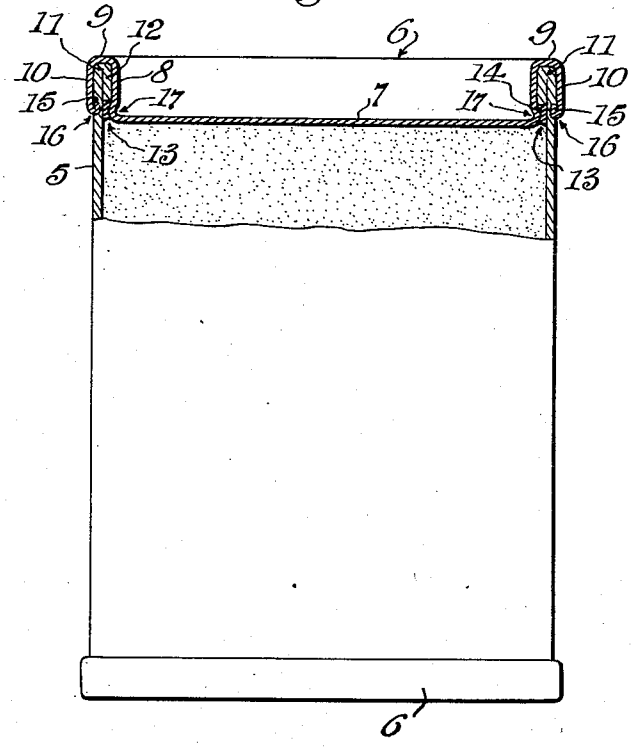


Fig. 4.

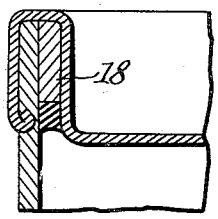


Fig. 5.

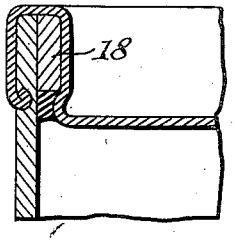


Fig. 2.

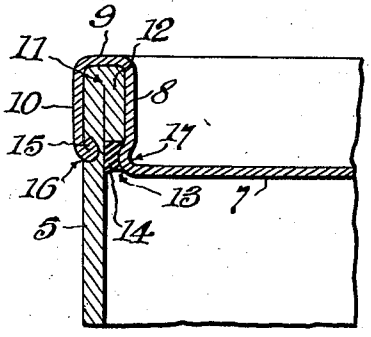
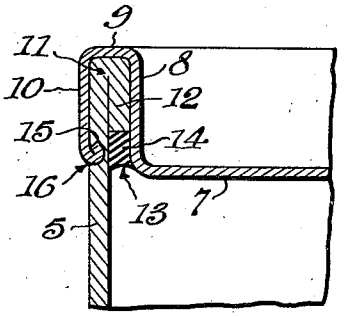


Fig. 3.



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CLOSURE FOR PAPER CONTAINERS

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Application October 18, 1943, Serial No. 506,741

6 Claims. (Cl. 229—5.5)

The invention relates generally to containers formed wholly of paper, or comprising a body of paper and metallic end closures, and it primarily seeks to provide a novel closure which is simple in structure and facilitates manufacture of the containers at minimum expense, and yet is quite efficient and assures the provision of a liquid tight seal.

In its more detailed nature, the invention seeks to provide in a container of the character stated a closure having a heel and a surrounding skirt portion cooperating with the heel in providing a container body end receiving channel, means for spacing the lower portion of the heel inwardly from the adjacent body portion to provide a sealing compound receiving groove, and sealing compound in said groove.

An object of the invention is to provide a container structure of the character stated in which the end of the container body is folded inwardly or bent over inwardly upon itself so as to form a spacer ring less than the depth of the heel and resulting in the provision of the sealing compound receiving groove between the main body of the container and the lower portion of said heel.

Another object of the invention is to provide a container structure of the character stated in which the spacer ring which provides the sealing compound receiving groove forming spacing between the body of the container and the lower portion of the heel is a separate ring piece adhered to the internal surface of the body at the end thereof.

Another object of the invention is to provide a container structure of the character stated in which the end closure heel is flared to provide a lock shoulder extending under the spacer ring and against the sealing compound in the sealing compound receiving groove.

Another object of the invention is to provide a container structure of the character stated in which the flared lock shoulder on the closure heel lies opposite the end extremity of the skirt portion and said end extremity is idented in the container body stock.

With the above and other objects in view that will hereinafter appear, the nature of the invention will be more fully 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 side elevation and part sectional view illustrating a container structure embodying the invention.

Figure 2 is an enlarged fragmentary cross sectional view illustrating a portion of one end closure as illustrated in Figure 1.

Figure 3 is a view similar to Figure 2 and illustrates the end closure minus the step of outwardly flaring the end closure to form a locking shoulder.

Figure 4 is a view similar to Figure 3 illustrating a slightly modified form of the invention.

Figure 5 is a view similar to Figure 4 and illustrates the end closure as flared to provide a locking shoulder.

In the example of embodiment of the invention herein disclosed the body of the container generally designated 5 is formed of paper in any approved manner. The end closures generally designated 6 preferably are formed of metal, but it is to be understood that they can be formed of paper so as to provide an all paper container.

Each end closure includes a depressed central body portion 7 merging into a cylindriform heel 8 which in turn merges into a horizontal, outwardly extended body or flange portion 9. In completing the container closure the flange is bent downwardly to provide a closure skirt 10 which is bent inwardly upon itself to form a hem edge 11 and which cooperates with the heel 8 in providing an annular channel for embracing the end of the container body.

The end extremity of the container body is bent or folded inwardly upon itself as at 11 to form a separator ring 12 which contacts the heel 8 and is of less depth than said heel so as to space the heel from the main body 5 and provide a sealing compound receiving groove 13. A suitable sealing compound 14 is deposited in the groove 13, and when the body end 5, 12 is tightly embraced in the annular end closure channel in the manner illustrated in Figures 2 and 3, a very efficient sealing of the end of the container is effected.

During the setting of the seal by tight embracement of the container body 5, 12 in the end closure channel the lower extremity or hem portion 15 of the skirt may be indented in the body stock as indicated at 16. While the end closure can be completed in the manner illustrated in Figure 3, if desired, it is preferred that the lower portion of the heel 8 extending below the spacer ring portion 12 be flared outwardly as illustrated in Figure 2 so as to provide a lock shoulder 17 extending under the spacer ring 12 and against the sealing compound 14 in the receiving groove

13. It is also preferred that the heel 8 and the skirt 10 be formed of substantially the same depth so that the skirt will be indented in the body wall as at 16 directly opposite the outwardly extended lock shoulder 17 and thus provide for a more efficient sealing of the container.

In Figures 4 and 5 of the drawing there is illustrated a slightly modified form of the invention in which there is included a separate spacer ring 18 which may be adhesively attached to the inner surface of the body at the end thereof instead of folding the body stock inwardly upon itself in the manner illustrated in Figures 1 to 3.

It is of course to be understood that the details of structure and the arrangement of parts may be variously changed and modified without departing from the spirit and scope of the invention.

I claim:

1. In a container, a body, an end closure, said closure having a heel and a surrounding skirt cooperating with said heel in providing a channel in which the end of said body is embraced, spacer means filling a portion only of the channel and spacing the lower portion of the heel from the adjacent body portion to form a sealing compound receiving groove, and sealing compound substantially filling said groove and directly engaging in sealing contact with the heel and the body wall portion directly opposite said heel at the position of the groove.

2. In a container, a body, an end closure, said closure having a heel and a surrounding skirt cooperating with said heel in providing a channel in which the end of said body is embraced, said body end being turned inwardly upon itself to form a spacer ring less in depth than the depth of the heel so as to space the lower portion of the heel from the adjacent body portion to form a sealing compound receiving groove, and sealing compound in said groove.

3. In a container, a body, an end closure, said closure having a heel and a surrounding skirt cooperating with said heel in providing a channel in which the end of said body is embraced, a spacer ring attached to and projecting inwardly from the end portion of the body and less in depth than the depth of the heel so as to space the lower portion of the heel from the adjacent body portion to form a sealing compound receiving groove, and sealing compound in said groove.

4. In a container, a body, an end closure, said closure having a heel and a surrounding skirt cooperating with said heel in providing a channel in which the end of said body is embraced, means spacing the lower portion of the heel from the adjacent body portion to form a sealing compound receiving groove, and sealing compound in said groove, said heel being flared to provide a lock shoulder extending under said spacing means and against the sealing compound in said groove.

5. In a container, a body, an end closure, said closure having a heel and a surrounding skirt cooperating with said heel in providing a channel in which the end of said body is embraced, a spacer ring attached to and projecting inwardly from the end portion of the body and less in depth than the depth of the heel so as to space the lower portion of the heel from the adjacent body portion to form a sealing compound receiving groove, and sealing compound in said groove, said heel being flared to provide a lock shoulder extending under said ring and against the sealing compound in said groove.

6. In a container, a body, an end closure, said closure having a heel and a surrounding skirt cooperating with said heel in providing a channel in which the end of said body is embraced, a spacer ring attached to and projecting inwardly from the end portion of the body and less in depth than the depth of the heel so as to space the lower portion of the heel from the adjacent body portion to form a sealing compound receiving groove, and sealing compound in said groove, said heel being flared to provide a lock shoulder extending under said ring and against the sealing compound in said groove, said heel and skirt being dimensioned so that the flared lock shoulder lies opposite the end extremity of the skirt, and said end extremity being indented in the container body stock.

FRANK J. O'BRIEN.