Sept. 3, 1946. F. J. O'BRIEN 2,406,894

CLOSURE FOR PAPER CONTAINERS

Filed Feb. 28, 1944

FIG. 1.

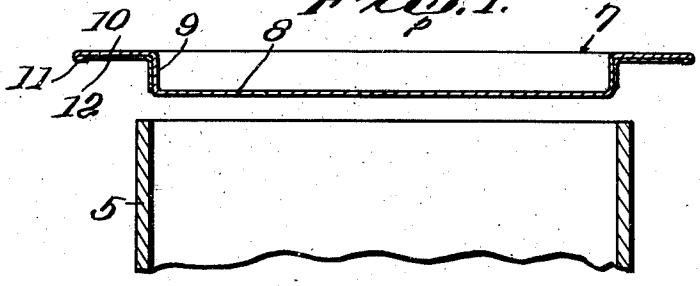


FIG. 2.

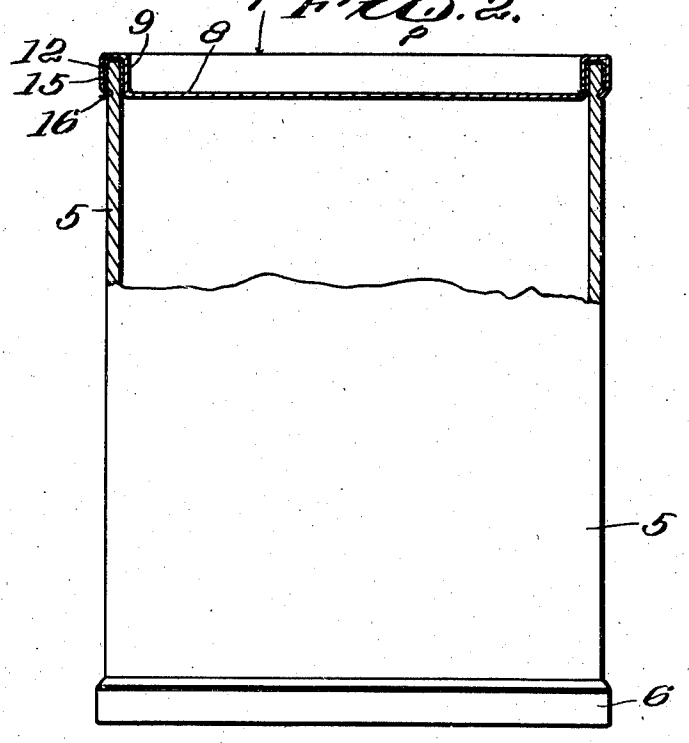
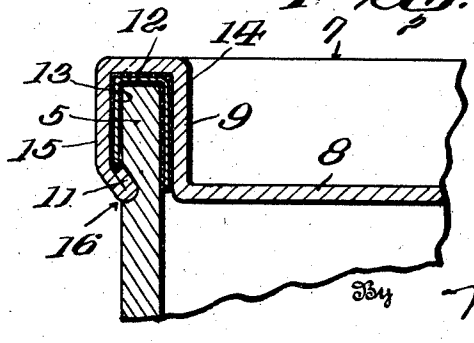


FIG. 3.



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Patented Sept. 3, 1946

2,406,894

UNITED STATES PATENT OFFICE

2,406,894

CLOSURE FOR PAPER CONTAINERS

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Application February 28, 1944, Serial No. 524,252

4 Claims. (Cl. 229—5.5)

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The invention relates generally to container structures, and more particularly to containers formed of paper and having metal end closures, and it primarily seeks to provide a simple and novel form of end closure which may be atttached to the container body without previously preparing said body with any sealing material or attaching adhesive, and which, when attached, will provide an efficient seal.

In the conventional practice of attaching end closures to container bodies, liquid adhesive material is applied to end wall portions of the container bodies, or to wall portions in the end closure channels designed to embrace the container body ends, thereby to secure the attachment of the end closures and effectively seal the containers. Sometimes thermoplastic adhesive and sealing materials are so applied, and in these cases heat is applied incidental to the attachment of the end closures, either to render the adhesive or sealing material tacky or to reflow it into sealing contact after the sealing closure is effected. It is a purpose of the invention to provide an efficient seal without necessary handling of any liquid adhesive or sealing material, and without the necessity of applying heat.

In its more detailed nature, the invention resides in providing an end closure for paper containers, including a heel portion dimensioned to snugly telescope within the end of a container body to be closed thereby, an outwardly extended flange adapted to be turned down about the external end portion of said container to form with the heel portion a channel in which the end portion of the container body is securely clamped, and a ring or band of adhesive carrier secured to said heel portion and said flange, or in other words in said channel. Upon application of the improved end closure on a container body end, the adhesive borne by the surfaces of said carrier and opposing the container body end wall portions clamped in the closure channel will securely adhere the end closure to the container body, and an efficient sealing of the container will be effected.

Another object of the invention is to provide an end closure of the character stated in which the outer extremity of the flange is shaped so as to project slightly beyond the adhesive carrier prior to application of the end closure so as to partially shield the tacky adhesive from direct contact, and also to indent the outer wall of the container when the flange is turned down to clamp the container end portion in the closure channel.

With the above and other objects in view that

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will hereinafter appear, the nature of the invention will be more clearly understood by reference to the following detailed description, the appended claims, and the several views illustrated in the accompanying drawing.

In the drawing:

Figure 1 is a vertical cross section illustrating one form of end closure embodying the invention.

Figure 2 is a side elevation and part vertical cross section illustrating a container with the improved end closure applied thereon.

Figure 3 is an enlarged fragmentary sectional view illustrating one side of an applied end closure.

In the example of embodiment of the invention herein disclosed the container illustrated includes a cylindriform shell or body 5 which may be formed of paper in the conventional manner, either by convolutely or spirally winding a web of paper stock, a metal bottom end closure 6, and a metal top end closure 7.

The improved end closure structure shown in Figure 1, before application to a container body, includes a centrally depressed main body portion 8 which merges into a cylindriform heel portion 9 dimensioned to snugly telescope within an end of the container body 5, and an outwardly directed flange 10. The flange 10 preferably terminates in a hem 11 or overturned edge 11.

An adhesive carrier in the form of a ring or tape 12 is adhered to the outer surface of the heel 9 and to the under surface of the flange 10 by a suitable adhesive 13. The exposed face of the adhesive carrier 12 carries a constantly tacky adhesive 14.

When the end closure is applied in the manner illustrated in Figures 2 and 3, the flange 10 is turned down over the outer face of the container body end portion in the form of a skirt 15 opposing the heel 9 in generally parallel relation and cooperating therewith in forming an annular channel in which the end portion of the container body 5 is securely clamped. Before the turning down of the flange 10, the edge hem or curl 11 extends beyond the thin adhesive carrier 12 and cooperates with the heel projection 9 in shielding the constantly tacky adhesive coating 14 against direct contact by other end closures or foreign bodies which might accidentally engage and tend to adhere thereto. Incidental to the turning down of the skirt 15 and the secure clamping of the container body end in the channel thus formed, the edge hem or curl 11 is indented in said body as at 16 and adds to the se-

cure attachment of the end closure. The embracement of the end of the container body by the adhesive carrier and the adhesion of the constantly tacky coating 14 provides a very efficient seal.

The term "adhesive carrier" herein used has reference to a composite of a strong flexible carrier member in the form of a ring, ribbon or tape having on its exposed surface a permanently tacky material preferably insoluble in water and readily and tenaciously adherent upon mere pressure contact; said composite or assembly preferably being impermeable to water, oil and weak acid and alkaline solutions. Any pressure contact adhesive having the desired sealing quality may be employed. Such an adhesive carrier can be prepared from a sheet or strip of paper, fabric or regenerated cellulose which is provided with an adherent coating of a permanently tacky material such as plasticized tacky vinyl or other tacky synthetic or natural resins or waxes such as plasticized colophony, carnauba, or gutta percha, with a plasticizer of resin oil or deodorized resin acids (purified tall oil resin acids) or other tacky-producing substances. For example, the commercially available Cellophane adhesive carrier commonly known to the trade as "Scotch tape" may be used. The adhesive may be the same as both faces of the carrier, or a different form of adhesive may be employed in effecting the adhesion between the adhesive carrier 12 and the heel 9 and flange 10 of the end closure.

It will be obvious that when the improved end closure is applied to the container body in the manner herein described, an efficient seal will be effected without the necessity of applying heat.

It is to be understood that the specific form of the end closure, and also the specific adhesive carrier and adhesive material can be variously modified without departing from the spirit and scope of the invention as defined in the appended claims.

I claim:

1. As an article of manufacture, a container end colsure having a central body portion and a heel insertible in the end of a container body and a peripheral portion adapted to embrace a container body end and press it against said heel to effect a closure thereof, and an adhesive carrier attached to said peripheral portion and heel and having a constantly tacky adhesive on the exposed face thereof and disposed to adhere to the container body internally and externally and over its end extremity when embraced by said peripheral portion to provide a seal.

2. As an article of manufacture, a container end closure having a central body portion and a heel insertible in the end of a container body and peripheral portion adapted to embrace a container body end and press it against said heel to effect a closure thereof, and an adhesive carrier formed of a regenerated cellulose and attached to said peripheral portion and heel and having a constantly tacky adhesive on the exposed face thereof and disposed to adhere to the container body internally and externally and over its end extremity when embraced by said peripheral portion to provide a seal.

3. As an article of manufacture, a container end closure having a central body portion and a heel dimensioned to telescope within a container body to be closed, said heel merging into an outwardly turned flange adapted during the attachment of the closure to a container body to be turned down into generally parallel relation to the heel to form a container body end embracing channel, and an adhesive carrier ring of regenerated cellulose attached to said heel and said flange and having on its exposed surface a constantly tacky adhesive disposed to contact the body end internally and to fold over the end thereof and embrace the container body end externally when the flange is turned down so as to be effective upon mere application of pressure incident to the pressing together of the heel and flange with a container body end between them to adhesively secure and seal the end closure on said body end.

4. As an article of manufacture, a container end closure having a central body portion and a heel dimensioned to telescope within a container body to be closed, said heel merging into an outwardly turned flange adapted during the attachment of the closure to a container body to be turned down into generally parallel relation to the heel to form a container body end embracing channel, and an adhesive carrier ring of regenerated cellulose attached to said heel and said flange and having on its exposed surface a constantly tacky adhesive disposed to contact the body end internally and to fold over the end thereof and embrace the container body end externally when the flange is turned down so as to be effective upon mere application of pressure incident to the pressing together of the heel and flange with a container body end between them to adhesively secure and seal the end closure on said body end, said flange having a downwardly and inwardly turned edge extremity projecting beyond the adhesive carrier and protecting the adhesive thereon aaginst accidental contact.

FRANK J. O'BRIEN.