Aug. 9, 1949. R. A. EASTMAN ET AL 2,478,470

SEALING STRIP AND GUIDE FOR SLIDABLE CLOSURES

Filed June 25, 1946

Fig. 1.

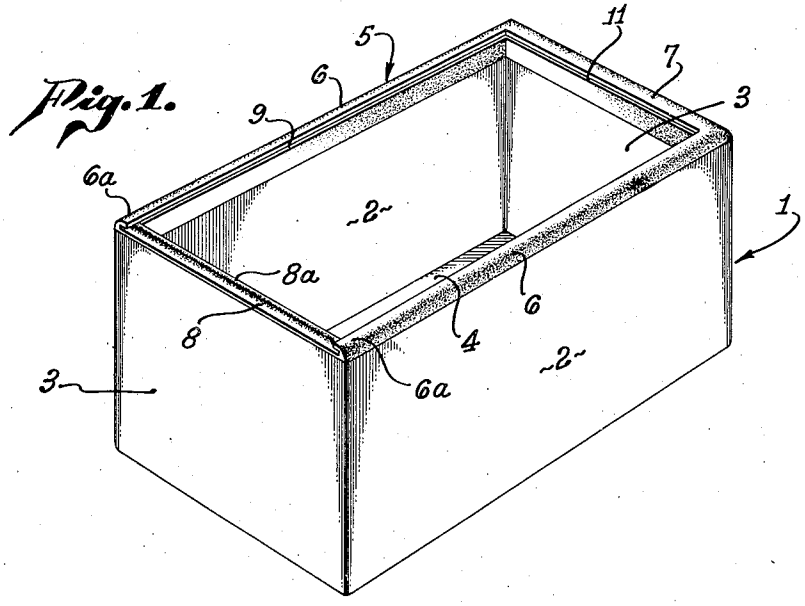


Fig. 2.

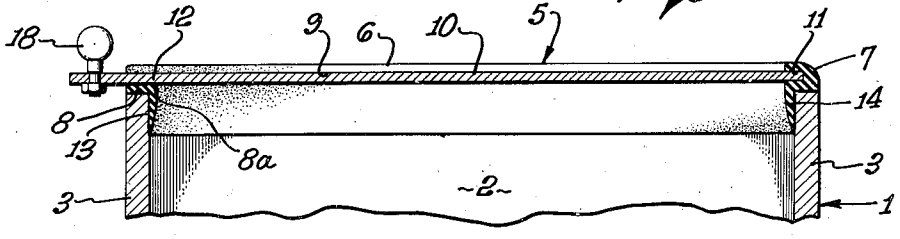


Fig. 3.

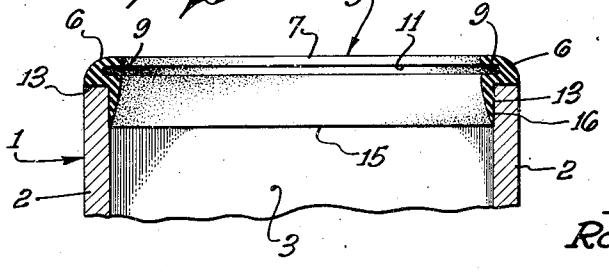
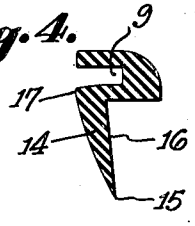


Fig. 4.



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SEALING STRIP AND GUIDE FOR SLIDABLE CLOSURES

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2 Claims. (Cl. 220—41)

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This invention relates to containers, and particularly to containers for household use.

It is a fact that many household commodities such as flour, sugar, or other commodities, are contaminated and rendered useless by the intrusion of insects such as ants, into the container in which they are held. This amounts to a considerable loss to householders annually.

One of the objects of this invention is to provide means for effecting the sealing of the cover of such a container, so as to render the same insect-proof.

Another object of the invention is to provide simple means for enabling an ordinary container body of box-form, to be transformed into an insect-proof container.

In the practice of the invention, we prefer to provide a lid guide which we attach to the upper edge of the walls at the box opening, and in the preferred embodiment of this invention, this rectangular lid guide includes side bars and a transverse end bar at one end; and these three bars are provided with grooves on their inner edges, to engage and seal the edge of the lid which is slid into the guide from its outer end. One of the objects of this invention is to provide an improved construction for the outer end bar of the guide, which will insure the effecting of a tight seal for the lid, but without developing any tendency to detract from perfection of the seal at the side edges of the lid in the vicinity of this outer transverse bar which, of course, is located at the point where the lid enters the guide.

A further object of the invention is to give the side and the end portions of the lid guide a cross-section which facilitates effecting the attachment to the walls of the container, and which, at the same time, will provide means for resisting tendencies of the lid to unduly distort the proper cross-section of the sides of the lid guide.

Further objects of the invention will appear hereinafter.

The invention consists in the novel parts and combinations of parts to be described hereinafter, all of which contribute to produce an efficient insect-proof container.

A preferred embodiment of the invention is described in the following specification, while the broad scope of the invention is pointed out in the appended claims.

In the drawings:

Fig. 1 is a perspective of a container of common box-form, and illustrating our lid guide applied to the same, but without the lid being in place.

Fig. 2 is a longitudinal, vertical section taken through the upper portion of the container illustrated in Fig. 1, and showing the lid in place. The lid is shown in section.

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Fig. 3 is a vertical cross-section through a container of the type illustrated in Fig. 1, but of slightly narrower width, the lower portion of this view being broken away.

Fig. 4 is a vertical section upon an enlarged scale, illustrating in detail the preferred form of the cross-section for the side bars of the body that cooperates with the lid of the container to effect the insect-tight seal.

Referring more particularly to the parts, it should be understood that this improvement can be applied to a container having any form, but in the present instance, the invention is illustrated as applied to a common box-form container having a body 1, presenting vertical side walls 2 and vertical end walls 3 which extend up in the usual manner from its bottom 4. This body 1 may be composed of any material having sufficient rigidity to enable it to operate as a proper container for commodities such as mentioned above. Many such containers are constructed of wood, metal, plastic, or other material.

In applying our invention to a container having a body such as illustrated, we provide a lid guide 5 of rectangular form and of the same size as the box in horizontal cross-section. This lid guide is formed of a yielding or cushion-like material such as rubber, or similar material. The material, however, out of which it is formed, should be sufficiently hard to maintain its form, at least as regards its shape in cross-section.

This lid guide comprises two side bars 6 and an inner end bar 7, and these bars are formed in one piece, and are also integrally connected by an outer end bar 8. The side bars 6 are formed on their inner edges with longitudinally disposed grooves 9 which operate to receive the side edges of a lid 10, which lid is slid into the guide from its left end, as viewed in Fig. 2. The inner bar 7 has a similar groove 11 which receives the inner edge of the lid 10 when it is shoved home.

The outer end bar 8 is preferably located entirely below the level of the grooves 9 and 11, so that it engages only the under side of the lid 10. At this point we dispense with any attempt to form a seal on the upper side of the lid, because we wish to avoid the use of any material forming part of the guide, that would rest on the upper part of the lid. This is for the reason that if such a cross-bar, or section of a cross-bar rested upon the upper side of the lid as the lid is being forced into position, there would be a tendency for the lid to pull this bar forward with the lid, and this would exert a tension on the forward ends 6a of the side bars, having the effect of tightening the same on the side edges of the lid which would, of course, interfere with the free inward movement of the lid. We avoid this difficulty by providing a cross-section for the outer end bar 8, that will insure the effect of a tight

seal on the under side of the lid, and for this purpose we form the upper side of the bar 8 with a bead 8a that extends completely along the same, and which tapers off at its ends where it extends into the side groove 9. When the lid is put in place, this bead exerts an upward pressure and forms an effective seal on its contact line or zone 12, where it engages the under side of the lid. The grooves 9 and 11, of course, are formed so that they are sufficiently small in cross-section, to insure that they will fit closely to the edges of the lid and form effective seals on their contact lines, or contact zones, therewith. This lid guide may be secured to the upper edge of the container by any suitable means, but we prefer to secure it by means of a film 13 of adhesive, cement, or other suitable material.

In order to reinforce the lid guide, we prefer to provide the inner edges of the bars that form its perimeter, with downwardly projecting flanges 14, which flanges may taper on their inner sides to an edge 15, if desired. When securing the lid guide in place by means of the adhesive film 13, we prefer to apply this film so that it unites the peripheral faces 16 of these flanges 14, to the inner faces of the walls of the container. These flanges 14 operate as an effective anchorage for the side bars, and evidently give considerable resistance to any expanding force exerted by the lid when it is pushed into place. Furthermore, by tapering these flanges to their edges 15, we avoid forming any obstruction or shoulder to interfere with the free removal of parts of the commodity from the interior of the container.

In Fig. 4 we illustrate the preferred cross-section for the bars of this lid guide. This improvement consists in molding the material so that these flanges 14 incline outwardly somewhat, as indicated. By reason of this inclination, when the inner faces of the flanges are applied to the inner faces of the container walls, they tend naturally to hug tightly to the face of the wall. Furthermore, by reason of their being displaced inwardly when the guide is applied to the box wall, there is a tendency for them to move upwardly the material at the point 17. This, of course, tends to bring pressure at about the point 17 in contact lines all around the perimeter of the lid upwardly against its under side.

The lid 10 can be provided with a handle of any suitable construction, such as a cleat, or a ball handle 18, such as illustrated, for sliding the lid in or out.

While we have illustrated this lid and lid guide as applied to the entire upper opening of an open box, it is obvious that if desired in some types of containers, it may be made of smaller area than the horizontal cross-section of the container, so that it would operate merely to open a small outlet from the box.

Although the container illustrated is of rectangular form, it should be understood that wherever the word "rectangular" is used in this specification, or claims, it is intended to apply equally to a container which is of square form in plan.

Many other embodiments of the invention may be resorted to without departing from the spirit of the invention.

We claim as our invention:

1. In a combined sealing strip and guide for attaching a sliding closure to the open end of a four wall container, said strip having a continuous flat shoulder for engaging the upper edge of the container walls, with a depending flange for sealing engagement with the inner upper marginal edge of the container walls, said strip also having an inwardly facing slot extending along three side faces of the same and located in a plane above and partially overlying said flat shoulder, the strip, intermediate the slotted portion being reduced in height to a plane immediately above the lower face of the slot to snugly engage the bottom face of the said sliding closure inserted in said slot.

2. In a combined sealing strip and guide for attaching a sliding closure to the open end of a four-wall container, said strip having a continuous flat shoulder for engaging the upper edge of the container walls, and having a depending flange extending down into the interior of the container at all four sides of the same, said strip also having an inwardly facing slot extending along three sides of the same and located in a plane above and partially overlying said flat shoulder, said strip including a transverse end bar to overlie the upper edge of the wall of the container at the side where the sliding closure is introduced, the upper face of said transverse end bar being located in a plane immediately above the lower face of the slot to press firmly against the bottom face of the said sliding closure when inserted in the slot; the said depending flange having a peripheral face forming an acute angle with the plane of said continuous flat shoulder to enable said peripheral face to exert a sealing pressure against the inner faces of the marginal walls of the container when the strip is applied thereto.

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