H. L. BORDERS AND C. A. ROEHRIG.

LID HINGE FOR CORRUGATED BOXES.

APPLICATION FILED APR. 11, 1919.

1,316,078. Patented Sept. 16, 1919.

Fig. 1.

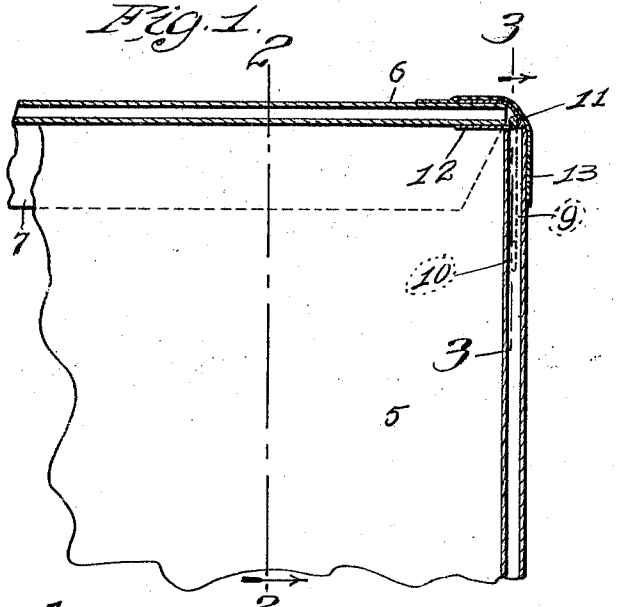


Fig. 3.

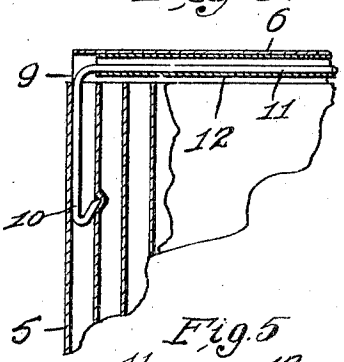


Fig. 5

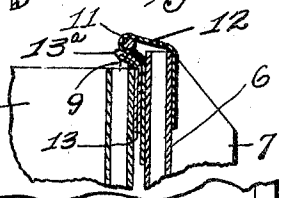


Fig. 2

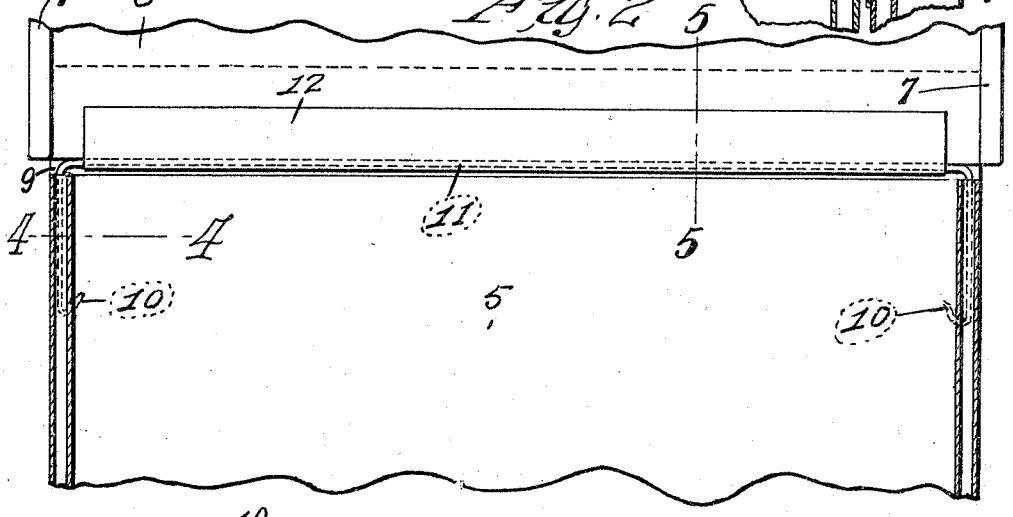
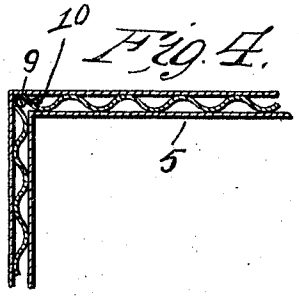


Fig. 4.



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UNITED STATES PATENT OFFICE.

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LID-HINGE FOR CORRUGATED BOXES.

1,316,078. Specification of Letters Patent. Patented Sept. 16, 1919.

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To all whom it may concern:

Be it known that we, HARRY L. BORDERS and CHRISTIAN A. ROEHRIG, citizens of the United States, and residents of St. Louis, State of Missouri, have invented certain new and useful Improvements in Lid-Hinges for Corrugated Boxes, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to improvements in lid hinges for corrugated boxes and has for its primary object a hinge so that the lid of a corrugated paper box may be raised and lowered innumerable times without breaking the hinge connection.

A further object is to provide a stiffening wire which forms a portion of the hinge for a corrugated paper box, the wire being so secured as to prevent the same from being removed from the box after being inserted.

In the drawings:

Figure 1 is a fragmental sectional view of our device applied to a corrugated box with the lid thereof in closed position.

Fig. 2 is a fragmental sectional view taken on the line 2—2 of Fig. 1, showing the lid in elevated position.

Fig. 3 is a section taken on the line 3—3 of Fig. 1.

Fig. 4 is a section taken on the line 4—4 of Fig. 2.

Fig. 5 is an enlarged sectional view taken on the line 5—5 of Fig. 2 with the lid thrown entirely back and resting against the body of the box.

In the construction of our device, we provide a body member 5 which is constructed preferably of corrugated paper board, this container being left open on its upper end. Upon the open end of this container is placed a lid constructed of similar material which is provided with depending flanges 7 around three of its sides, the depending flanges fitting outside the vertical walls of the container 5.

In the rear wall of the container is inserted a U-shaped wire 9, said wire extending almost entirely across one of the faces of the container. This wire is provided at its lower end with a hook portion 10, the object of this hook portion being to bind the wire 9 securely within the container body as is illustrated in Fig. 3, wherein the hook 10 is shown as cutting into one of the walls of the corrugated partition of which the body of the box or container is constructed.

Surrounding the portion 11 of the wire 9 is a strip of fabric 12, this strip being firmly secured to the upper and lower surface of the lid 6 and along that edge of the lid which is not provided with a depending flange, this wire and fabric forming a hinge.

In order to prevent the admission of dust or other foreign substance into the box 5, we place a second strip of fabric 13 over a portion of the aforesaid fabric and extending down to the body of the box and being secured thereto; also performing the function of an additional hinge member, thereby virtually making a double hinge for the lid.

The wire 9 further performs the function of stiffening that portion of the box in which it is inserted and prevents the bulging of the same when the box is packed, thereby forming a straight hinge. This would be impossible were the strip 13 only used as a hinge as then the central portion of the body of the box could bulge outward and the utility of the hinge be destroyed.

By our invention a hinge is formed which will last as long as the container and without the defect aforementioned. Neither is there any tendency of the hinge becoming loosened when the lid of the box is thrown back as would be the case when a fabric strip only was employed as a hinge, and by the formation of the wire member of the hinge, the hooks 10 gripping into the corrugations prevent the withdrawal of the wire 9.

As perviously pointed out, the strip of fabric 13 has one of its margins secured to the outside of the box and the other margin superimposed and secured over the strip or fabric 12 passing over the wire 9, thus affording two thicknesses of fabric over the wire 9 when the lid is closed. This prevents the lid along the hinge margin from being pressed downwardly, thus stiffening the lid from upward and downward pressure along its hinge connection.

It will be further noted that the vertical depending end of the wire 9 has a tendency to strengthen and stiffen the corners of the

box in which they are located; thus it will be seen that the wire performs three functions, to-wit: It acts as a portion of the hinge connection; a stiffening for the edge of the box; and also as a reinforcement for the corners in which they are placed.

In Fig. 5 we have illustrated the connection of the strip of fabric 13 when the lid is entirely open and thrown back against the rear side of the box, from which it will be observed that this strip folds upon itself and forms a fold 13^a projecting between the top edge of the box and the fabric strip 12 and wire 11. The effect of this as previously pointed out is to form a dust proof connection between the lid and top edge of the box on the side of the box on which the lid is hinged.

Having fully described our invention, what we claim is:

1. A hinge for corrugated boxes comprising in combination with a body and lid composed of corrugated material, of a U-shaped wire inserted in the body portion of the box and extending across one side thereof, a strip of fabric surrounding said wire and secured to the upper and lower faces of the lid, a second strip of fabric superimposed on that portion of the first mentioned fabric which is secured to the upper surface of the lid extending over said wire and secured to the outside of the body portion of the box.

2. A hinge for corrugated boxes comprising in combination with a body and lid composed of corrugated material, of a U-shaped wire inserted in the body portion of the box adjacent the corners thereof, hook members formed on each end of the wire for engaging the walls of the corrugations formed in the body portion of the box, a strip of fabric surrounding said wire and secured to the upper and lower faces of the lid, a second strip of fabric superimposed on that portion of the first mentioned fabric which is secured to the upper surface of the lid extending over said wire and secured to the outside of the body portion of the box.

3. A hinge for corrugated boxes comprising a U-shaped wire provided with prongs on its terminal portion adapted to be inserted in the corrugations of the body of the box, a strip of fabric material surrounding said wire and having one margin thereof secured to the under side of the box lid and its opposite margin secured to the top surface of the box lid, and a second strip of fabric material superimposed and secured to the first mentioned strip along one margin thereof and having its opposite margin secured to the exterior surface of the body of the box, said second mentioned strip co-acting with the wire and first mentioned strip in forming the hinge and as a cover for the opening between the top edge of the box and the box lid.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

HARRY L. BORDERS.
CHRISTIAN A. ROEHRIG.

Witnesses:
WALTER C. STEIN,
ELIZABETH CARTALL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."