

April 11, 1944.

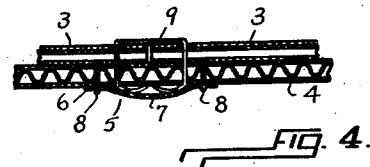
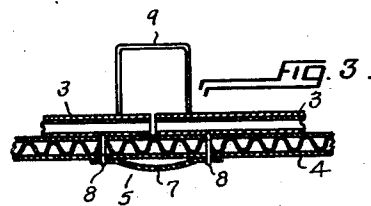
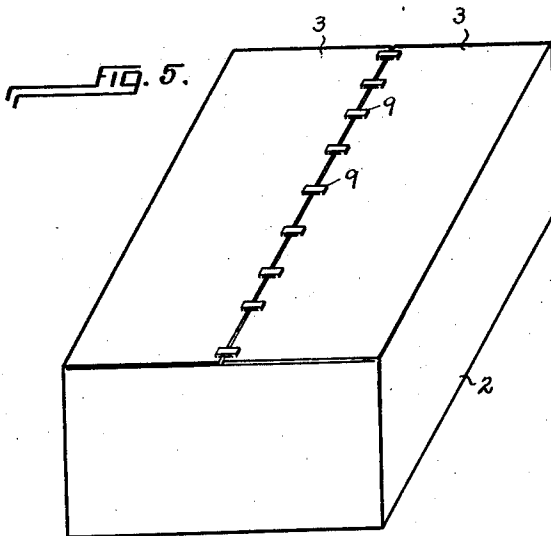
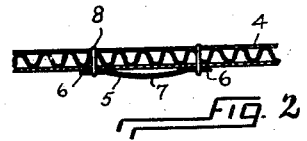
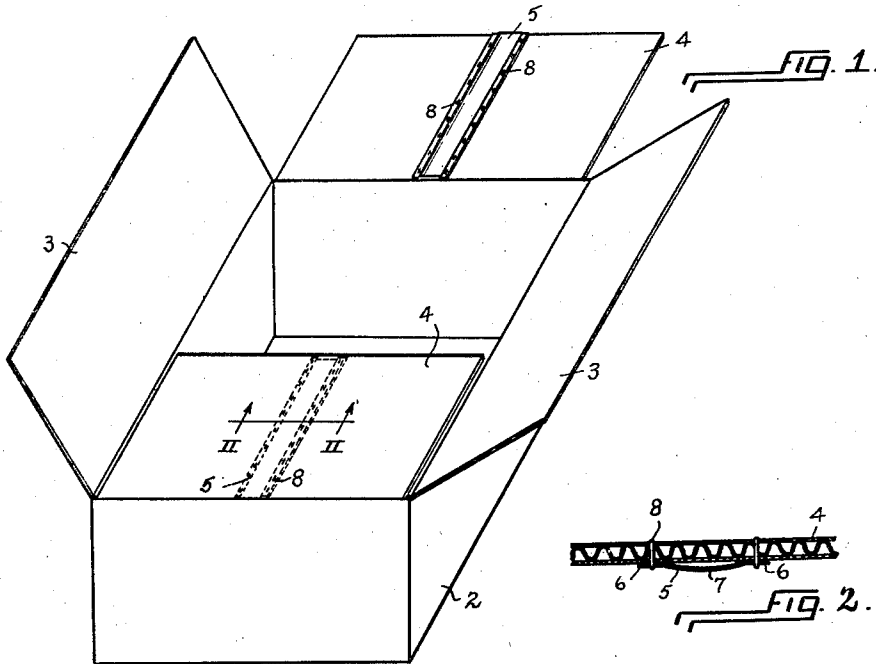
D. R. LA PLACE

2,346,591

PACKAGING

Filed April 9, 1941

2 Sheets-Sheet 1



INVENTOR

Desmond R. LaPlace  
by Christy, Parmelee and Strickland  
his attorneys

April 11, 1944.

D. R. LA PLACE

2,346,591

PACKAGING

Filed April 9, 1941

2 Sheets-Sheet 2

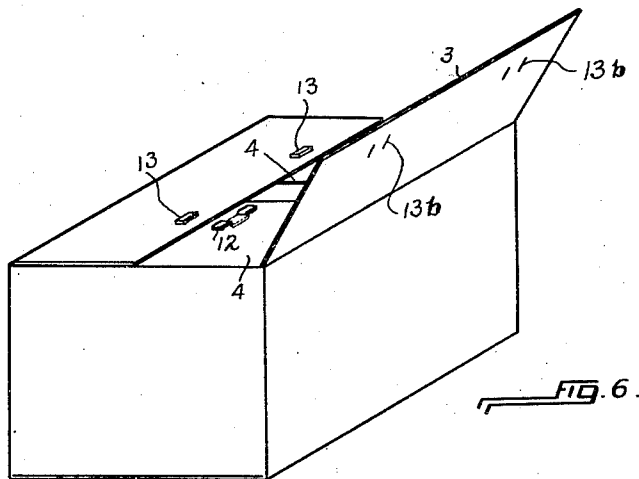


FIG. 6.



FIG. 7.

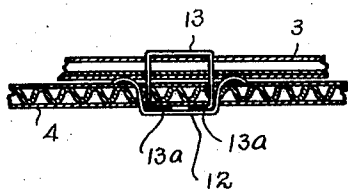


FIG. 8.

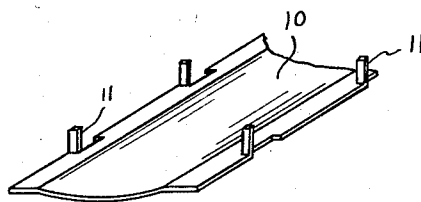


FIG. 9.

INVENTOR

Desmond R. LaPlace  
by Christy, Parmelee and Strickland  
his attorneys

## UNITED STATES PATENT OFFICE

2,346,591

## PACKAGING

Desmond R. La Place, Pittsburgh, Pa., assignor  
to Bocjl Corporation, Pittsburgh, Pa., a corpo-  
ration of Delaware

Application April 9, 1941, Serial No. 387,562

2 Claims. (Cl. 229—47)

This invention relates to packaging and particularly to the preparation and closing of cartons made of laminated or corrugated paper. The invention relates especially to the sealing of packages or cartons by the use of staples.

It is the practice at the present time to use laminated paper and corrugated paper boxes for the shipment of various commodities and to close the overlapping lifts or flaps of such boxes or cartons by the use of staples. While the conventional staple is very satisfactory under many conditions for closing such cartons, some means has to be provided for clinching the points of the staples after they have been driven through the overlapping lifts. Heretofore this has required constructing the carton in such a manner that a thin anvil could be inserted under the flaps, the staples driven against this anvil, and the anvil then withdrawn. Obviously the withdrawing of the anvil leaves an opening so that such cartons if used for the shipment of a loose granular material are not completely tight. It has also been proposed to close the cartons by the use of staples which are driven through the overlapping lifts of the carton and which are clinched by some manipulation of the top or the legs of the staple after the staple has been set. This is satisfactory where it is permissible to have the points of the staple project down into the box. However, in many cases the points of the staple are likely to injure the packages of commodities or other articles contained within the carton.

The present invention pertains to a carton and method of closing the carton by means of conventional staples which avoids the difficulties above-mentioned. According to the present invention, means is attached to the inner face of the innermost lift of the container which constitutes a permanent anvil. This means is applied to the carton preferably during the manufacture of the carton but in all cases before the carton is finally sealed, and is preferably stapled or otherwise firmly secured in place. When the carton is closed staples are driven into it in the usual manner but the positioning of the staples is predetermined so that the points of the staple, upon passing through the innermost lift, engage said attached means and turn the points of the staples, thus simultaneously clinching them and preventing them from injuring any of the contents of the box. This means may comprise a suitably constructed thin strip of metal stapled in place or having prongs or legs by means of which it is attached to the underside of the lift

of the box. Alternatively, it may comprise suitably positioned individual elements such as large staples against which the securing staples are in turn driven. My invention may be more fully understood by reference to the accompanying drawings in which—

Figure 1 is a perspective view of a carton prepared in accordance with the present invention, one of the end flaps being shown folded inwardly and one of them being shown folded outwardly, the side flaps being open;

Figure 2 is a transverse section in the plane of line II—II of Figure 1, but on a larger scale;

Figure 3 is a view similar to Figure 2 but showing the side flaps closed in and with the top staple in position to be driven;

Figure 4 is a view similar to Figure 3 showing the top staple completely driven;

Figure 5 is a perspective view of the carton or package when completed;

Figure 6 is a perspective view showing a modification in which individual staples are used in place of a continuous strip as shown in Figure 1;

Figure 7 is a section similar to Figure 2 illustrating a modification of Figure 6;

Figure 8 is a view similar to Figure 4 with the top staple completely driven; and

Figure 9 is a perspective view of a modified form of strip for use in constructing the package in the manner illustrated in Figure 1.

In the drawings, 2 designates a carton of any known or preferred construction made from pasteboard, laminated paper or corrugated paper or the like. It has longitudinally extending side flaps or lifts 3 and inwardly folding end flaps or lifts 4. In the particular box illustrated the flaps 4 are first folded inwardly and then the flaps 3 are folded in over the top of them. The flaps 3, when they are folded in, meet or almost meet along the longitudinal center line of the box.

In accordance with the present invention, a thin metal strip designated generally as 5 having perforated edge portions 6 and a bowed central portion 7 is secured to the underside of each flap 4. In the particular construction illustrated the strip 5 is secured to the underside of the flap 4 by small wire staples 8 which are driven through the perforated flanges or edges 6 of the strip. It is contemplated that the strip 5 be secured to the flaps 4, either during the manufacture of the box or at the time that the box is prepared for use.

When the strip 5 has been applied to the flaps

and the carton has been filled and the package is to be sealed, the flaps 4 are folded inwardly. The flaps 3 are then folded in to overlap the flaps 4. Staples are then driven into the carton so as to fasten the flaps 3 to the flaps 4. These staples, designated 9, are driven as shown in Figure 5 so that the bridge portion of the staples straddles the line defined by the meeting edges of the two flaps or lifts 3, one leg of each staple passing through one edge of one of the two lifts and the other leg passing through the edge of the other lift. In this way the staples are positioned symmetrically over the strip 5. The width of the staples, i. e., the spread from the one leg to the other, is less than the full width of the strip 5 and is just about as wide as the bowed portion 7 of the strip. Figure 3 illustrates the relation in which the staple is originally positioned with respect to the strip. When the staple is driven in the usual way the points of the staple pass through the overlapping lifts, strike the concaved inner face of the portion 7 of the strip, and are thereby turned in toward each other, clinching the staple as it is being driven, as shown in Figure 4.

While the strips 5 are disclosed as being positioned along the center line of the carton or package, it is apparent that these strips could be positioned otherwise on the flaps 4 or on the carton, depending upon whether it was desirable to locate the staples 9 and how many of such staples are to be used.

Instead of the strip 5 being secured to the inner faces of the end lifts by separate staples 9, it is contemplated that the strips 5 may have some kind of integral securing means as shown, for example, in Figure 9. In this figure 10 designates a strip similar in cross-section to the strip 5 but having integral prongs 11 thereon which are adapted to pass through the lift to which the strip is secured and which are clinched on the opposite side of the lift.

Also instead of the means for turning the staple being in the form of a strip, such means may comprise appropriately located individual members spotted at various locations over the inner face of the underlying lift or flap. This is shown, for example, in Figures 6, 7 and 8. According to this modification relatively heavy staples 12 are driven by a conventional stapling tool or in any appropriate manner into the underface of the inner lifts 4 at predetermined points, the legs of the staples being clinched on the reverse side of the lifts into which they are driven. When these staples 12 have been thus spotted on the inner lifts and the carton is ready to be sealed, the overlapping lifts are folded in and staples of a slightly smaller dimension are driven through from the outside of the carton in such manner that when the points penetrate the two lifts they will strike against the staple 12 and thus be turned. This is clearly shown in Figure 8 where the staple 13 has been driven from the outside of the package through the two overlapping lifts and the inner end portions 13a have been deflected and bent inwardly by engagement with the bridge of the staple 12.

Where the package or carton is closed according to this modification it is contemplated that some kind of depression or marking would be formed on the carton so as to predetermine the points where the staples 12 and 13 are to be

driven, thus enabling the operator to be sure, in driving the staples 13, that they will engage the staples 12. Without some predetermined pattern it would otherwise be difficult to properly locate the staples 13 with reference to the staples 12. Such a mark is indicated at 13b in Figure 6. Such markings may also be used, if desirable, with the modification shown in Figure 1, although they are relatively less necessary where the anvil is continuous.

From the foregoing description it will be seen that my invention involves certain novel improvements in the art of packaging wherein conventional staples are driven into the carton or exterior of the package when the package is to be sealed without requiring any special tools and without requiring the insertion of any anvil through the walls of the box or under any of the flaps, the turning or clinching of the staples being effected entirely by means permanently attached to the interior of the box. The camming or anvil strips or staples which are used to turn the points of the fastening staples can be provided at very little cost. It will also be seen that through the use of the invention the lifts or flaps of the cartons may be secured by staples which pass completely through the overlapping lifts and which are clinched against the inner face of the innermost lift. However at no time can the legs of the staple penetrate and damage any of the goods within the carton. The use of the strips or staples on the under face of the inner lifts to turn and clinch the points of the securing staples also aids in the box being tightly stapled. This is because the clinching of the legs of the staple by contact with the underlying camming means tends to draw the overlapping lifts together.

While I have illustrated certain specific embodiments of my invention it will be understood that this is merely by way of illustration and that various changes and modifications may be made therein within the contemplation of my invention and under the scope of the appended claims.

I claim:

1. A package comprising a carton having overlapping lifts, an anvil member comprising an elongated strip of metal permanently attached to the inner face of an underlying lift, and staples entered through an overlying lift having the ends thereof driven against and clinched by contact with said strip, said strip having means along the edges thereof for permanently attaching it to the lift to which it is secured and having an intermediate portion which is concaved with respect to the direction in which the staples are driven for turning the points of the staple inwardly toward each other.

2. A stapled package comprising a carton having overlapping portions which are to be stapled, the outside portion forming the overlap having a plurality of staples driven therethrough and passing through an underlying portion, said underlying portion having a strip-like anvil element permanently attached thereto against which the points of said staples are turned, said strip being substantially coextensive with one dimension of the lift to which it is attached and constituting a stiffening element therefor.

DESMOND R. LA PLACE