July 14, 1959 M. ECKSTEIN 2,894,308

CARTON FLAP CLAMP

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Fig. 1

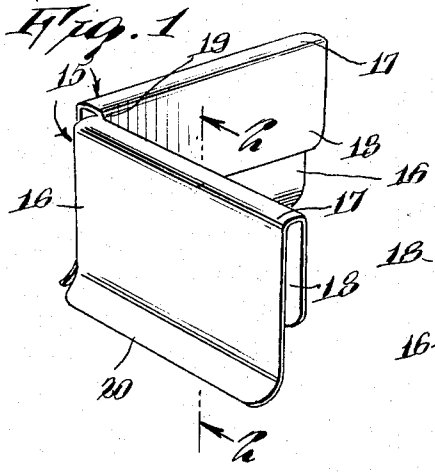


Fig. 3

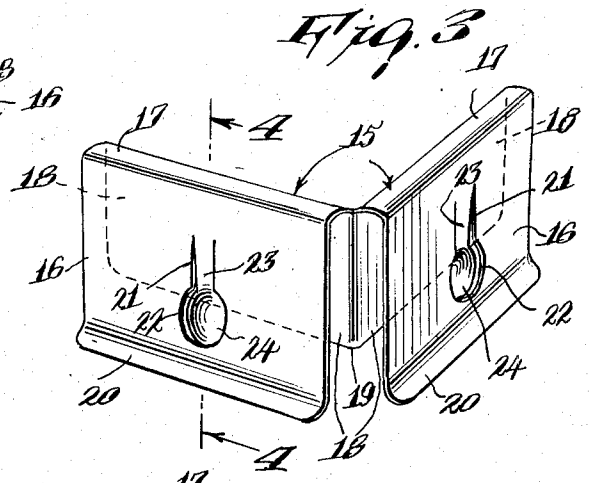


Fig. 2

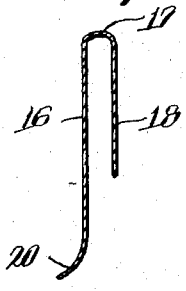


Fig. 4

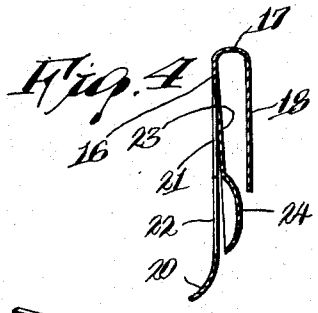


Fig. 4a

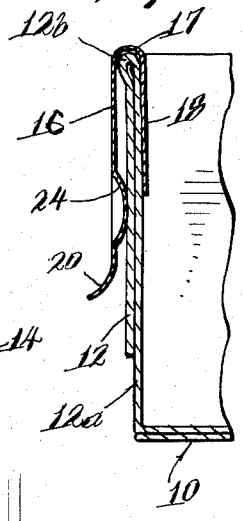
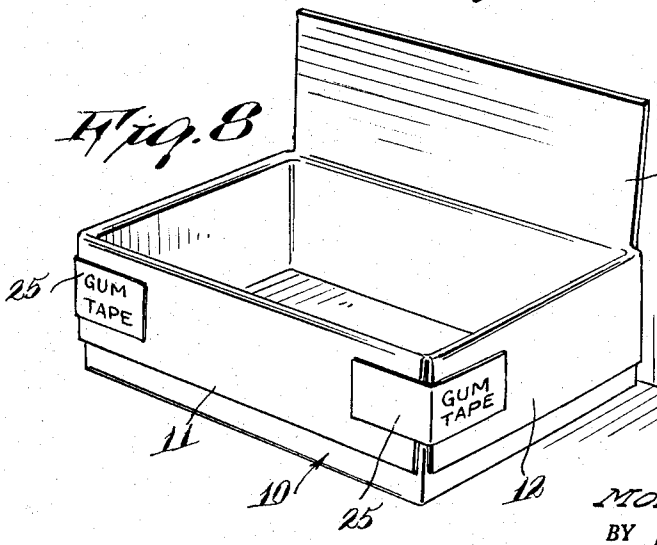


Fig. 8



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Fig. 5

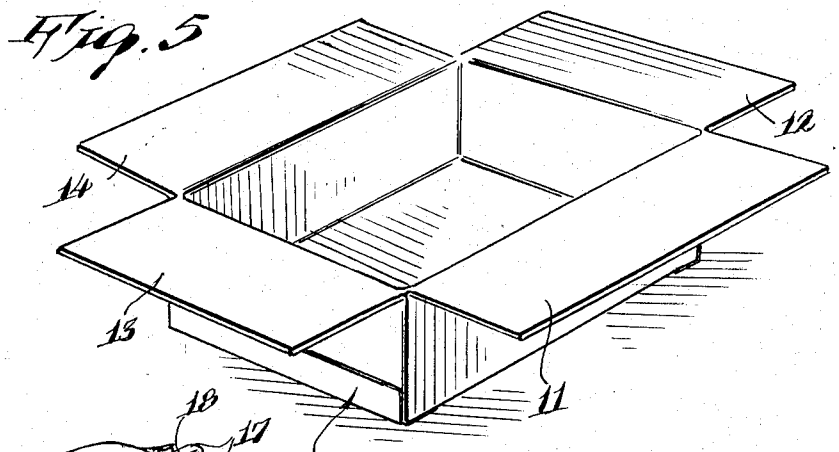


Fig. 6

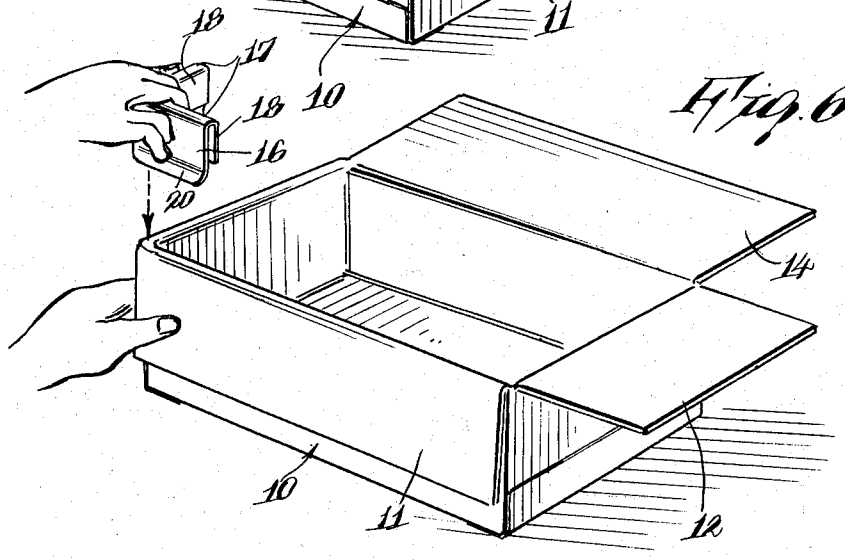
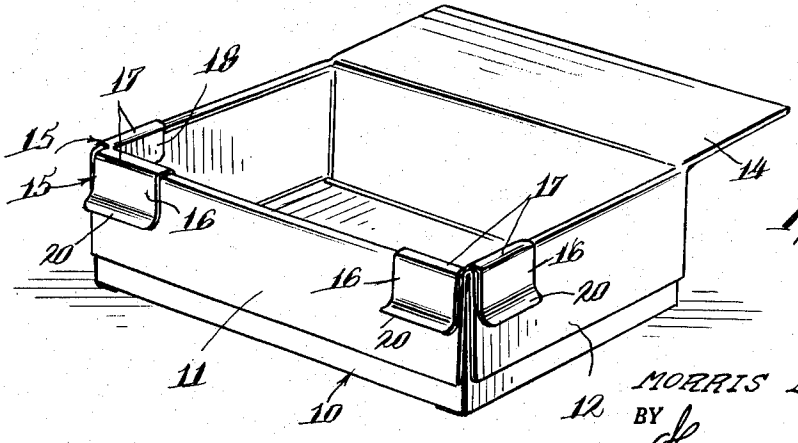


Fig. 7



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2,894,308

CARTON FLAP CLAMP

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Application April 15, 1957, Serial No. 653,017

4 Claims. (Cl. 24—259)

This invention relates generally to clamps, but more specifically to clamps to secure carton flaps against the carton side walls during filling operations.

A main feature of the invention resides in the provision of a clamp structure of angular formation for application to the corners of packing cartons for purposes of retaining the carton flaps against the side walls of the container during the filling operation.

A further feature of the invention resides in the provision of a clamp structure for securing corner flap portions of a carton against the corresponding side walls to retain the flaps in an out of the way position during the filling operation of the carton, and wherein the said clamp structure is easily removable from the corners of the carton after the latter has been filled and the carton is ready to be closed.

A further feature of the invention resides in the provision of a clamp structure of the above type which is self adjustable to wall and flap thicknesses of a carton, which is easily applied to the corners of a carton while the flaps are temporarily held in folded down position, and which is easily removed after the purpose of the clamp structure has been fulfilled.

Another feature of the invention resides in the provision of a clamp structure for not only maintaining the flaps in a folded down position during the packaging or filling of the carton but which also lends itself to a reinforcement of the corners and adjacent edges of the carton when in open position during the filling operation, and for prevention of tears thereat.

Another feature of the invention resides in the provision of a clamping structure which is capable of being produced by a simple stamping operation, which is efficient in operation, easy to apply and remove and which takes up negligible additional space when applied to the carton.

These objects and other incidental ends and advantages of the invention will hereinafter appear in the progress of the disclosure and as pointed out in the appended claims.

Accompanying this specification are drawings showing preferred forms of the invention and wherein:

Figure 1 is a view in perspective showing one form of a clamping structure, the subject of the invention.

Figure 2 is a view in section across the plane 2—2 of Figure 1.

Figure 3 is a view in perspective of a modified form of a clamping structure.

Figure 4 is a sectional view of Figure 3 across the plane 4—4 thereof.

Figure 4*a* is a view in section of the clamp of Figure 3 as applied to carton walls and showing the mode of operation thereof.

Figure 5 is a view in perspective showing a type of container to which the clamping structures of the invention herein are applicable.

Figure 6 is a view in perspective showing a carton having flaps turned inwardly against the outer faces of

the side walls thereof and also showing the manner in which a clamping structure is applied to one of the corners.

Figure 7 is a view in perspective showing how the two side and one front flap of a carton are maintained in folded down position by use of a pair of corner clamping structures forming the subject of the invention.

In accordance with the invention and the forms shown, numeral **10** indicates generally an ordinary packing carton conventionally formed of composition, fiber, cardboard or any other material. Carton **10** is provided with the conventional front flap **11**, side flaps **12** and **13** and rear cover flap **14**.

It is known that in the filling of cartons provided with flaps such as **11**, **12**, **13** and **14**, it is difficult to freely fill such cartons because of interference with freedom in approaching the mouth of the carton by reason of flaps **11—14**. The purpose of the clamping structure herein is to fold such flaps against the corresponding outer faces of the side walls of the front, side and rear walls to provide free and unhampered access to the mouth of the carton and eliminate extra space taken by the projection of the flaps either on the outside of the carton thereby interfering with freedom of operation of the filling operator, or projection of the flaps in the inside of the carton thereby interfering with the capacity thereof.

A clamping structure thus is provided generally indicated by numeral **15**, and is in the form of a pair of similar and inverted U-shaped clamping members. Each clamping member as shown is provided with an outer leg **16**, a top wall **17** and an inner leg **18**. The inner edge of the short leg of each clamping member is joined for angular disposition of the clamping members as indicated by common edge **19**. In most cases the angulation between the individual clamping members joined at common edge **19** is preferably 90 degrees, but the angulation may assume any angle. For this reason it is preferable that the clamping structure be formed of resilient and flexible metallic material to make the same adjustable at least in angulation.

As shown the outer leg **16** of each of the clamping members is longer than the inner leg **18**, each outer leg at the bottom being provided with an upwardly turned edge or flared portion **20** for facilitating hand removal of the clamp when applied to a corner of carton **10**.

The distance between the outer and inner legs **16** and **18** is controlled by the joining top wall **17**, and this distance may be dictated by the thickness of the carton walls for proper effectiveness.

It is to be observed that outer leg **16** of each of the clamping members is more elongated than the inner leg **18** for giving the clamping member stability in holding on to the corners of the carton. Moreover, the top walls **17** of the clamping members serve to engage the intersecting corner edges of the carton including the fold of the flap members when the latter are folded against the outer faces of the walls of the carton.

In another modified form of the structure, the front wall of each clamping member is provided wtih a resilient tongue and clamping element for effecting clamping pressure of the flaps lying along the outer faces of the walls of the carton. Thus, intermediate the width of each of the outer legs **16** is a tongue cut-out **21** and an end expanded cut-out **22** thereby forming a resilient strip **23** and a bottom terminal bowl-shaped element **24** which are offset inwardly whereby tongue **23** serves as a spring and **24** as a clamping element against the flaps as best shown in Figure 4*a*. In this form of the invention, an added width of top wall **17** of each of the clamping members may be used to accommodate different sizes

since tongue **23** and element **24** acommodate themselves to variations in carton thickness.

As shown in Figure 8, the old method of keeping flaps down utilized gummed tape which is a time consuming and messy procedure for this purpose.

As shown in Figure 6, the clamping structure is merely lowered to each corner of the carton after the flaps have been folded against the outer faces of the carton walls. After forcing the clamping structure into the corners of the carton as indicated in Figure 7, the corners and top edges are reinforced to prevent tearing thereat and the flaps are maintained in folded in position. For removal of the clamping structure it is merely necessary to lift the same from the flared portions **20**.

The clamping structure above described may be manufactured by a stamping and folding operation as becomes obvious in view of the fact that the clamping structure is formed from a single blank. Thus by viewing Figures 1 and 3 it is seen how a single blank may be provided having a fold line equivalent to the integration edge **19** at the inner walls **18**. The blank is further provided with a straight vertical cut thereabove and in alignment with fold line **19** to form the inner continuous and spaced edges of outer legs **16** and top walls **17**. Transverse fold lines are provided to form the longitudinal edges of the top walls **17**. The tongue **13** and clamping element **24** are formed from the blank by a cutting operation.

I wish it understood that minor changes and variations in the integration, size, location and size of parts may all be resorted to without departing from the spirit of the invention and the scope of the appended claims.

I claim:

1. A packing carton removable corner clamp for clamping carton flaps against the carton side walls, comprising a pair of similar and inverted U-shaped resilient clamping members, each clamping member having an outer long and an inner short leg, the inner edge of the short leg of each clamping member being joined for angular disposition of the clamping members and the ends of the outer long legs having an outwardly flared offset to serve as a hand grasping means for application and removal of the corner clamp.

2. A packing carton removable corner clamp for clamping carton flaps against the carton side walls, comprising a pair of similar and inverted metallic U-shaped resilient clamping members, each clamping member having an outer and inner leg, a rounded wall joining the outer and inner legs of each of the clamping members, the inner edge of the inner leg of each clamping member being joined for angular disposition of the clamping members.

3. A packaging carton removable corner clamp as set forth in claim 2 wherein the outer long leg of each clamping member at the lower end is offset to serve as a hand grasping means for removal of the corner clamp.

4. A packing carton removable corner clamp for clamping carton flaps against the carton side walls, comprising a pair of similar and inverted U-shaped clamping members, each clamping member having an outer and inner leg, the inner edge of the inner leg of each clamping member being joined for angular disposition of the clamping members, the outer leg of each of said members having an inwardly directed resilient clamping tongue cooperating with the inner leg of said members and said outer leg also having an offset on the bottom thereof.

References Cited in the file of this patent

UNITED STATES PATENTS

D. 58,153	Maker	June 14, 1921
231,727	Nahe	Aug. 31, 1880
2,168,911	Meyer	Aug. 8, 1939