

July 14, 1953

H. L. ECKLES

2,645,408

ATTACHABLE AND DETACHABLE HANDLE CLOSURE COMBINATION

Filed Aug. 8, 1949

2 Sheets-Sheet 1

FIG. 1.

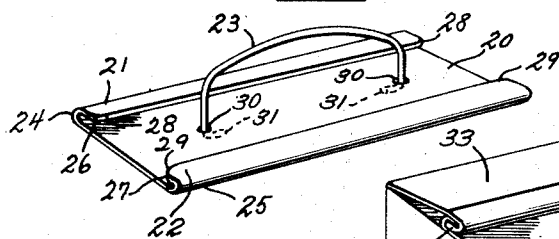


FIG. 2.

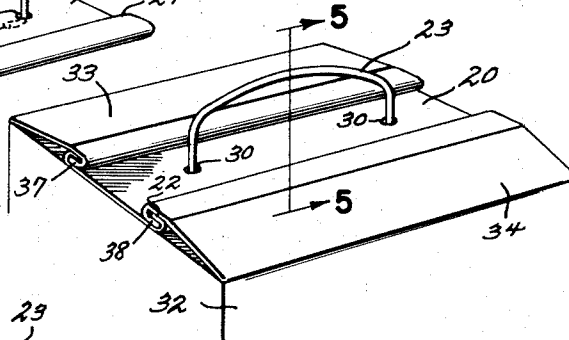


FIG. 3.

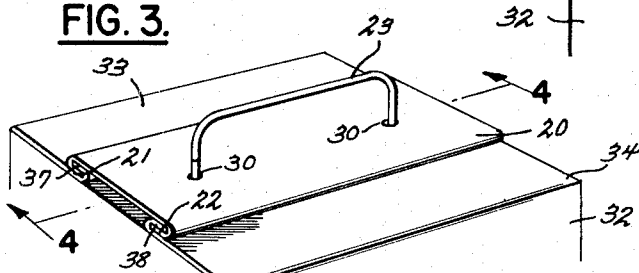


FIG. 4.

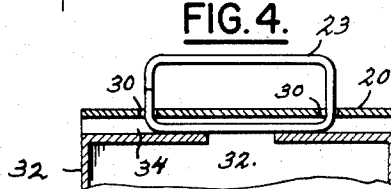


FIG. 5.

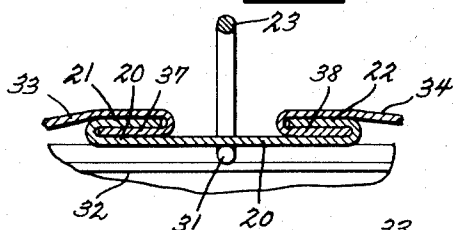


FIG. 6.

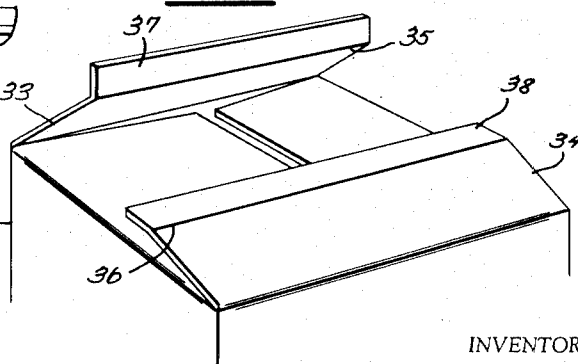
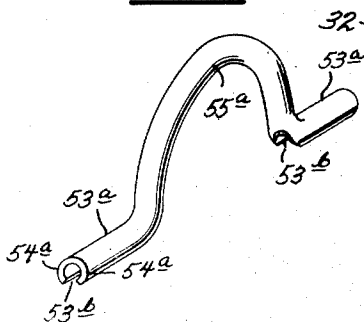


FIG. 14.



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FIG. 7.

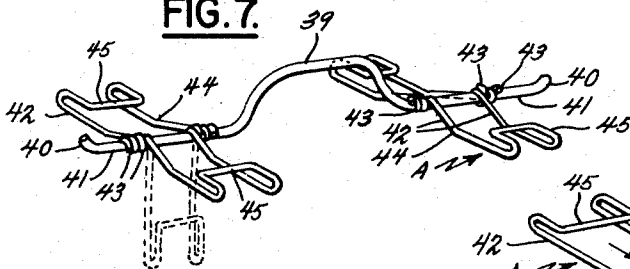


FIG. 8.

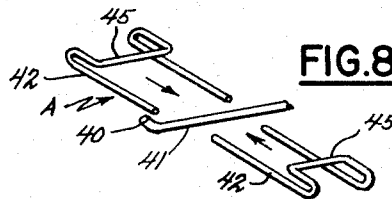


FIG. 9.

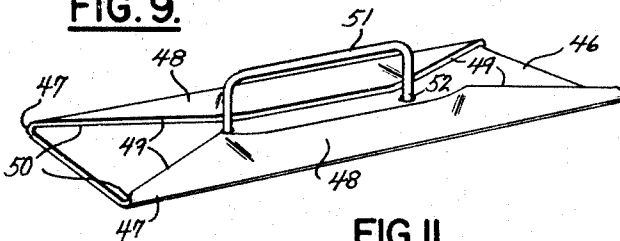


FIG. 11.

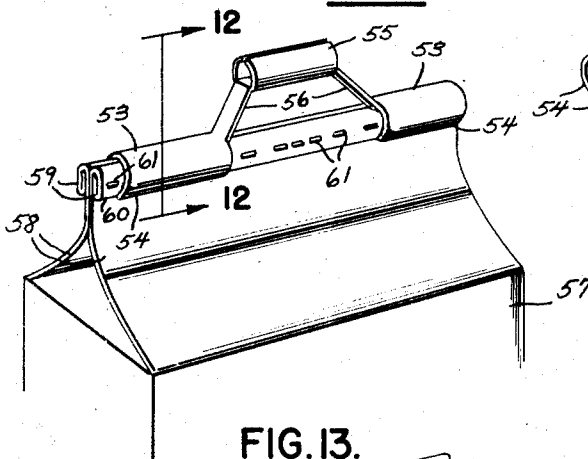


FIG. 10.

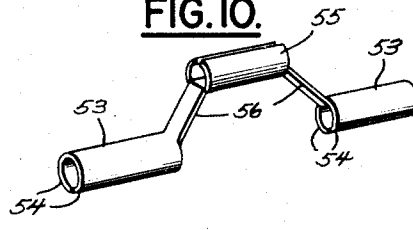


FIG. 12.

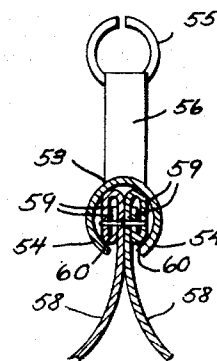
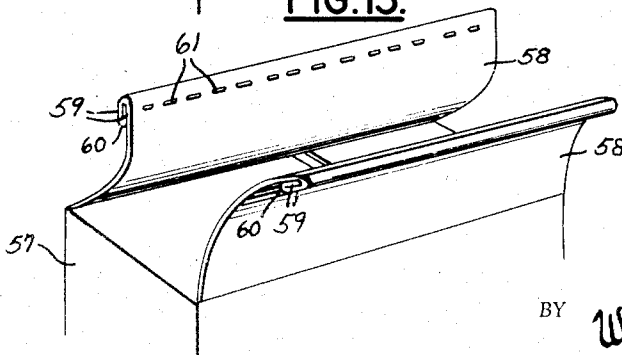


FIG. 13.



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ATTACHABLE AND DETACHABLE HANDLE
CLOSURE COMBINATION

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Application August 8, 1949, Serial No. 109,143

1 Claim. (Cl. 229—52)

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The present invention relates to improvements in an attachable and detachable handle closure combination and has for an object the provision of a device of this kind which can be quickly and easily attached and detached from conventional folding cardboard boxes, cartons and similar containers.

Another object of the present invention is to provide a handle of this character which has means thereon for cooperating with folded or bent portions, ridges or beadings on the boxes or the like for securely but detachably mounting the handle on the boxes.

A further object of the present invention is the provision of an improved structure which is adapted to be mounted on the closure flap of a box for holding the flaps in closed position and at the same time serve as a handle for carrying the box.

A still further object of the present invention is to provide an improved combined handle and closure which can be removably attached to a box without the use of any extraneous devices, such as screws, bolts, nuts, staples, thread and adhesives.

The present invention aims to provide an improved structure in which the closure flaps of a container are frictionally held between portions of the device in such a manner that when in use the weight of the container and its contents will increase the frictional grip of the handle upon the flaps of the container.

The present invention also aims to provide an improved handle which is applied to the closure flaps of a container by sliding it over folded edge portions of the flaps in a direction parallel to the opposed edges of the flaps so that removal of the handle from the container can only be effected by again sliding the handle in a similar direction.

The present invention contemplates the provision of an improved device of this type which comprises relatively few parts, is light in weight and simple and economical to manufacture.

With the foregoing and other objects in view, the invention will be hereinafter more fully described and more particularly pointed out in the appended claim.

In the drawings, in which the same parts are denoted by the same reference numerals throughout the several views,

Figure 1 is a perspective view of the improved device constructed in accordance with the present invention,

Figure 2 is a perspective view showing one manner of attaching the device of Figure 1 to a box top,

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Figure 3 is a perspective view showing another way of attaching the device of Figure 1 to a box top,

Figure 4 is a sectional view taken on the line 4—4 of Figure 3 and looking in the direction of the arrows,

Figure 5 is a sectional view taken on the line 5—5 of Figure 2 and looking in the direction of the arrows,

Figure 6 is a fragmentary perspective view of a box illustrating one manner in which its closure flaps can be folded to form the handle engaging portions,

Figure 7 is a perspective view of a modified form of handle,

Figure 8 is a perspective view of one end of the form of handle illustrated in Figure 7 and showing one method of assembly,

Figure 9 is a perspective view of another modified form of the present invention,

Figure 10 is a perspective view of a further modification of the present invention,

Figure 11 is a perspective view of the form of handle illustrated in Figure 10 shown as applied to a box top,

Figure 12 is a sectional view taken on the line 12—12 of Figure 11 and looking in the direction of the arrows,

Figure 13 is a fragmentary perspective view of a box illustrating one manner in which its closure flaps can be folded to provide handle engaging portions for the form of handle illustrated in Figures 10, 11 and 12, and

Figure 14 is a perspective view of another modified form of the present invention.

Referring more particularly to the drawings and especially to Figures 1, 2 and 5, the improved handle is shown as comprising a main body portion 20 having upturned flanges 21 and 22 and a bail or handgrip 23. The body portion 20 and the flanges 21 and 22 may be oblong as illustrated or of any other appropriate shape and may be made of metal, plastic or any other suitable material.

The flanges 21 and 22 are formed by bending the opposite side edge-portion of the body portion 20 upwardly along the lines 24 and 25 and then inwardly and downwardly until the opposite side edge portions are disposed in spaced overlying relation to the main body portion to form therebetween elongated pockets 26 and 27. The free edge corners of the flanges 21 and 22 are rounded off as at 28 and 29.

Substantially along its longitudinal medial line the main body portion 20 has spaced apart open-

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ings 30 through which extend the free end portions of the bail or hand-grip 23. After their insertion through the openings 30, the free end portions of the bail 23 which may be made of wire or other suitable material are bent inwardly toward one another to form terminals 31. The terminals 31 will engage the under surface of the body portion 20 adjacent the openings 30 to prevent detachment of the bail 23 from the body portion.

The use of this form of the invention in connection with a container, such as shown in Figure 6 of the drawing, is illustrated in Figures 2 and 5. A container, such as a box 32, has closure flaps 33 and 34 which are provided with well set crease lines 35 and 36 adjacent their free longitudinal edges. The free edge portions of the flaps are folded downwardly and inwardly along the crease lines 35 and 36 to form wings 37 and 38 which underlie and are spaced from the flaps 33 and 34, respectively.

The user of the device will place one hand upon the closure flaps 33 and 34, grasp the bail 23 in his other hand and insert the body portion 20 of the device beneath the wings 37 and 38 so that sliding movement of the body portion towards the box and in a direction parallel to the opposed edges of the flaps 33 and 34 will cause the wings 37 and 38 to be received by the pockets 26 and 27, respectively. The rounded off corners 28 and 29 of the flanges 21 and 22 will facilitate the entry of the wings 37 and 38 into the pockets 26 and 27, respectively.

As shown in Figures 2 and 5 of the drawings, the wings 37 and 38 have a width substantially the same as that of the flanges 21 and 22 and are frictionally gripped between the body portion 20 and the flanges 21 and 22, respectively. When the box 32 is filled or partially filled and the user is carrying the box by the bail 23, the weight of the box and its contents will be transmitted to the handle through the closure flaps. The upper face of the body portion 20 will be moved into tight gripping engagement with the under face of the wings 37 and 38 and the under face of flaps 33 and 34 will be drawn into frictional contact with the upper faces of the flanges 21 and 22, respectively. Since the crease lines 35 and 36 are well set, they will offer great resistance to change but, if the weight of the contents of the box were sufficient to overcome this resistance and the wings 37 and 38 tended to straighten out by pivoting on the crease lines, the lower faces of the wings would be moved into firmer engagement with the upper face of the body portion 20. Therefore, the escape of the wings 37 and 38 from the pockets 26 and 27, respectively, would be prevented and the crease lines would be brought into contact with the free edges of the flanges 21 and 22 to help maintain the crease lines.

If desired, the wings 37 and 38 may be turned upwardly along the crease lines 35 and 36 to overlie the flaps 33 and 34 in spaced relation thereto, as shown in Figures 3 and 4 of the drawing. In this case, the terminals 31 of the bail 23 are straightened and the bail detached from the body portion 20. The body portion is then reversed or turned over from the position shown in Figures 1, 2 and 5 to that shown in Figures 3 and 4 of the drawings. The bail 23 is then replaced on the body portion 20 but projects from the opposite side thereof from that shown in Figures 1 and 2 of the drawing. The wings 37 and 38 will be received by the pockets 26 and

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27 and in use the wings will be moved into firm engagement with the top wall of the pocket and the free edges of the flanges will bite into the crease lines 35 and 36 to help maintain them in their creased condition.

It will be noted that the formation of the wings 37 and 38 will leave a gap between the opposed edges of the closure flaps 33 and 34. The body portion 20 of the improved device will also act as a closure for the gap between the edges of the closure flaps. The improved device will also function as a means for holding the closure flaps in position to close the upper opening of the box.

Referring to the form of the invention shown in Figures 7 and 8, the bail or hand-grip is formed from a piece of wire which has its intermediate portion bent upwardly to provide a hand-grip 39. The opposite end portions of the wire are bent upwardly at an angle of the order of forty-five degrees to form terminals 40. Between each terminal 40 and the hand-grip 39 the bail has a bearing portion 41 which is disposed in a horizontal plane below the horizontal plane in which the upper free ends of the terminals 40 are disposed. Mounted on these bearing portions 41 are box closure flap engaging members generally indicated at A. Each of these members A is formed from a single piece of wire which is bent to provide spaced apart substantially parallel arms 42 which constitute the main body portion of the member A. The free end portions of the arms are wrapped about the bearing portion 41 as indicated at 43.

From the wrapped around ends 43, the arms extend downwardly and outwardly from the bearing portions 41 to intermediate points 44 from which points the arms extend outwardly in substantially a horizontal plane. The intermediate closed end portion of the member A is bent over upon itself to form a flange 45 which is disposed in spaced parallel relation to the arms 42 to define a pocket therebetween for the reception of the wings 37 and 38 of the box 32. The members A are arranged in pairs and one member of each pair has its free end portions 43 wrapped around its bearing portion 41 outwardly of the ends 43 of the other member A of the pair. The ends 43 are wrapped around the bearing portions 41 with sufficient tightness to prevent accidental rotation of the members A around the bearing portions but will permit the members A to be rotated through 180 degrees when it is desired to invert the members from the position shown in Figure 7. The upturned terminals 40 will prevent the escape of the members A from the bearing portions 41 and the hand-grip 39 will prevent the inward sliding movement of the members A towards each other.

The use and operation of the modification of the invention illustrated in Figures 7 and 8 will be the same as that described in connection with the form of the invention shown in Figures 1 to 6, inclusive.

Figure 9 illustrates another modification of the present invention in which 46 indicates a main body portion 47 the lines upon which the longitudinal free edge portions of the body portion 46 is bent to form flanges 48. The free edges of the flanges are beveled as at 49 to facilitate the entrance of the wings of the box into pockets 50 formed between the body portion 46 and the flanges 48. A bail or hand-grip 51 has its free end portions extending through openings 52 in

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the body portion 46 and bent over to retain the ball in position on the body portion.

This form of the invention is adapted to be used with a box provided with closing flaps of increased depth. In such a box the crease lines on the flaps used for forming the wings will meet so that when the closure flaps are in closed position there will be no gap between the opposed edges of the closure flaps. With such a structure the width of the body portion 46 can be substantially reduced from that of the form of the invention shown in Figures 1 to 6, inclusive. The use and operation of the modified form of the invention illustrated in Figure 9 is similar to that described in connection with the form of the invention shown in Figures 1 to 6, inclusive.

In the modified form of the invention illustrated in Figures 10, 11 and 12, 53 indicates main body portions and 54 flanges of the combined box handle and closure. The main body portions 53 are connected to a hand-grip 55 by connecting strips 56. The modified form of the device shown in Figure 10 may be made from a tube of metal or the like with the seam unsealed. Portions of the tube will be cut from opposite sides of the connecting strips 56 and the connecting strips will be bent upwardly at an angle of the order of forty-five degrees to the main body portions 53. The hand-grip 55 is formed by bending the opposite free end portions of the intermediate part of the tube upwardly until their opposite free edges nearly meet. The flanges 54 are provided by widening the seam or slot at the bottom of the tube.

The form of the invention illustrated in Figures 10, 11 and 12 is adapted to be used with a box 57. The free end portions of the closure flaps 58 of the box 57 are folded over upon themselves as indicated at 59 to provide a wing or bead 60. The folded over portions 59 are secured together by staples or the like 61. In order to provide the wings or beads 60, the closure flaps 58 have a greater depth than that of the closure flap of a conventional box.

In the use of the form of the invention illustrated in Figures 10 to 13, inclusive, the closure flaps 58 are brought together with one hand of the user and the combined closure handle is slid over the closure flaps. The wings 60 will be received by the pockets formed by the main body portions 53 and the flanges 54. The combined closure and handle is slid into its operative position in a direction parallel to the bottom of the box 57 and its removal can only be effected by a similar sliding movement thereof. The wings or beads 60 may be formed by attaching strips of paper, wood or other suitable material to the closure flaps 58.

In the modified form of the invention illustrated in Figure 14, the handle is made from a piece of seamless tubing. The under surface of the opposite end portion 53^a of the tube are slit as at 53^b to form flanges 54^a. The intermediate portion of the tube is bent upwardly to form a substantially semi-circular hand-grip 55^a. The slits 53^b will facilitate the bending of the intermediate portion of the tube to form the hand-grip. In order to facilitate the formation of

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the flanges 54^a a tube with an unsealed seam may be used. The use of this form of the invention is similar to that described in connection with the modification shown in Figures 10, 11 and 12 of the drawing.

It is obvious that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claim:

What I claim is:

An improved combined handle closure for a container having closure flaps provided with wings comprising a handle having its intermediate portion bent upwardly to provide a hand-grip, the opposite end portions of the handle being bent upwardly to provide terminal abutments, the handle having bearing portions disposed between each of the abutments and the adjacent portion of the bent-up hand-grip, a pair of substantially U-shaped wing gripping members mounted upon each bearing portion, each wing gripping member comprising a pair of spaced apart substantially parallel arms, the free end portions of the arms being tightly wrapped about their respective bearing portions in frictional engagement therewith for preventing accidental rotation of the gripping members about the bearing portions but permitting rotation of said gripping members about the bearing portions through at least 180 degrees when desired, the intermediate portion of each gripping member being bent over upon its arms to provide a flange disposed in spaced parallel relation to the plane of said arms to define a pocket between said arms and said flange for the reception of one of the wings of the container closure flaps, the wrapped around portions of the arms of one wing gripping member of each pair of members being disposed outwardly of the wrapped around portions of the other wing gripping member of each pair of members to prevent independent axial movement of the arms on the bearing portions, said wrapped around portions of each pair of wing gripping members being confined between the adjacent abutment and the adjacent end of the bent-up hand-grip, each arm extending downwardly and outwardly from its bearing portion to a point intermediate the ends of the arm and then extending outwardly in a substantially horizontal plane.

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