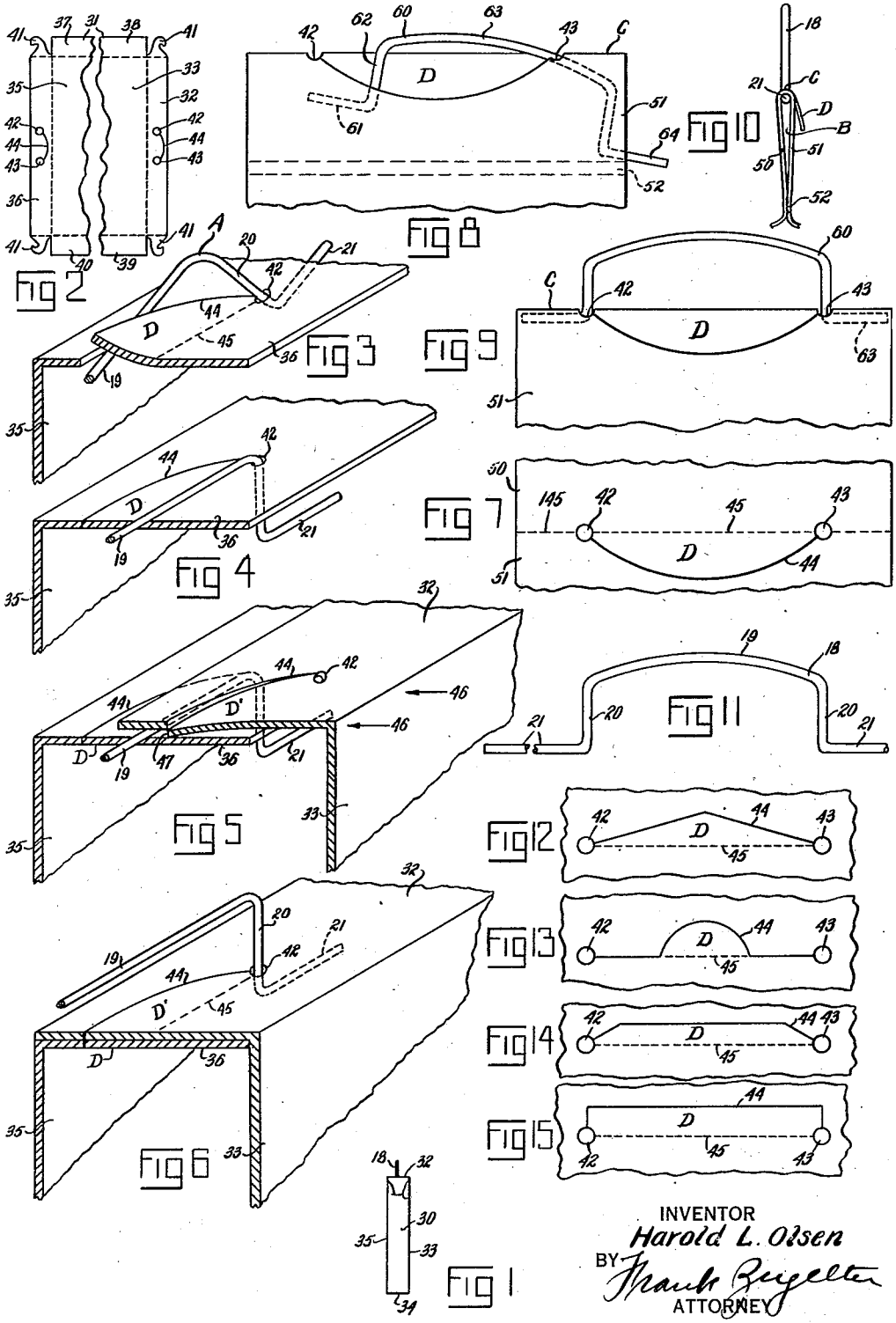
Nov. 19, 1940. H. L. OLSEN 2,222,358

HANDLE STRUCTURE

Filed July 20, 1938



INVENTOR
Harold L. Olsen
BY
ATTORNEY

Patented Nov. 19, 1940 2,222,358

UNITED STATES PATENT OFFICE

2,222,358

HANDLE STRUCTURE

Harold L. Olsen, Cincinnati, Ohio

Application July 20, 1938, Serial No. 220,229

2 Claims. (Cl. 229—52)

This invention relates to box and carton handles and more particularly to a method of attaching a wire handle to a box structure.

An object of the invention is to provide a box structure to which a wire handle may be quickly and easily affixed.

A further object of the invention is to provide in a box structure simple means for retaining a removable handle against accidental inward displacement.

These and other objects are attained by the means described herein and disclosed in the accompanying drawing, in which:

Fig. 1 is an end view of a box and handle embodying the present invention.

Fig. 2 is a fragmentary plan view of a flat blank so formed for making a collapsible box embodying the invention.

Figs. 3, 4, 5, and 6 are sectional fragmental views showing the progressive steps of a handle being attached to the box.

Fig. 7 is a fragmental view of a flat blank as formed for making a bottle carrier structure embodying the invention.

Fig. 8 is a side view of the upper portion of a bottle carrier structure showing a handle being inserted upward through the handle openings of the structure.

Fig. 9 is a side plan view of the upper portion of a carrier structure embodying the invention, showing a handle associated with said carrier.

Fig. 10 is an end view of parts shown in Fig. 9.

Fig. 11 is a plan view of a handle made in accordance with the invention.

Figs. 12 to 15 are modified forms of handle-receiving flaps embodying the invention.

A handle 18 comprises a unitary metallic rod bent to form a central hand grip portion 19 having riser portions 20 depending from opposite ends thereof as clearly shown in Fig. 11. Each riser terminates in a divergent load-bearing terminus 21. A handle of this general type may be removably attached to any receptacle such as a box, Fig. 1, or to a bottle carrier structure, Fig. 9, as hereinafter fully disclosed.

Handles of the general type above described have been extensively used on various types of carrier structures being attached to said structures by inserting the hand grip portion upwardly through a cut or slit provided intermediate suitable riser receptive apertures. These slits have been straight linear cuts extending medially between the riser receptive apertures, and a handle having been inserted upwardly through such a slit was prevented from falling out of said slit by reason of the abutting relationship of the opposed edges of said slit. However, after use, the opposed abutting edges of such a slit become weakened and worn with the result that the handles easily fall out of such slit.

It is to provide a handle-receiving slit through which a handle may be removably secured but from which a handle cannot be accidentally displaced or removed that this invention is primarily directed.

A box 30 (Fig. 1) is assembled from a flat blank as 31 from any suitable material, such as cardboard or the like. Said box comprises a top 32, front 33 and bottom 34 which form, when properly folded, what is hereafter referred to as the outer or cover section, and rear wall 35 and inner top wall 36 form what is hereinafter referred to as the inner or base section. Suitable end walls 37, 38, 39, and 40 are engaged by suitable latching tongue members 41 in a manner old to the art whereby the inner and outer sections are completed, being hingedly connected together along common bottom section 34.

Two spaced apertures 42 and 43 are provided through outer top wall 32 and inner top wall 36, said apertures being connected by means of a through cut 44 the length of which is greater than the direct linear distance between apertures 42 and 43, which linear distance is denoted by broken line 45 hereinafter referred to as median line 45. As shown in Figs. 2 and 7, cut 44 may assume the shape of a segment of an arc or it may assume any of a variety of shapes such as shown in Figs. 12 to 15 inclusive. The important feature is to provide a flap D so proportioned whereby the area bounded by through cut 44 extends across median line 45 intermediate apertures 42 and 43, as clearly shown.

As clearly shown in Fig. 3, a handle 18 may be inserted upwardly under flap D through slit 44 of the base section whereby a handle corner A, formed by the intersection of hand grip portion 19 with a riser leg 20, is presented as shown. Hand grip portion 19 may then be grasped and pulled through slit 44 whereby riser portions 20 fall within apertures 42 and 43, whereby handle 18 assumes the position shown in Fig. 4. The outer or cover section of the box is then closed over the inner section by exerting an inward force on front wall 33 as indicated by the arrows 46, Fig. 5, whereby top 32 of the cover section is caused to fit over top 36 of the base section and over hand grip portion 19 of the handle 18. Flap D' of said cover section is depressed or urged downward against base top member 36 so that as

the cover section is further urged to the left the forward edge 47 of flap D' is free to pass under hand grip portion 19 of handle 18 so that said handle will be lifted up onto flap D' whereby the riser portions 20 are guided by the edge 44 of said flap to seat within apertures 42 and 43. Fig. 6 shows how the cover and base sections are aligned when in closed position with handle 18 attached.

It should be here noted, see Fig. 6, that flaps D and D', which are positioned one above the other, constitute a double thickness of stock and form a continuous surface beneath handle hand grip portion 19 which is in a vertical plane with median line 45 whereby the flaps provide an unbroken supporting area which extends across median line 45 interjacent apertures 42 and 43. In this way I have provided inexpensive means for effectively precluding handle 18 from accidentally dropping back into the box structure.

The closed box structure may be opened by moving the outer section to the right to uncover the inner section. This procedure results in handle 18 being freed from the cover section in the following manner: As the cover section is moved to the right to uncover the inner or base section, the divergent load-bearing members 21 bear against the under side of inner top member 36 and the hand grip portion 19 bears on the outer side of top member 32 with the riser portions 20 extending obliquely between the inner and outer sections. Further movement of the cover section to the right causes handle 18 to be neatly withdrawn from apertures 42 and 43 via slit 44 whereby the handle is freed from the outer section and deposited on the top 36 of the base section as shown in Fig. 4. In this manner the inner and outer box sections may be effectively and simply separated.

It should be noted that riser portions 20 act to lock the inner and outer sections together whereby the necessity for an auxiliary lock is unnecessary, although any suitable lock, such as the one disclosed in the Calahan Patent No. 575,775 may be associated with the box.

The same type of handle-supporting means may be adapted to the so-called bottle carrier cartons which usually are pentagonal in transverse section, having divergent top members which are extended upwardly to form an integral handle portion, or to form an apex to which detachable handles may be affixed.

Such bottle carriers are fabricated from a sheet of suitable fibrous material in a manner well known to the art. A fold line such as 45 (Fig. 7) is provided transversely of the carrier structure blank for defining apex C of an assembled carrier, Figs. 9, 10 and 11. Suitable spaced apertures 42 and 43 may be provided centrally of said fold line as clearly shown in Fig. 7. Said apertures are connected by means of a through cut 44 disposed entirely on one side of said fold line and of a length substantially greater than the length of median line 45 between said apertures whereby a flap D is provided extending across median line 45 being wholly disposed in top member 51.

The convergent top members 50 and 51 (Fig. 10) of the bottle carrier may be glued or otherwise fastened together transversely of said structure as at 52 whereby a pocket member B is provided defined by top wall 50, apex C, and top wall 51.

A suitable handle 60 may be introduced laterally into pocket B by inserting a load-bearing member as 61 therein. By urging flap D inward toward top wall member 50, riser leg 62 and a portion of hand grip 63 may be introduced upward and outward of flap D as clearly shown in Fig. 8. The protruding portion of hand grip 63 may be easily grasped and the handle risers positioned within apertures 42 and 43, as shown in Fig. 9. It should be noted that flap member D will have a tendency to spring forward and outward of top wall 51 whereby a substantial amount of material is disposed interjacent apertures 42 and 43 vertically below hand grip 63 whereby handle 60 is effectively prevented from being accidentally displaced inwardly of said carrier. If desired all but the hand grip portion 63 of the handle may be retracted inward of the structure without danger of the handle being disengaged from the carrier structure. When in such a retracted position the hand grip portion 63 is free to rest upon and be supported by the area of flap D interjacent apertures 42 and 43, the riser portions and load bearing termini extending inwardly of the carrier.

Handle 60 may be disengaged from said carrier structure by urging the handle downward or inward of the carrier as flap D is urged inward against top wall 50. By further moving said handle laterally to one side a load-bearing terminus as 64 will be exposed as shown in Fig. 8. By pulling said load bearing terminus transversely of the carrier the handle may be easily disengaged from the structure.

It should be noted that the flaps as herein disclosed do not become useless after a short period of use due to the fact that the weight of a handle is supported by a considerable and continuous area of material interjacent said apertures.

The length of the load-bearing termini 21 may be varied to accommodate the load to be carried, and in no way affects the interrelationship between the handle and flap members as hereinbefore disclosed.

In lieu of providing flaps such as D and D' in box structures which are in alignment, they may be disposed so as to extend on opposite sides of a median line, although the preferred form is as shown in the drawing.

What is claimed is:

1. In a cardboard box having an outer section and an inner section hingedly connected at one side thereof along a common edge, said outer section adapted to receive the inner section, the sections having at the opposite side thereof overlapping handle receiving flaps adapted to removably secure a pre-formed wire handle comprising a central hand grip portion, a pair of risers depending from opposite ends of the hand grip portion, and load bearing termini divergently extending from the ends of the risers, each of said flaps having a pair of spaced apertures interconnected by a slit of substantially greater length than the lineal distance between the apertures comprising a pair, the apertures and slit of one flap coinciding in operative position with the apertures and slit of the other flap, and the slit of the outer flap extending from its apertures toward the free edge of the flap, the tongues defined by said slits providing a double thickness of material under the hand grip portion of the handle and preventing the handle from falling into the box.

2. The combination with a receptacle having a pair of convergent top members which meet along a common apex, of a pair of spaced aper-

tures having their centers on said apex, a continuous through cut extending between said apertures, said cut being of substantially greater length than the distance between said apertures measured along said apex to form a flap member wholly disposed on one side of said apex and in one convergent top member, a handle for detachable mounting in said apertures, said handle comprising a unitary metallic rod bent upon itself to form a central handgrip portion, a pair of risers depending from opposite ends of said handgrip portion and load-bearing termini divergently extending from the ends of the risers, said handle being adapted to be removably secured to said receptacle by inserting the handgrip portion upwardly between said flap and that convergent top member in which said flap is wholly disposed, to locate said riser portions one each in one of said apertures, said flap portion extending beneath the handgrip portion of said handle intermediate said spaced apertures to preclude accidental displacement of said handle inwardly of said receptacle.

HAROLD L. OLSEN.