

Nov. 6, 1934.

P. F. BOEYE

1,979,956

BOX

Filed Dec. 18, 1930

2 Sheets-Sheet 1

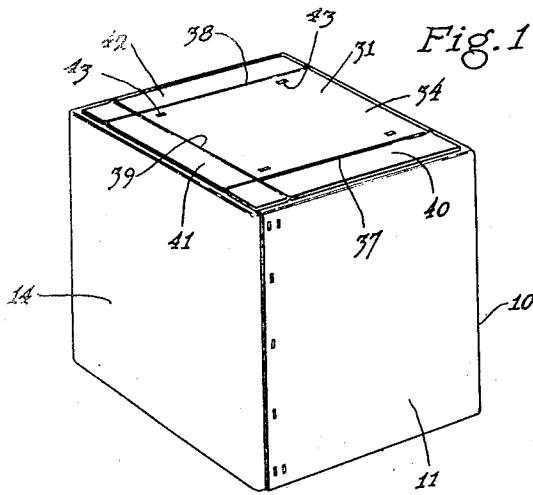
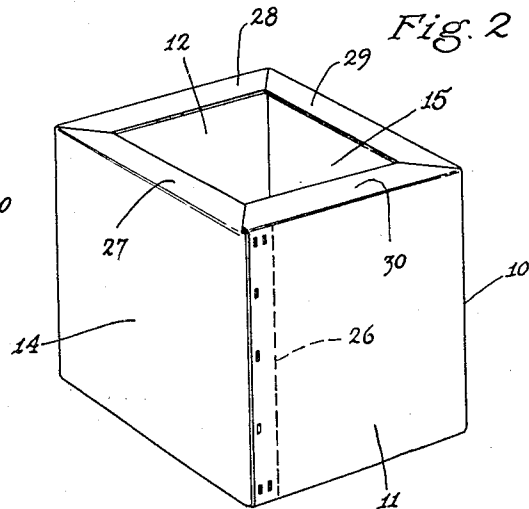
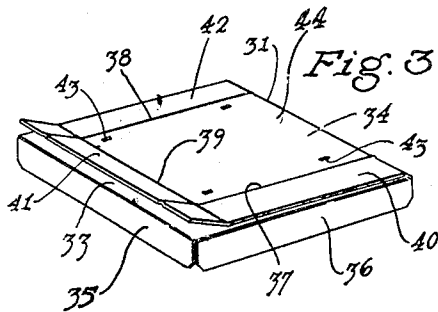
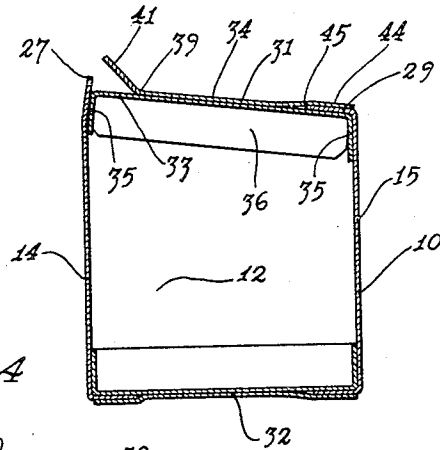


Fig. 4

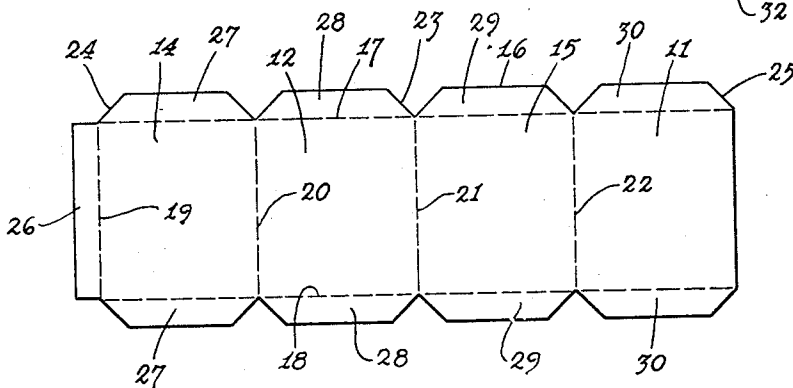


Fig. 5

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2 Sheets-Sheet 2

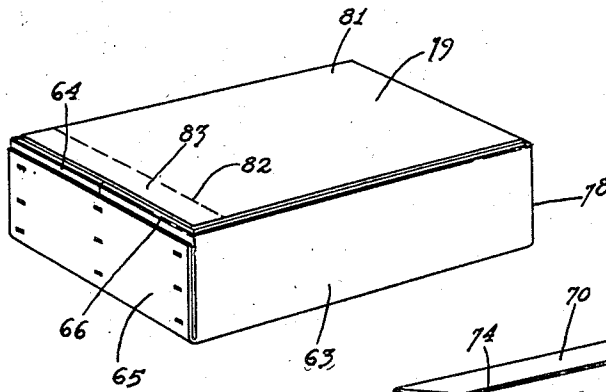


Fig. 6

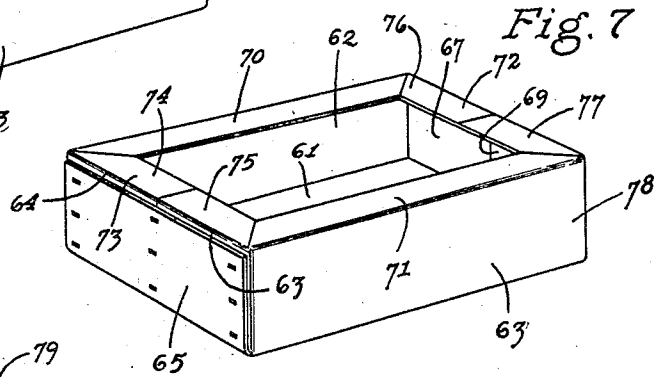


Fig. 7

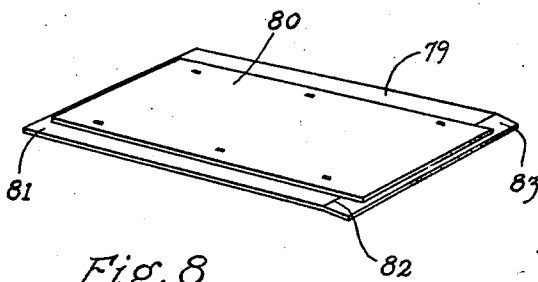


Fig. 8

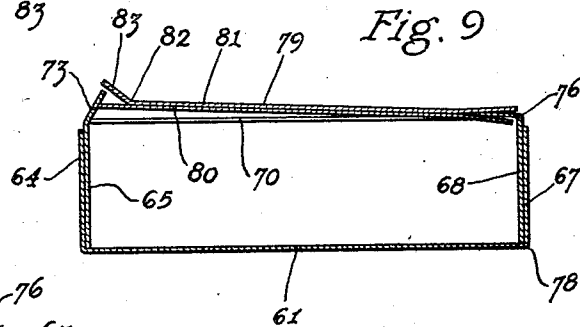


Fig. 9

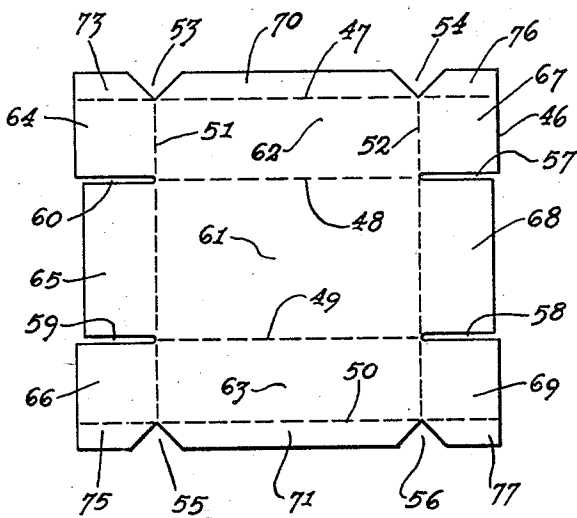


Fig. 10

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UNITED STATES PATENT OFFICE

1,979,956

BOX

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13 Claims. (Cl. 229—23)

My invention relates to boxes and has for an object to provide a box having an extremely rigid closure for closing the open portion of the box.

Another object of the invention resides in providing a box having double thicknesses of material at the corners of the box between the body of the box and the closure therefore.

A still further object of the invention resides in constructing the box with a body open at the upper portion thereof and provided with inwardly extending flaps bent from the free edges of said body.

A feature of the invention resides in mitering the corners of the flaps and in further providing a closure with members adapted to hold the flaps at the corners thereof in a common plane to cause the mitering edges of the said flaps to abut one another.

An object of the invention resides in constructing the closure for the box with a cover adapted to underlie the flaps on the body of the box and with a top adapted to overlie the flaps on the body of the box.

Another object of the invention resides in securing said cover and top together at localities disposed inwardly of the flaps on the body of the box.

A still further object of the invention resides in scoring said top along lines parallel to some of the edges thereof to provide tabs of a width corresponding to that of said flaps.

A feature of the invention resides in leaving said cover and tab intact along one of the edges thereof to permit of the insertion of one of the flaps of the body therebetween.

An object of the invention resides in constructing said closure with the tabs thereof foldable along said score mark to permit of the insertion of the flaps of the body between the cover and tabs.

Another object of the invention resides in constructing said cover with flaps adapted to lie along the inner surface of the walls of the body of the box.

A still further object of the invention resides in constructing two of said flaps in two sections and in utilizing the cover and top of the closure for holding said sections in common planes to cause the meeting edges thereof to abut one another.

A feature of the invention resides in constructing the cover of a length equal to the distance between the end walls of the box and of a width equal to the distance between the facing edges of the flaps on the side walls of the box, and in scoring the top along a single line parallel to

the end of the box to provide a single tab for the reception of the corresponding end flap of the body of the box.

Other objects of the invention reside in the novel combination and arrangement of parts and in the details of construction hereinafter illustrated and/or described.

In the drawings:

Fig. 1 is a perspective view of a box illustrating an embodiment of my invention.

Fig. 2 is a perspective view of the body of the box with the closures therefore removed.

Fig. 3 is a perspective view of one of the closures for the box removed therefrom.

Fig. 4 is an elevational sectional view taken through the center of the box and showing the method of applying the closure thereto.

Fig. 5 is a developed view of the blank used for making the body of the box.

Fig. 6 is a view similar to Fig. 1 showing another form of the invention.

Fig. 7 is a perspective view of the body of the box shown in Fig. 6 with the closure thereof removed.

Fig. 8 is a perspective view of the closure of the box used in the form of the invention shown in Fig. 6.

Fig. 9 is a view similar to Fig. 4 of the box shown in Fig. 6.

Fig. 10 is a developed view of the blank from which the body of the box shown in Fig. 6 is constructed.

In the shipment of fairly heavy commodities in paper boxes, considerable stress at the corners of the box occurs which frequently results in breakage of the box at such localities. Furthermore considerable weight is frequently placed upon the closure for such boxes. The present invention provides a box which may be constructed with reinforced corners and with a top of double thickness whereby sufficient rigidity and strength is procured and whereby these disadvantages are greatly overcome.

The box shown in Fig. 1 comprises a body having side walls 11 and 12 and end walls 14 and 15, said body being open at the top and bottom thereof. The body 10 may be constructed of a single blank indicated at 16 in Fig. 5 which is scored along two parallel lines 17 and 18 and along a number of transverse lines 19, 20, 21 and 22 to divide the box into various sections forming the end walls 14 and 15 and the side walls 12 and 11, previously referred to and a flap 26 at the end of wall 14. The marginal portions of the blank 16 are formed with V-shaped cuts 23 along

the edges thereof at the score marks 20, 21 and 22 and with beveled cuts 24 and 25 at the ends of said marginal portions, which divide the same into a number of flaps 27, 28, 29 and 30.

5 In the construction of the body 10 of the box, the blank is folded along the various score marks 19, 20, 21 and 22 and the walls of the box secured together through the flap 26 which may be stapled, glued or otherwise attached to the ad-
10 joining wall 11. After the walls have been fastened together the flaps 27, 28, 29 and 30 in both the upper and lower ends of the box may be folded inwardly as shown in Fig. 2 to lie in the planes of the top and bottom of the box. Due to the
15 shape of the cuts 24 and 25, said flaps become mitered along the corners thereof when so folded.

The body 10 of the box is provided with an upper closure 31 and a lower closure 32 adapted to close the open portions of the box. These closures being identical in construction, only the closure
20 31 will be described in detail.

The closure 31, as best shown in Fig. 3, comprises a cover 33 and a top 34 secured thereto. The cover 33 is of a size such that the same may
25 snugly fit within the walls 11, 12, 14 and 15 of the body of the box and is constructed with flanges 35 and 36 along the edges thereof, adapted to be bent at right angles to the cover 33. These flanges lie within the body of the box, when the closure is properly applied thereto, and beneath the various
30 flaps 27, 28, 29 and 30 of the box proper. The top 34 of closure 31 is scored along two parallel lines 37 and 38 which are parallel to the edges of said top and which are spaced a distance therefrom equal to or slightly greater than the
35 width of the flaps 28 and 30. A similar score mark 39 parallel to another edge of the box and spaced a distance therefrom corresponding to the width of the flap 27 extends completely across the top 34 and intersects the score marks 37 and
40 38. By means of these score marks, the top 34 is formed with three tabs 40, 41, and 42 which are individually foldable out of the plane of said box for a purpose to be presently more fully described. The top 34 is stapled as designated at 43
45 or glued or otherwise secured to the cover 33 inwardly of the score marks 37, 38 and 39 and at the unscored edge of the box, a distance inwardly therefrom equal to or greater than the width of the flap 29, to leave the tabs 40, 41, and 42 and a
50 similar unscored portion 44 at one end of the closure free from the cover 33.

In the application of the top 31 to the body 10 of the box, the following procedure is adopted.
55 All of the flaps 27, 28, 29 and 30 of the body 10 are raised from the position shown in Fig. 2 and the flap 29 inserted into the space between the unscored portion 44 of the top 34 and the cover 33 which I have indicated at 45 in Fig. 4. The
60 various flanges 35 and 36 of the cover 33 are then folded inwardly as shown in Fig. 3 and the entire closure swung on the flap 29 through the score mark 17 thereof, to bring the flanges 35 and 36 within the flaps 28, 27 and 30 and within the interior of the box. When the closure approaches
65 closing position, flap 41 is bent outwardly along score mark 39 as shown in Figs. 3 and 4. As the closure is brought in place and the flange 35 thereof passes the flange 27 the latter named
70 flange is folded over the cover 33 to cause the same to lie in the plane of the top 34. The tab 41 is then folded down flat upon the flap 27 to hold said flap in place. Both of the tabs 40 and 42 are next swung outwardly along the score marks 38 and 37 as hinges. Such swinging of the tabs 40

and 42 holds the tab 41 in proper position and while tabs 40 and 42 are so swung the flaps 28 and 30 are inserted between said tabs and the cover 33 and said tabs brought back into the plane of the closure. After all of the flaps 27, 28, 29 and 30 become lodged in between cover 33 and top 34, the box may be bound by cord or metal straps as is now customary practice which holds the various parts rigidly secured together.

The box constructed as disclosed and with the closure applied thereto in the manner prescribed, forms an extremely rigid construction. From an inspection of Fig. 4, it will be noted that the corners of the box at the upper and lower portions of the body all have double thickness of material and also that the closures of the box are of double thickness thereby greatly reinforcing and stiffening the box so that the same will stand greater abuse than would be possible where a single thickness of material was employed. The closure, after the strap or cords have been removed, may be readily detached and reapplied as frequently as desired until the contents of the box have been consumed. The flaps formed on the body of the box are completely concealed and the edges of the body protected through the closure of the box, so that considerable protection is afforded the body of the box from the weight of other substances which may come in contact with the bottom closure of the box when the box is in use. Inasmuch as the closures are both removable and interchangeable, other closures may be substituted in place of those which may become damaged and the body of the box used over again.

The form of the invention shown in Figs. 6 to 10 differs from that shown in Figs. 1 to 6 principally in that a box with an integrally constructed bottom is shown as compared with the other form of box which is open at both the top and bottom. The body of this box is designated at 78 and is constructed from a blank indicated at 46 and illustrated in Fig. 10. This blank is scored along four longitudinal lines 47, 48, 49 and 50 and along two transverse lines 51 and 52 which intersect one another as shown. The score lines 47 and 50 are spaced from the edges of the box a distance equal to the width of the flaps to be formed thereon while the other score lines are spaced so as to give the desired height to the side walls and width to the bottom of the box. The blank 46 is constructed with four V-shaped cuts 53, 54, 55 and 56, which extend inwardly from the side edges of the blank at the score marks 51 and 52 and which extend up to the score marks 47 and 50. In addition to these cuts, the blank is further severed along lines 57, 58, 59 and 60 which coincide with the score lines 48 and 49 and which extend from the end edges of the blank up to the score marks 51 and 52. By means of the various score marks and cuts, the box is divided to form a bottom 61, two sides 62 and 63, complementary end sections 64, 65, and 66 situated at one end of the box, and corresponding end sections 67, 68 and 69 situated at the other end of the box. The various parts of the box may be folded along the various score lines above mentioned and the end sections folded into overlapping position and secured together to take the form shown in Fig. 7. By means of the score lines 47 and 50 and the cuts 53, 54, 55 and 56, the upper portion of the body of the box is provided with flaps 70 and 71, adapted to be folded inwardly from the sides 62 and 63 of the box and to form flaps 72 and 73 adapted to be folded inwardly from the ends of

the box in the plane of the flaps 70 and 71. The flaps 72 and 73 are formed with sections designated at 74, 75, 76 and 77 of which the sections 76 and 77 lie in continuation of one another and the sections 74 and 75 also lie in continuation of one another. When these various flaps are folded, as shown in Fig. 7, the corners thereof become mitered and all of said flaps and flap sections lie in a common plane.

In conjunction with the body 78 of the box, a closure 79 is employed which is shown in detail in Fig. 8. This closure comprises a cover 80 and a top 81 overlying the same similar to the closure 31. The top 79 is the same as in the other form of the invention, while the cover 80 is of the same length as the box but is of a width equal to the distance between the two flaps 70 and 71 when the same are folded inwardly as shown in Fig. 7. It is to be further noted that no flanges are formed on the cover 80. By the construction of the closure 79 as specified, only one score mark 82 is required on the top 81 which provides a single tab 83 along one of the ends of the closure.

The application of the closure 79 to the box 78 is quite similar to that described in conjunction with the other form of the invention. In this case however, flaps 70 and 71 need not be turned upwardly and it only becomes necessary to raise and fold the flap 83 in order to attach the closure to the body of the box proper. When the closure has been properly applied to the box, the box is bound with cord or metal bands as described with the other form of the invention.

In the form of the invention shown in Figs. 6 to 10 inclusive, an extremely simple and inexpensive box is provided which is exceptionally rigid considering the amount of material employed in the same. The closure for the box may be removed and applied as required and being constructed of double thickness is sufficiently strong to permit of stacking of the boxes and piling of other articles upon the closure. The closure of this form of box is somewhat easier to apply than that of the other form of the invention though less support is had for the closure along two of the sides of the box.

Changes in the specific form of my invention, as herein disclosed, may be made within the scope of what is claimed without departing from the spirit of my invention.

Having described my invention, what I claim as new and desire to protect by Letters Patent is:

1. A box comprising a body open at the upper portion thereof and provided with inwardly projecting flaps along the edges of the upper open portion of the box, a closure for the box including a cover adapted to underlie said flaps, and a top adapted to overlie all of said flaps, said top being scored along lines parallel to some of the edges thereof to provide tabs of a width corresponding to that of said flaps, said top being secured to said cover inwardly of said score lines, said tabs being foldable along said score lines to clear said flaps during the insertion thereof between said tabs and cover.

2. A box comprising a body open at the upper portion thereof and provided with inwardly projecting flaps along the edges of the upper open portion of the box, a closure for the box including a cover adapted to underlie said flaps, and a top adapted to overlie said flaps, said top being scored along lines parallel to three of the edges thereof to provide three tabs of a width corresponding to that of said flaps, said top being secured to said cover inwardly of said score lines,

the portion of said cover and top adjacent the unscored edge of said top being separable to receive one of the flaps, said cover being foldable along said score lines to clear said flaps during the insertion thereof between said tabs and cover.

3. A box comprising a body open at the upper portion thereof and provided with flaps bent inwardly from the walls of said body, said flaps being mitered at the corners thereof, and a closure having members engaging said flaps both on the under and upper side thereof to hold said flaps in a common plane so as to cause the mitered edges thereof to abut one another.

4. A box comprising a body open at the upper portion thereof and provided with flaps bent inwardly from the walls of said body, said flaps being mitered at the corners thereof, and a closure having a cover engaging said flaps on the under side thereof, and a top secured to said cover and engaging said flaps on the upper side thereof, said cover and top serving to retain said flaps in a common plane to cause the mitered edges thereof to abut one another.

5. A box comprising a body open at the upper portion thereof and provided with inwardly projecting flaps along the edges of the upper open portion of the box, a closure for the upper portion of the box comprising a cover of a length equal to the distance between the end walls of the box and of a width equal to the distance between the flaps on the side walls of the box, said cover being adapted to underlie the flaps on the end walls of the box, a top secured to said cover and adapted to overlie said flaps, said top being scored along a line parallel to one of the ends of said cover to provide a tab, the flaps on one of the end walls of said box being insertable between the end portions of the cover and top, said tab being foldable along said score mark to clear the other end flap during the insertion of said flap between it and said cover.

6. A box comprising a body having side and end walls and being open at the top, said end walls being formed with sections folded over from the side walls of the box and meeting intermediate the ends of the end walls, said folded over sections and said side walls of the body of the box having inwardly extending tabs, the tabs from said end wall sections meeting one another intermediate the ends of said end walls, a closure for the open portion of said box comprising a cover and a top overlying said cover, said top and cover having portions adapted to envelop the flaps on the end walls of said body and to hold the meeting edges of said flaps in abutting relation.

7. A box comprising a body open at the upper portion thereof and provided with inwardly projecting flaps along the edges of the upper open portion of the box, a closure for the box including a cover adapted to underlie some of said flaps, and a top adapted to overlie all of said flaps, said top being scored along a line parallel to one of the edges thereof to provide a tab of a width corresponding to that of one of said flaps, and leaving the top intact along the edge thereof opposite said scored edge, said top being secured to said cover at the inward portion thereof, the portion of said cover and top adjacent the unscored edge of said top being separable to receive one of the flaps, said cover being folded along said score mark to clear the opposite flap during the insertion thereof between said tab and cover.

8. A box comprising a body open at the upper portion thereof and provided with inwardly projecting flaps along two of the facing edges of the

- upper open portion of the box, a closure for the box including a cover and a top overlying one another, said cover and top being secured together inwardly from the edges of the closure
- 5 corresponding with said flaps to provide pockets therebetween, said top being scored at one end along a line extending across the same to form a tab foldable along the line of scoring, the other end of said top remaining intact to yieldingly
- 10 receive one of said flaps and to frictionally engage the same and hold said flap in place whereby the closure may be swung about said flap as a hinge, said tab being foldable outwardly to permit of the insertion of the other flap in the pocket defined thereby.
9. A box comprising a body open at the upper portion thereof, and provided with inwardly projecting flaps along the upper edges of the sides and ends thereof, a closure for the box comprising
- 20 a cover of substantially the same dimensions as the length and width of the box and adapted to underlie all of said flaps, and a top of substantially the same dimensions adapted to overlie all of said flaps, said top being scored along
- 25 lines parallel to some of the edges of the walls of the box and inwardly from the inner edges of the flaps to provide tabs, said top being secured to said cover inwardly of said tabs, said score lines crossing one another and extending up to the
- 30 edges of adjoining tabs to form common corners for the tabs and to provide hinges for each of said tabs whereby any of said tabs together with the adjacent common corners may be swung about its hinge when the adjacent tabs lie in the plane
- 35 of the top to receive the corresponding flaps.
10. A box comprising a body open at the upper portion thereof, and provided with inwardly projecting flaps along the upper edges of the sides and ends thereof, a closure for the box comprising
- 40 a cover extending across the open end of the box and disposed within said flaps and beneath the same, said cover having flanges extending from the edges thereof and following along the inner surfaces of the side and end walls of the box, a top overlying all of said flaps, said top being scored along lines parallel to some of the edges
- 80 of the box and inwardly from the inner edges of the flaps to provide tabs foldable away from the cover to receive the flaps on the box, and means for securing said top to the cover inwardly of said flaps.
11. The combination of a container comprising
- 85 a sheet of cardboard including a body having right angularly disposed walls, narrow flaps turned inwardly from said walls at one end of said body, said flaps having beveled mutually engaging corners to provide a continuous flange, and a
- 90 two-ply cover closing said end and including contacting marginal portions which embrace opposite faces of said flange throughout the length of said flange.
12. In combination with a box open at one end and having a plurality of juxtaposed walls, flanges on the ends of said walls bent inwardly therefrom, said flanges being mitered at their adjoining ends, said ends of the flanges lying in the same plane,
- 95 a closure for said box comprising two sheets of material overlying one another, means for securing said sheets together inwardly of the edges thereof, said sheets forming pockets therebetween to receive said flanges and serving to hold said flanges in the same common plane.
- 100 13. In combination with a box open at one end and having a plurality of juxtaposed walls, flanges on the ends of said walls bent inwardly therefrom, said flanges being mitered at their adjoining ends, said ends of the flanges abutting one another, a
- 105 closure for the box comprising two sheets of material overlying one another, means for securing said sheets together inwardly of the edges thereof, said sheets forming pockets therebetween to receive said flanges and serving to hold the ends
- 110 of said flanges in abutting relation.
- PAUL F. BOEYE.

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