

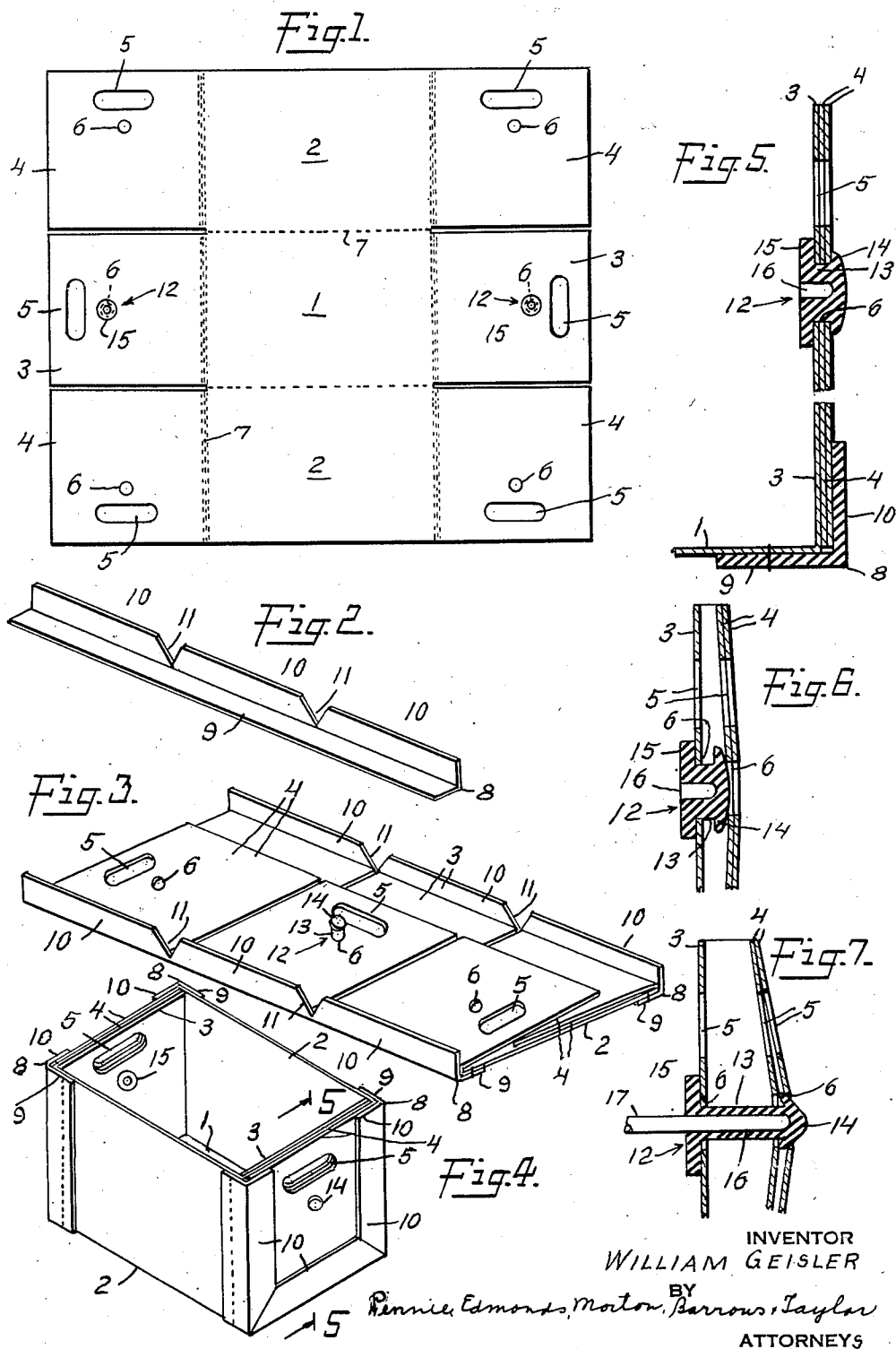
May 7, 1957

W. GEISLER
PACKING CASE

2,791,366

Filed Sept. 20, 1951

2 Sheets-Sheet 1



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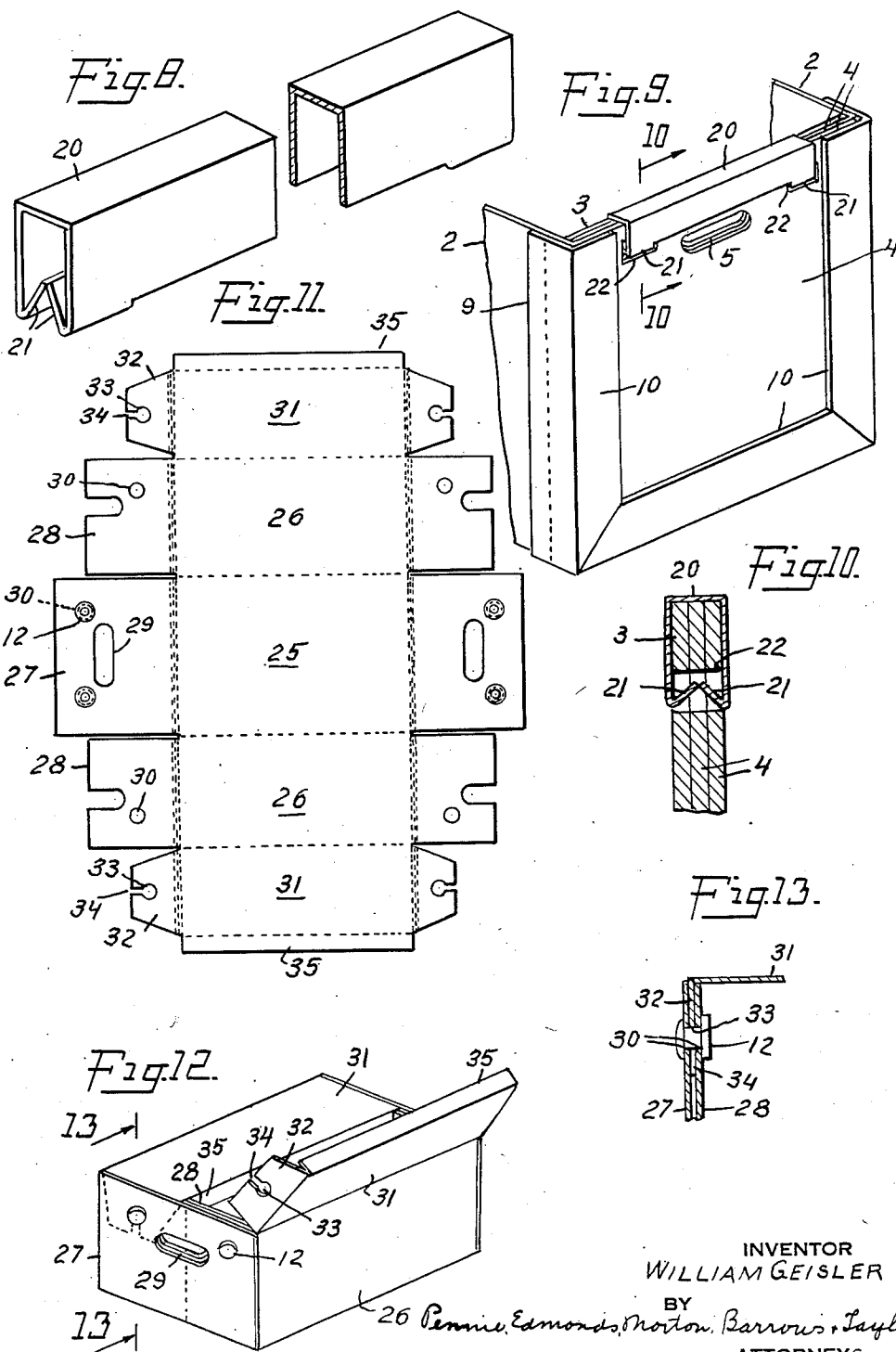
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2 Sheets-Sheet 2



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PACKING CASE

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3 Claims. (Cl. 229—35)

This invention relates to packing cases and has for its principal object to provide a paperboard case for use as a substitute for wooden cases in handling beverage bottles and the like, and this application is a continuation in part of my prior application Ser. No. 82,749, filed March 22, 1949, now abandoned.

In my said prior application I have disclosed a packing made from fiberboard and reinforced with rubber angles at the vertical corners to reinforce the case, add to its stacking strength and for other purposes all as fully described in said prior application.

In the case disclosed in my prior application the rubber angles are stitched or riveted along one side to the bottom and side walls of the case adjacent the corners before the case is erected and after the case is set up the other sides of the angles are stitched or riveted to the adjacent overlapped end flaps. A case so constructed is strong, rigid and otherwise suitable for handling beverage bottles and like loads, but is open to the objection that the user in order to store the cases in knock-down condition had to stitch or rivet the cases after erection, thereby requiring the installation of a stitching machine in the user's plant and the instruction of an operator in its use.

By the invention of the present application this stitching of the erected case is eliminated and a pasting means provided which may be quickly applied by unskilled labor and which provides a case as strong and durable as the stitched case of my prior application. A further object of the invention is to provide a fastening which may be removed without damage to the case so that the case may be folded flat and returned for reuse thereby greatly reducing shipping and storage costs.

Other objects of the invention will appear from the following drawings and specification wherein I have illustrated a preferred embodiment of my invention and certain modifications all as hereinafter fully described.

In the said drawings:

Fig. 1 is a plan view of the paperboard blank used in making my improved packing case;

Fig. 2 is a perspective view of one of the rubber reinforcing pieces used in the manufacture of the case;

Fig. 3 is a perspective view showing the case folded flat for shipment;

Fig. 4 is a perspective view of the erected case;

Fig. 5 is a sectional view on an enlarged scale showing my improved fastening means;

Figs. 6 and 7 are detailed views similar to Fig. 5 showing the method of applying my improved fastening means;

Fig. 8 is a perspective view of an alternate form of fastening device;

Fig. 9 is a detail view showing the fastening of Fig. 8 in place;

Fig. 10 is a sectional view on line 10—10 of Fig. 9;

Fig. 11 is a plan view of the cut and scored blank used for making a different form of case;

Fig. 12 is a perspective view of the erected case made from the blank shown in Fig. 11; and

Fig. 13 is a sectional view on line 13—13 of Fig. 12.

Referring to the drawings, particularly to Fig. 1, 1 indicates the position of the blank which forms the bottom wall of the case and 2, 2, the side walls.

The walls 1 and 2 have end flaps, 3 and 4, respectively, at each end, all the flaps being of an area coextensive with the dimensions of the ends of the case, when the side walls 2 are raised to vertical position so that the end walls of the case are formed throughout of three thicknesses of paperboard thereby adding greatly to the strength and stiffness of the case.

The end flaps 3 and 4 are preferably provided with hand holes 5 and are also provided with round holes 6 positioned to register with each other when the case is erected as shown in Fig. 4. The holes 5 and 6 may be cut in the blanks at the same time that the blanks are cut and scored to provide the flaps and fold lines 7. The fold lines between the end flaps 3 and 4 and the bottom and side walls of the box are preferably formed by a triple score as shown in Fig. 1 whereby the flaps 3 and 4 may be overlapped and lie flat one against the other throughout their entire area.

To strengthen and reinforce the case I preferably provide each end of the case with a rubber reinforcing strip 8 of angular cross-section. The strip 8 is shown in Fig. 2. It consists of one continuous side 9 which is stitched as shown in Figs. 3 and 4 along the ends of the bottom and side walls 1 and 2 with the corner of the angle in alignment with the outermost of the triple score lines 7 between the end flaps and the side and end walls. The other side of the strip 8 is divided into three sections 10 of equal length separated by V-notches 11, so that the side walls 2 may be folded to positions at right angles with the bottom wall 1 when the carton is erected.

The strips 8 are preferably fastened to the paperboard blank by sewing with cotton or linen thread instead of by metal stitching as described in my above-mentioned pending application. I have found that metal stitches tend to cut the paperboard particularly if the board is somewhat softened by the absorption of moisture whereas the cotton and linen thread makes a permanent fastening of equal strength which does not tear no matter how roughly the case be handled.

The strips 8 are readily fastened to the blank by means of a sewing machine. In this operation the end flaps 3 and 4 are raised to vertical position from the position shown in Fig. 1, the strips 8 are placed in position under the corners and the assembled blank and strips run through the machine. A machine with two sewing heads may be used with advantage for this operation.

After the strips 8 are sewn to the blank the end flaps 3 and 4 are folded down flat as shown in Fig. 3 in which condition the cases may be stored and shipped. The fastening "buttons" 12 which will be later described, may be placed in the holes 6 in the end flaps 3 at the time the strips 8 are attached so that each case will be complete and ready for erection.

The "buttons" 12 are shown in detail in Figs. 5, 6, and 7. They are of molded rubber of a shape similar to an ordinary collar button. The shank 13 is of a length between the adjacent faces of the heads 14 and 15, equal to the combined thickness of the three end flaps. The shank is formed with a central bore 16 which extends through the head 15 but not the head 14. As stated above the buttons are preferably assembled in the flap 3 when the cases are made. This is easily accomplished by placing a rod 17 in the bore 16 and stretching out the shank 13 (see Fig. 7) thereby so reducing the diameter of the shank and head 14 that the latter may be thrust through the hole 6 in the flap 3. When the

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rod 17 is withdrawn the "button" returns to its normal shape.

When the case is to be used it is erected by first lifting the end flaps from the position shown in Fig. 3 to vertical position. The side walls 2 are then raised to vertical position thus bringing the end flaps 4 into overlapping relation with the end flap 3, with the end flap 3 innermost. As the case is squared up the bottom and side edges of the flaps 4 fit in between the flap 3 and the adjacent portion 10 of the rubber strip 8, the space between the flap 3 and the part 10 being just sufficient, when the flap 3 is folded on the innermost of the three score lines to receive the edges of the other flaps. When fully squared up the holes 6 in the flaps 4 will overlie the buttons 12 as shown in Fig. 6. The rod 17 is pushed into the bore 16 of the button as shown in Fig. 7 thereby reducing the shank 13 and head 14 in diameter so that the head 14 can be thrust through the holes 6 in the flaps 4. When the rod 17 is withdrawn the button contracts to the position shown in Fig. 5, thus fastening all the flaps together and maintaining the case in squared up position.

Instead of using the "buttons" 12 to fasten the flaps together I may use a metal channel member 20 such as shown in Figs. 8, 9, and 10.

The channel 20 is of a length to reach from the rubber strip at one side of the box to the strip at the other side thus serving to cover the greater portion of the edges of the end flaps 3 and 4 and to stiffen the ends of the case so that a fully loaded case may be picked up by one hand hold without causing the case to bulge.

For holding the channels 20 in place and facilitating the application of the channels short upwardly inclined tongues 21 are provided at each end, which serve, as the channel is placed over the upper edges of the end flaps, to spread the edges of the channel so that it may be easily pushed into place.

Registering holes 22 are formed in the end flaps 3 and 4 in position to receive the tongues 21 when the channels are in place and thereby prevent the removal of the channels and also hold the flaps 3 and 4 against relative lateral movement.

In Figs. 11, 12 and 13 I have shown a case for handling light loads for which no reinforcing is required. This case comprises a bottom wall 25, side walls 26 and end flaps 27 attached to the ends of the bottom wall 25 and end flaps 28 attached to the ends of the side walls 26. The case is wider than it is high and consequently the end flaps 28 are not of the same dimensions as the flaps 27 but instead are cut off to a width half that of the flaps 27 so as not to overlap when the case is erected.

As shown the end flaps 27 are provided with hand holes 29 and holes 30 for "buttons" 12 at both ends of the hand holes. The case is also preferably provided with top flaps 31 each of which has end flaps 32 adapted when the case is closed to project between the flaps 27 and 28 and engage the neck of the "button" 12, for which purpose the flaps 32 are provided with holes 33 and slots 34 connecting the holes with the edges of the flaps. The slots 34 are widened at their outer ends to receive the shanks of the buttons 12 as the top flaps are closed. The hollow shanks will be compressed by the narrow portions of the slots 34 as the flaps are closed and will expand into the holes 33 when the flaps are in fully closed position thus holding the case securely closed.

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The top flaps 31 may also be provided with edge flaps 35 when the case is used for shipping bottles and the like which flaps serve to stiffen the case and hold it in shape.

If it is desired to seal the case a strip of gummed tape may be placed over the meeting edges of the top flaps.

In the foregoing specification and accompanying drawings I have disclosed certain preferred embodiments of my invention but it is to be understood that my invention is not limited to the construction disclosed except in so far as the elements thereof are recited in the following claims.

I claim:

1. A collapsible packing case comprising a sheet of paper board cut and scored to provide integral bottom, side and end walls, with the end walls consisting of rectangular flaps projecting from the ends of the bottom and side walls with score lines at the base of the flaps, said flaps being shaped to overlap when the case is erected with the side edges of the flaps attached to the side walls aligned with and adjacent the score lines of the end flaps attached to the bottom wall, and reinforcing angles having one side attached to the bottom wall adjacent said score lines with the other side of said angles spaced from the face of said bottom flaps a distance equal to the thickness of the overlapping end flaps whereby the edges of said flaps are held in engagement throughout their length with the inner face of the attached side of the angle and a detachable fastener near the upper edges of said overlapping flaps for holding said flaps in overlapping position and at right angles to their attached wall sections.

2. The packing case of claim 1 wherein the reinforcing angles are rubber.

3. The packing case of claim 1 wherein the fastening consists of an extensible rubber button extending through registering holes in the overlapping flaps, said button having two heads of greater diameter than the diameter of said holes engaging, respectively, opposite sides of the overlapping flaps and a connecting shank extending through said holes, said shank having an axial bearing opening through one of said heads and extending substantially the length of the shank.

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