H. L. ZIMMERMAN.

PACKING CASE.

APPLICATION FILED FEB. 26, 1920.

1,433,169.

Patented Oct. 24, 1922.

3 SHEETS—SHEET 1.

Fig. 1.

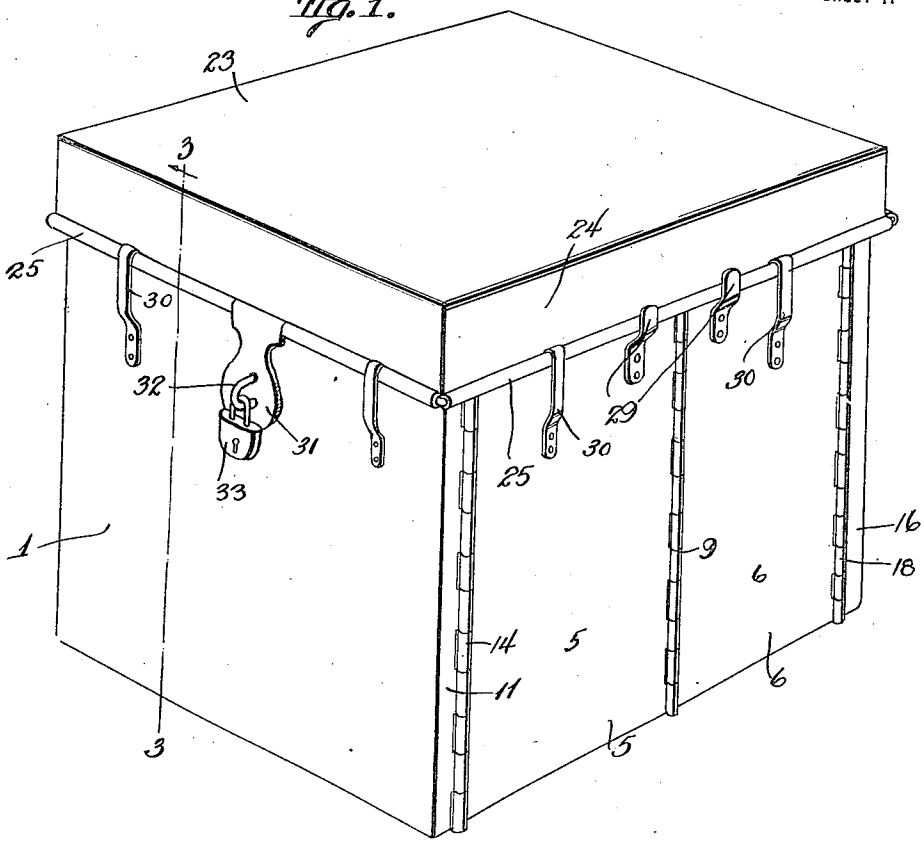
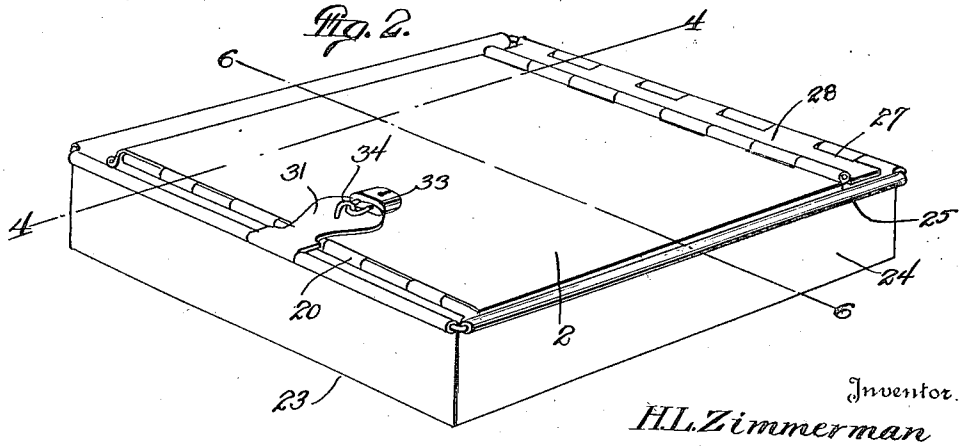


Fig. 2.



Inventor.

H.L. Zimmerman

By Edgar M. Kitchin

His Attorney.

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3 SHEETS—SHEET 2.

Fig. 3.

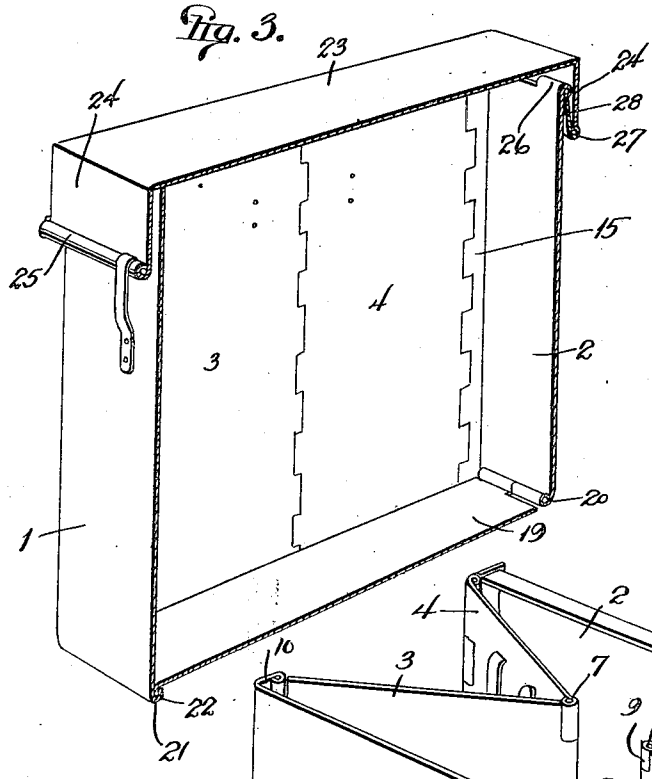


Fig. 4.

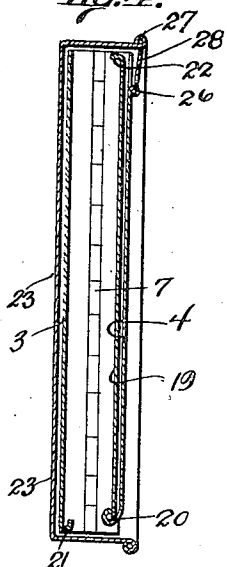


Fig. 5.

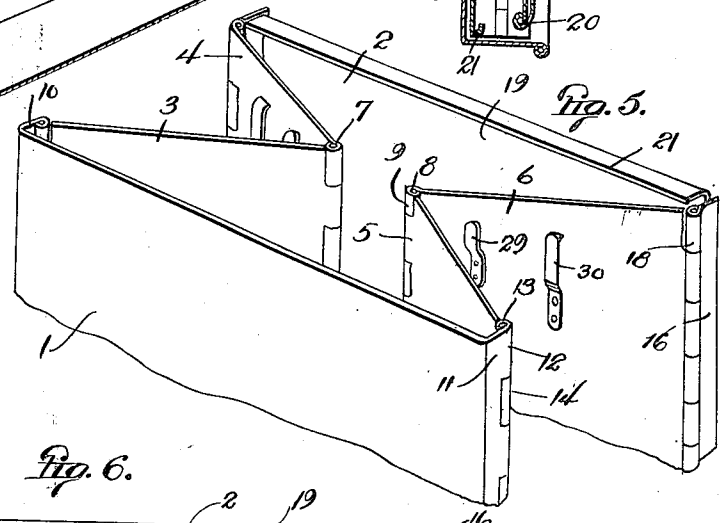
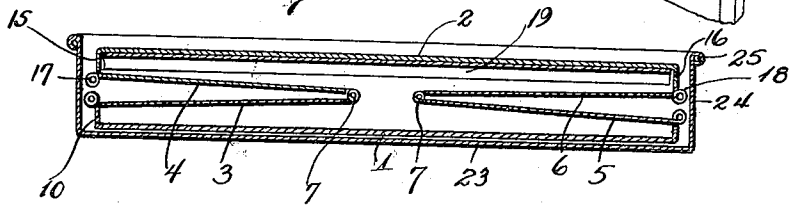


Fig. 6.



Inventor

H. L. Zimmerman

By Edgar M. Kitchin

His Attorney

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3 SHEETS—SHEET 3.

Fig. 7.

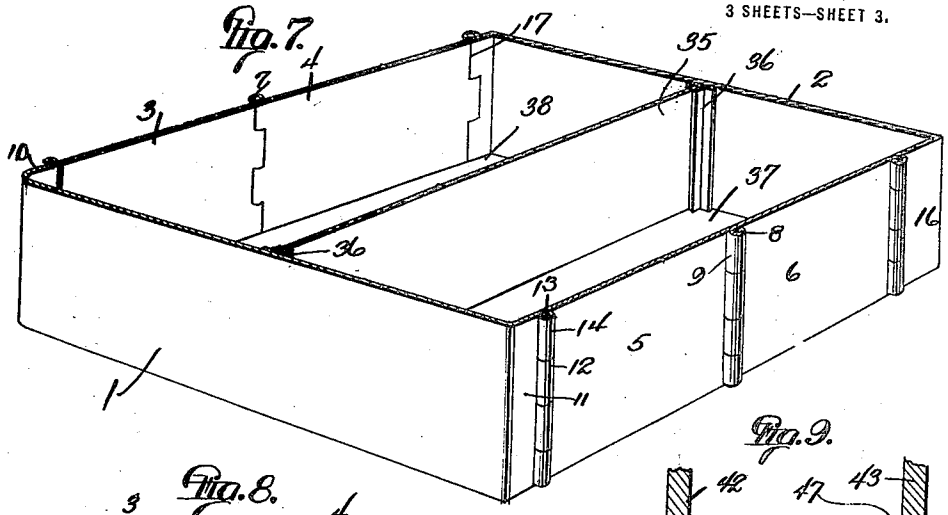


Fig. 8.

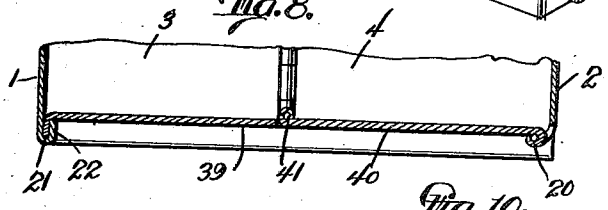


Fig. 9.

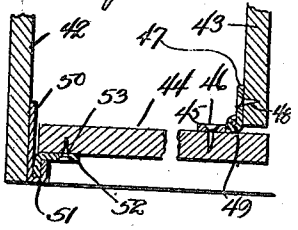


Fig. 10.

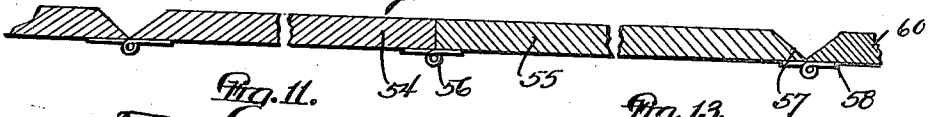


Fig. 11.

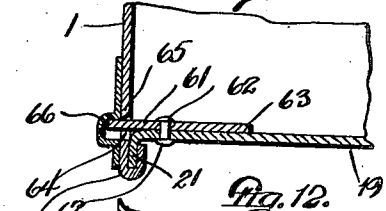


Fig. 12.

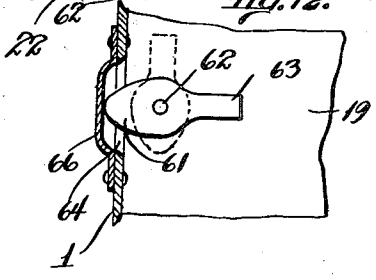


Fig. 13.

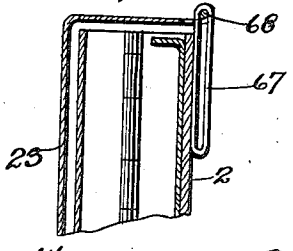
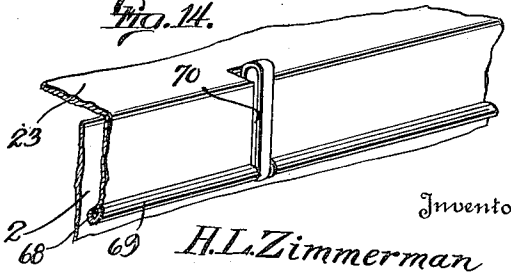


Fig. 14.



Inventor

H. L. Zimmerman

By Edgar M. Kitchin

His Attorney.

Patented Oct. 24, 1922. 1,433,169

UNITED STATES PATENT OFFICE.

HENRY L. ZIMMERMAN, OF DAVENPORT, IOWA.

PACKING CASE.

Application filed February 26, 1920. Serial No. 361,608.

To all whom it may concern:

Be it known that I, HENRY L. ZIMMERMAN, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented certain new and useful Improvements in Packing Cases; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in packing cases, and has for an object to provide an improved case for use more particularly in the transportation and storage of such articles as dry-goods, silks, shoes, candy, furs, etc., and other articles that from their nature or value are subject to damage from fire or moisture.

It is a further object of the present invention to provide an improved packing case that will be proof against the inroads of rats or mice, and will also form an effective barrier to the theft of the goods transported therein.

A further object of the present invention resides in providing an improved packing case that will be collapsible, so that the same may be knocked down into relatively small compass, thereby permitting its return to the point of shipment and its re-use. The fact that the case is collapsible enables large numbers of the cases to be packed within a space very small in comparison to that required were the cases not capable of collapse.

With these and further objects in view as will in part hereinafter become apparent and in part be stated, the invention comprises certain novel constructions, combinations and arrangements of parts as subsequently specified and claimed.

In the accompanying drawings,—

Figure 1 is a perspective view of an improved packing case constructed in accordance with the present invention and shown in the set up condition.

Figure 2 is a similar view showing the collapsed condition of the case.

Figure 3 is a vertical sectional view taken on the line 3—3 in Figure 1.

Figure 4 is a sectional view taken on the line 4—4 of Figure 2.

Figure 5 is a fragmentary, perspective view showing the case partially collapsed.

Figure 6 is a sectional view taken on the line 6—6 of Figure 2.

Figure 7 is a horizontal sectional view through a slightly modified form of case in which two compartments are provided.

Figure 8 is a fragmentary sectional view through a case of narrow depth as compared with its length and having a bottom made up of two sections and foldable upon itself.

Figure 9 is a fragmentary sectional view of a wooden case.

Figure 10 is a similar view of a different portion of the case.

Figure 11 is also a fragmentary sectional view showing a means for locking the bottom.

Figure 12 is a fragmentary plan view with parts shown in section of the same.

Figure 13 is a fragmentary sectional view showing a modified form of hinge, and

Figure 14 is a fragmentary perspective view of the same.

Referring more particularly to the drawings, and for the present to Figures 1 to 6 inclusive, the improved packing case is here illustrated as manufactured from sheet metal and providing a container substantially in the form of a cube. The body of the container is composed of front and rear walls 1 and 2 respectively, which are adapted to move toward and from each other while always remaining in parallel relation. The front and back 1 and 2 are connected together by folding sides, consisting of sections 3, 4 and 5, 6. The sections 3 and 4 are hinged together centrally, as indicated at 7, so as to permit the central hinge portion thereof to move within the body of the case substantially in the manner indicated in Figure 5. In like manner, the sections 5 and 6 of the opposite side are hinged together by a pintle 8 passing through the over-turned eyes 9 at the inner ends of the sections; so that these two sections 5 and 6 are in like manner adapted to fold within the case and between the front 1 and back 2. The front wall 1 of the case has its vertical side edges bent over rearwardly, as indicated at 10, and 11, the same being scalloped and rolled over to provide spaced-apart eyes 12 in which to receive a hinge pintle 13 passing vertically downward through the alining eyes 12 and through similar intermeshing eyes 14 rolled over from the adjacent edge of the sections 3 and 5.

In like manner, the rear wall 2 has its vertical edges 15 and 16 bent at right angles to the plane of the rear wall 2 and extending forwardly substantially in planes with the edges 10 and 11 respectively of the front wall 1. Hinge joints 17 and 18 are formed respectively between the side sections 4 and 6 and the bent over edges 15 and 16 of the rear wall 2, so that hinge joints are provided at both ends of each of the sides and also at substantially the central portions thereof, whereby to allow such sides to execute the movement indicated in Figure 5. In Figure 6, the complete collapse of the case is shown, where the sections 3, 4 and 5, 6 are moved together and as a consequence have drawn the front and rear walls 1 and 2 into close relation.

At 19 is represented the bottom of the case also made of sheet metal and having its rear edge hinged as indicated at 20 to the lower forwardly turned edge of the rear wall 2. At its front edge the bottom 19 is provided with a downwardly-turned bead 21 engaging in a clip 22 formed by bending the lower edge of the front wall 1 forwardly and upwardly so that the upper free extremity forms a stop on which the forward portion of the bottom 19 rests, while the bead 21 extends down into the socket formed between the extremity 22 and the lower portion of the front wall 1. The weight of the goods resting on the bottom 19 will effectually hold the bead 21 in the clip 22; although it is preferable that a tight frictional fit between these two parts will also serve to prevent the accidental raising or rattling of the bottom 19. The bottom 19 is continuous from one lateral edge to the other and serves to engage the lower edges of the collapsible sides so as to hold them spaced apart and in their distended condition when the case is set up and in use as a packing case. When the case is to be collapsed, the bottom 19 may be folded about the hinge joint 20, in which case it will lie close to the rear wall 2.

The top of the case is indicated at 23, and is also made from sheet material provided with the flanges 24 extending down on all four sides of the case, and preferably being beaded, as shown at 25, for purposes of strength and to receive knocks and jars incident to transportation. The rear flange 24 of the top 23 extends a considerable distance below the upper edge of the rear wall 2, and a loose hinge joint is made between these edges. This joint is preferably made by scalloping and rolling the upper edge of the rear wall 2, as indicated at 26, and similarly rolling and scalloping the lower edge of the top flange 24 as indicated at 27. These edges receive hinge pintles, which also go through the opposite longitudinal scalloped and rolled edges of a hinge plate 28. As shown in Figures 1 and 5, a pair of clips 29 are carried by the side sections 5 and 6 near their upper ends in position to receive the bead 25 on the side flange 24 of the top 23, in order that this bead may serve to hold the side sections 5 and 6 against collapse near their upper ends.

Other clips 30 are also carried by the side sections 5 and 6, near their upper ends, to engage over the beads 25 of the flanges of the top 23, the upper free ends of the clips 30 being turned down in the form of claws to bind over the beads 25 for the purpose of preventing the accidental raising or rattling of the top 23. These clips or claws 30 are also preferably provided on the front of the case, as shown in Figure 1, and may be supplied in any suitable number at desirable points.

A hasp 31 is carried by the top 23 and is adapted to engage over a staple or eye 32 carried by the front wall 1. A padlock 33 may be employed to secure the hasp 31 over the staple 32 and thus prevent unwarranted tampering with the case in transit.

As shown in Figure 2, the rear wall 2 may be also provided with a staple 34 adapted to receive the hasp 31 in order to lock the case in its collapsed condition to prevent the unauthorized setting up of the same and the introduction of spurious goods.

The case as above described in its set up condition is shown in Figure 1, and provides a commodious packing case for the receipt of perishable articles or articles apt to be destroyed by fire or moisture or the depredations of rodents. The top 23 is raised about the hinge joint to allow access to the interior of the case for the purpose of introducing or removing articles therefrom.

When the case, laden with articles of merchandise, arrives at its destination, the padlock 33 is unlocked by an authorized person possessed of the key thereto, which permits the top 23 to be thrown over and the contents removed. The case is thereupon collapsed and returned to the point of shipment for the receipt of further goods, and in this way the case may be susceptible of recurrent use. This collapse of the case is effected by first pushing the bottom 19 in so as to disengage the bead 21 from the clip 22, and moving such bottom 19 about the hinge joint 20 close against the rear wall 2. The sides 3, 4 and 5, 6 are then pushed inward, as indicated in Figure 5, drawing the front wall 1 toward the rear wall 2. The front and rear walls together with the bottom and the side walls thus collapsed may be folded about the hinge plate 28 so as to bring all of these parts within the protection of the flanges 24 of the top 23. The hasp 31 is then engaged over the staple 34 and the padlock 33 put in place. In this collapsed condition, the case is returned to the shipper and its use will be prevented by unauthorized persons. This

collapsed condition allows great numbers of the cases to be returned while occupying very small shipping space.

Referring now more particularly to Figure 7, the case is made in all substantial respects identical with that previously described with the exception that a partition 35 is placed within the case so as to divide the same into two compartments. As shown, the partition 35 extends between the front wall 1 and the rear wall 2, these walls being fitted with angle irons 36 spaced apart to receive the edges of the partition therebetween. The partition is slidable between the angle irons 36, which form guides for the same so that the partition 35 may be removed when the case is to be collapsed and may be placed between the front and rear walls 1 and 2. In this case, the bottom is made in two sections 37 and 38 adapted to collapse upwardly against the rear wall 2 at opposite sides of the angle irons 36.

Of course, other partitions may be provided in the case, or they may be arranged in a different manner.

Referring to Figure 8, the bottom, instead of being formed in one continuous sheet, is made up of two sections 39 and 40, which are hinged together as indicated at 41. The construction of the several parts is otherwise as previously described. A bottom of this character is useful especially where the length of the case is greater in comparison with its height, so that the bottom may be folded over upon itself at the hinge point 41, thus causing the sections 39 and 40 to collapse against each other.

In Figure 9, I have illustrated a construction in which the container instead of being of sheet metal, is made of wood. At 42 is indicated the front wooden wall and at 43 is represented the rear wooden wall. The bottom, also of wood, is represented at 44, and is provided with a leaf 45 screwed or otherwise secured thereto, as indicated at 46. A similar leaf 47 is secured, as by screws 48, to the lower edge of the rear wall 43. Between the leaves 45 and 47 is arranged a hinge joint 49 for permitting the bottom 44 to collapse upwardly against the front face of the rear wall 43. The front wall 42 at its inner lower edge carries a metal clip 50 to receive the metallic downwardly-turned bead 51 carried by a plate 52 secured, as by screws 53, to the wooden bottom 44 near its outer free edge.

In Figure 10 is shown the collapsible sides of the wooden box composed of adjacent sections 54 and 55 united by a metal hinge 56 along the outside thereof. These sections 54 and 55 collapse inwardly in the same manner as the metal sides, but it is necessary to cut away or bevel the adjacent ends 57 and 58 of the various sections and the parts to which they are hinged to permit of this collapsible movement. The wooden parts 60 correspond to the outturned edge 16 of the metal rear wall shown in Figures 5 and 7.

A similar construction is at the other end, but as this is believed clear no further explanation is offered.

In Figure 11 the bottom 19 is shown as provided with an eccentric 61 adapted to rotate about a pivot 62 and having a hand piece 63 for its convenient movement. A slot 64 is made in the front wall 1 of the packing case near its lower end to receive the nose of the eccentric 61 and a beveled upper edge 64 is preferably made at the top of the opening 64 in order to guide the eccentric downwardly and to urge the bead 21 forcibly into the clip 22. A metal strap 66 is secured over the outer face of the front wall 1 so as to obscure the opening 64 and the eccentric 61 and to prevent tampering therewith. In Figure 12, the dotted line position indicates that the eccentric may be swung to disengage its nose from the opening 64 when the bottom 19 is to be raised and collapsed.

Referring more particularly to Figures 13 and 14, a modified form of rear hinge joint is shown which consists of a strap 67 formed in a closed loop adapted to receive the reenforcing wire 68 which passes through the bead 69 on the flange of the top 23. The flange and top are cut away as indicated at 70 to receive the looped strap 67. Figure 13 shows the collapsed condition of the parts where the reenforcing wire 68 resides in the upper end of the loop, while Figure 14 shows the top in place for closing the packing case when the same is set up, and here the reenforcing wire 68 has been moved to the bottom portion of the loop 67. The loop 67 is soldered or otherwise secured to the rear wall of the case.

What is claimed is:—

1. An improved packing case comprising front and rear walls, side walls composed each of a pair of sections hingedly joined together and having their opposite ends respectively hinged to said front and rear walls and collapsible inwardly between such front and rear walls, a bottom hinged to the lower portion of the rear wall being foldable upwardly against such rear wall and within the side walls, said bottom adapted to engage the lower edge portions of the side sections to hold such sections extended when the bottom is in the lowered position, a flange top for the case having a bead extending thereabout, a plate hinged to said bead and to the upper portion of the rear wall, guide clips carried by the sections of the side walls exteriorly thereof and acting to engage the bead of the flange top to pre-

vent inward movement of the sections, said clips being located adjacent the hinge connections between the sections of the sides, and means to secure the top in closed position.

2. A packing case comprising rigid front and rear walls, collapsible side walls secured to the front and rear walls and adapted to fold inwardly thereof, a bottom hinged to one of the rigid walls and having a down turned free edge portion, the other rigid wall having an inwardly turned-up socket portion to engage said down turned edge of the bottom, a flange top for the case having a bead extending about the marginal portion of the flange, a loose hinge connection for the top with a portion of the case, rigidly mounted clips having portions adapted to lockingly engage with the bead of the flange top when closed and acting to prevent the inward collapse of the sides, and means to lock the top on the case in both set up and collapsed positions.

In testimony whereof I affix my signature in presence of two witnesses.

HENRY L. ZIMMERMAN.

Witnesses:
D. D. TREHARVE,
A. M. SISSELL.