O. KLING.

COLLAPSIBLE CASE.

APPLICATION FILED JUNE 9, 1911.

1,045,412.

Patented Nov. 26, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

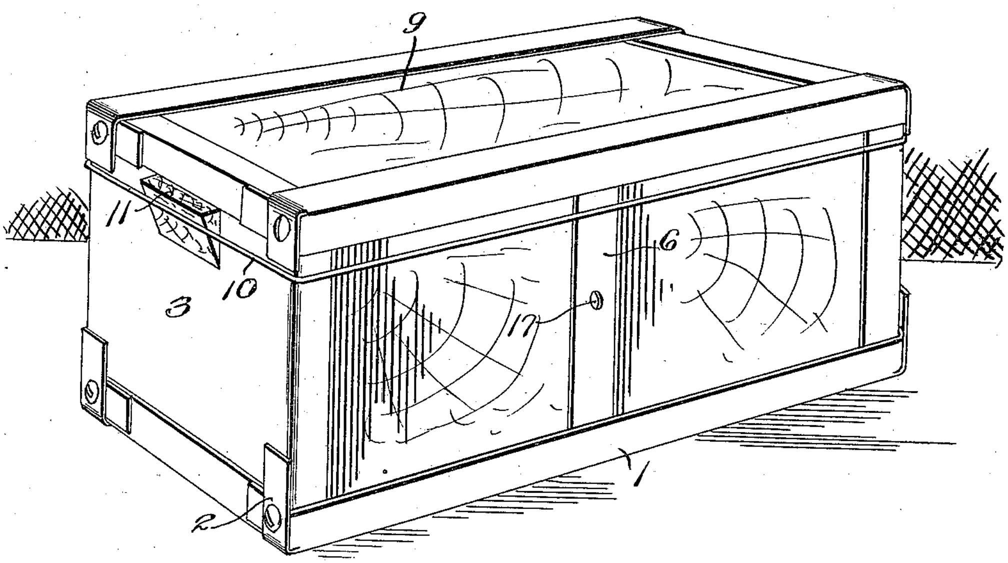
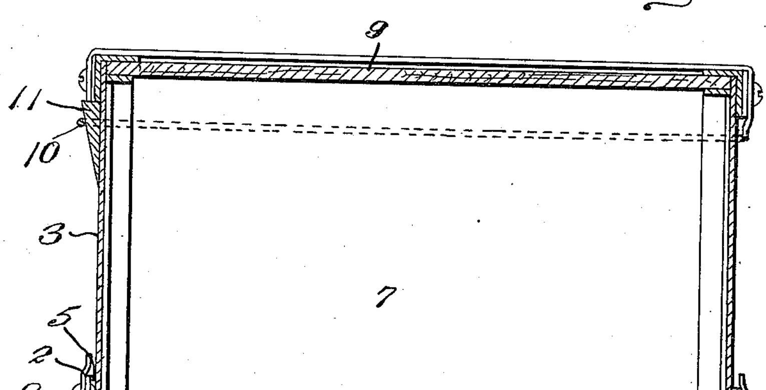


Fig. 2.



Inventor

Orlando Kling.

Witnesses

W. T. Woodson

Juana M. Fallin.

By H. B. Willson & Co., Attorneys.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

O. KLING.

COLLAPSIBLE CASE.

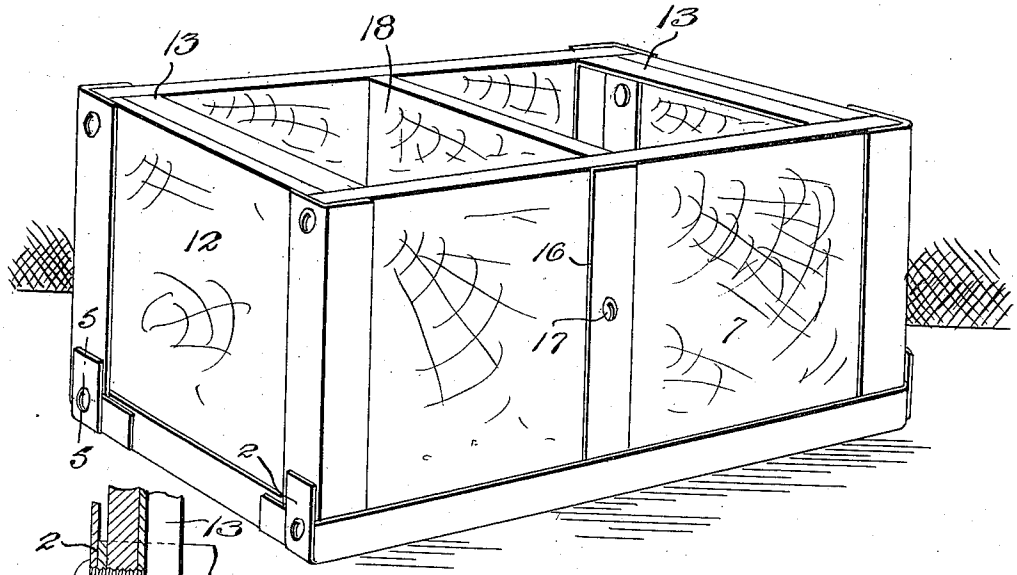
APPLICATION FILED JUNE 9, 1911.

1,045,412.

Patented Nov. 26, 1912.

2 SHEETS—SHEET 2.

Fig. 3.



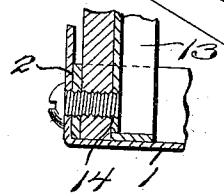


Fig. 5.

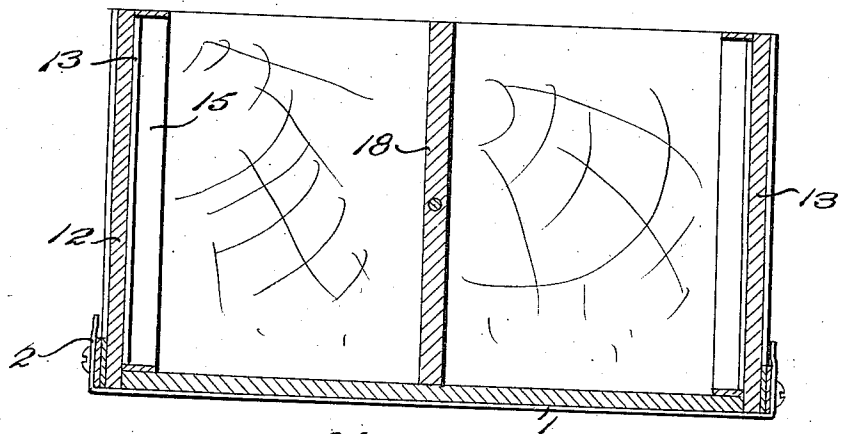


Fig. 4.

Witnesses

W. N. Woodson.

Juana M. Fallin

Inventor

Orlando Kling.

By Watson, Attorneys.

COLUMBIA PLANOGRAPH CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ORLANDO KLING, OF DENVER, COLORADO.

COLLAPSIBLE CASE.

1,045,412. Specification of Letters Patent. Patented Nov. 26, 1912.

Application filed June 9, 1911. Serial No. 632,302.

To all whom it may concern:

Be it known that I, ORLANDO KLING, a citizen of the United States, residing at Denver, in the county of Denver and State of Colorado, have invented certain new and useful Improvements in Collapsible Cases, of which the following is a specification.

This invention has relation to collapsible packing cases, and has for its object to provide means for holding the sides, ends, top and bottom of a case in proper relation to each other when set up by drawing the ends toward each other and using tap screws as securing devices, thereby avoiding the use of nails or other penetrating devices for holding the parts in position so that they may be knocked down for storage or shipment. The parts are so assembled that the screws do not project into the interior of the case when the parts are set up and offer an obstruction. The ends of the case are drawn toward each other by strips of angle iron which are located about the corners of the case and the edges formed at the sides and the top and the bottom, and thus the said strips not only serve as traction means for the ends of the case, but serve as fenders for protecting the sides and ends should the case be rolled sidewise or pitched end over end. The case is in two forms, one of which is provided with metallic ends and the other provided with ends of wood or similar material with strengthening metallic sections.

For a full understanding of the invention reference is to be had to the following description and accompanying drawings, in which:

Figure 1 is a perspective view of one form of the case; Fig. 2 is a longitudinal sectional view of the same; Fig. 3 is a perspective view of a modified form of the case; Fig. 4 is a longitudinal sectional view of the same; and Fig. 5 is a detail sectional view of a part of the case, cut on the line 5—5 of Fig. 3.

Corresponding and like parts are referred to in the following description and indicated in all the views of the accompanying drawings by the same reference characters.

The case includes four edge pieces 1 which are preferably formed from sheet metal bent up in angular relation longitudinally and having at their ends folded sections 2 which are located at the corners of the case when the parts are in set up position. In one form of the case sheet metallic ends 3 are provided and these ends are provided at their side edges with angularly disposed flanges 4. The ends 3 are provided in the vicinity of their corners with openings 5 through which tap screws 6 are adapted to be inserted when the parts are in set up position. In this form of the invention, the sides 7, bottom 8 and top 9 are of wood and the parts are set up as follows: The bottom 8 is placed in the lower edge pieces 1, the ends 3 are placed at their lower edges upon the upper surface of the end portions of the bottom 8 with their flanges 4 located against the inner sides of the lower edge pieces 1. The sides 7 are then placed edgewise above the lower edge pieces 1 with their ends against the inner surfaces of the end pieces 3 and the outer sides of the said side pieces 7 lying against the inner surfaces of the flanges 4. The lower screws 6 are then passed through the fold extremities 2 of the edge pieces 1 and openings 5 provided at the lower portions of the end pieces 3. Thus the lower parts of the sides and ends are secured together with relation to the bottom, and by tightening the screws 6 and the end pieces 3 are forced into close contact against the ends of the side pieces 7. It will be observed that the inner ends of the screws 6 do not project beyond the inner surfaces of frame pieces 13 to be described and therefore the said screws 6 do not obstruct the interior of the case. It is now desired to pack or fill the case, but during this operation means must be provided to prevent the upper portions of the sides 7 and end pieces 3 from spreading. Therefore a bond 10 in the form of a continuous rod is placed around the upper portions of the said side and end pieces and a wedge 11 is forced down between one of the end pieces 3 and the bond 10 and thus the upper portions of the end pieces 3 are forced tightly against the ends of the side pieces 7 and the case may be readily packed without the danger of spreading. When the case is filled the top 9 is laid upon the upper edges of the side pieces 7 and end pieces 3 and the upper edge pieces 1 are applied in the same manner as that described in connection with the lower edge pieces. When this is done the wedge 11 and bond 10 are removed and the case is packed with its parts held up in set up position by its contents with the edge protecting pieces 1 serv-

ing as traction means for holding the end pieces in close contact with the ends of the side pieces 7.

In the modified form of the invention the end pieces 3, hereinbefore described as being of metal, are substituted by wooden pieces 12. In both forms frame pieces 13 are applied to the inner surfaces of the said end pieces 3 and 12. These frame pieces prevent the said end pieces from warping or splitting when the tap screws 6 are inserted for the inner ends of the said screws are engaged in threaded perforations 14 provided in the said pieces 13 in a manner as shown in detail in Fig. 5. The pieces 13 are provided with flanges 15 which bear against the sides of the side pieces 7 and hold the same in proper relation to the pieces 12.

When it is desired to unpack and collapse the case it is only necessary to remove the tap screws 6 at the corners thereof when the contents of the case may be readily removed from the bottom thereof and the parts may be laid one upon another for shipment or storage.

If at any time it should be desired to provide the case with an interior partition or support, this may be readily done by placing the said partition or support in position between the opposite sides of ends of the case after they have been set up, but prior to packing, and by providing metallic strips 16 with their upper and lower ends held within the oppositely disposed flanges of the edge pieces 1, as illustrated in the drawings, and by passing screws 17 through the said strips 16, sides and embedding the inner ends thereof in the partition, which in the drawings is indicated at 18.

Having thus described the invention what is claimed as new is:

In a collapsible case, an outer end frame, an inner end frame engaging within the outer end frame, each end frame comprising L-bars overlapping at their terminals, end plates engaging respectively at their edges between the outer and inner end frames, side and bottom plates engaging at their edges between the webs of the end frames, stay members extending between the end frames and each formed from an L-strip having a longitudinal cleft in the ends and the sides of the strip opposite the clefts bent at right angles and bearing over the corners of the outer end frames, and fastening devices extending through the overlapped portions of the stay members end frames and end plates.

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

ORLANDO KLING. [L. S.]

Witnesses:
DEAN B. JOHNSTON,
A. G. BARROW.