

May 2, 1933.

T. R. WALKER

1,907,375

BINDING MEANS FOR BOXES

Filed March 19, 1932

2 Sheets-Sheet 1

Fig. 1.

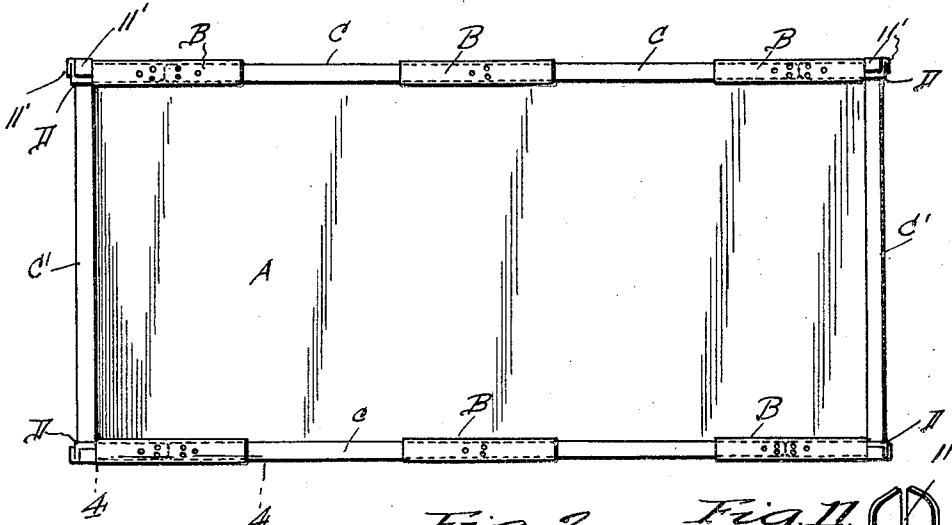


Fig. 2.

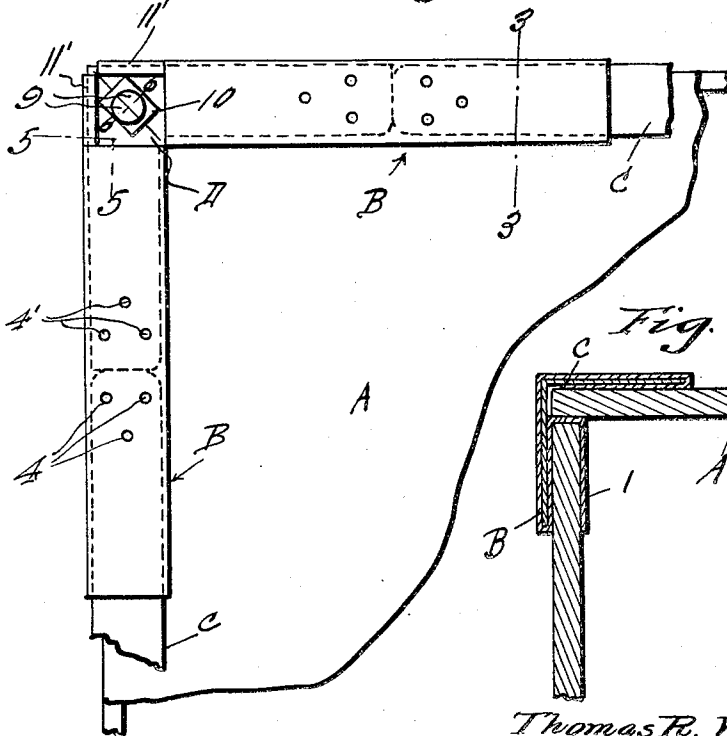
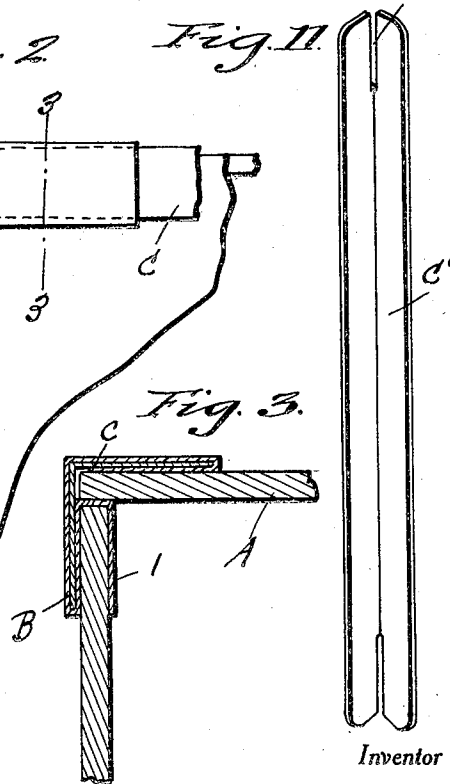


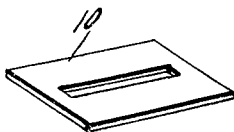
Fig. 11.



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Fig. 10.



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2 Sheets-Sheet 2

Fig. 4

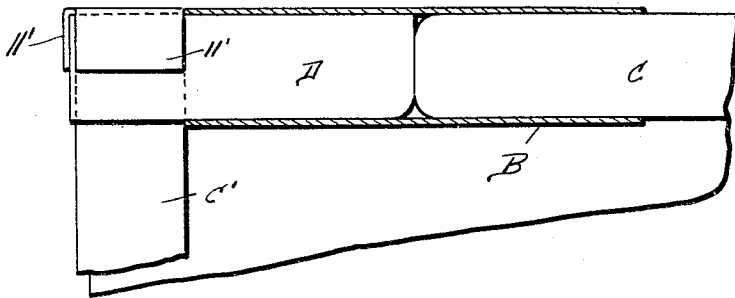


Fig. 5

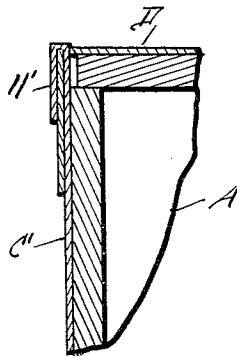


Fig. 6

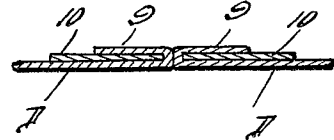


Fig. 8

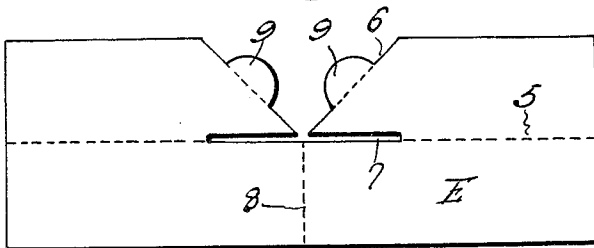


Fig. 7

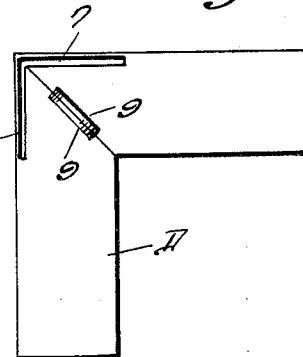
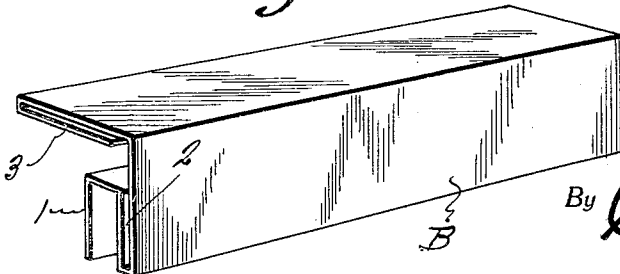


Fig. 9



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UNITED STATES PATENT OFFICE

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BINDING MEANS FOR BOXES

Application filed March 19, 1932. Serial No. 599,978.

This invention relates to binding means for boxes, the general object of the invention being to provide simple means for binding together the panels of a box so that the box may be made of a desired size and without the use of nails and for enabling the box to be easily and quickly assembled.

Another object of the invention is to provide binding means, which are light, strong and cheap, which have no waste parts and the parts can be used over and over again.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings and specifically pointed out in the appended claims.

In describing the invention in detail, reference will be had to the accompanying drawings wherein like characters denote like or corresponding parts throughout the several views, and in which:

Figure 1 is a view of a box constructed in accordance with this invention.

Fig. 2 is a top plan view of one corner of a box.

Fig. 3 is a section on line 3—3 of Fig. 2.

Fig. 4 is a section on line 4—4 of Fig. 1.

Fig. 5 is a section on line 5—5 of Fig. 2.

Fig. 6 is a section on line 6—6 of Fig. 2.

Fig. 7 is a view of one of the corner members.

Fig. 8 is a view of the blank from which the corner member is formed.

Fig. 9 is a perspective view of one of the angle members.

Fig. 10 is a view of the slotted plate.

Fig. 11 is a view of a channel strip.

In these drawings, the panels forming the sides, ends, top and bottom of the box are shown at A and these panels may be made of any suitable or desirable material. The trough members are shown at B, and referring particularly to Fig. 9, it will be seen that each member is of angle shape in cross section and has an extension of one part bent into a large channel 1 and a small channel 2, the small channel 2 being formed by spacing the large channel 1 from said part or limb

of the angle member, with the bight of the channel 1 spaced from the other limb of the angle member. The said other limb of the angle member is bent to form a channel 3, which is of the same width as the channel 2, but longer or deeper than said channel 2.

As shown in Fig. 3, one of the panels A has its edge inserted into the channel 1, and another of the panels has its edge placed in the space between the bight of the channel 1 and that limb of the member B which carries or forms the channel 3. The angle members B at each side corner edge of the box are connected together by the angle strips C, the limbs of which are partly inserted into the channels 2 and 3 as also shown in Fig. 3.

After the parts are adjusted to the length of the box, the members B are punched with a suitable instrument to form the indentations 4 which are also formed in the angle strips C so as to lock the parts together.

It will of course be understood, that a set of the members B and C are placed on all four side corners of the box to hold the sides and top and bottom together as well as the ends and the corner pieces D are used to connect the binding means at the sides of the box with those at the ends of the box. The corner piece D is also of angle shape in cross section and formed of a blank E bent on the longitudinal line 5 to provide the two limbs of the angle, and one of the limbs is formed with a V-shaped recess 6 at its center and the elongated slot 7, the center of which opens out into the apex of the recess 6 and this slot 7 is located on the line 5 as clearly shown in Fig. 8.

The unrecessed limb of the angle is bent transversely at the center on the line 8 so as to make the corner piece at right angle shape as shown in Fig. 7. Tongues 9 are left in forming the recess 6 so that when the blank is bent into the shape of the corner piece, and the tongues are bent upwardly, they will contact each other as shown in Fig. 7 with the tongues extending at right angles from the corner piece as shown in Fig. 7.

A slotted plate shown at 10 in Fig. 10 is then placed on the corner piece with the tongues 9 passing through the slot, after

which the tongues are bent over as shown in Fig. 6 to lock the corner piece in its right angle form.

One part of this corner piece is placed in the channels 2 and 3 of the adjacent member B at a side of the box, and the other part placed in the channels 2 and 3 of the adjacent member B at the end of the box, and these parts are also locked together by indentations 4' shown in Figs. 1 and 2.

The lower and upper binding means are connected by angle strips C' which have their ends slit as shown at 11 in Fig. 11 and these ends pass through the slots 7 of the upper and lower corner pieces, and the ends are bent over as shown at 11' in Fig. 5.

As shown in Fig. 5, the ends of the channel strips C' extend between parts of the box and parts of the corner strip and then pass through the slots 7 and are then bent over the front faces of the corner strips.

It will of course be understood that if a box of small size is bound together by these means, the members C can be used along the ends of the box and, if said members are long enough they can be used at the sides of the box without using the intermediate members B but it will of course be understood that in this event, the corner members and the channel strips C' must be used.

It will also be understood that if desired the members B need not be spaced as far apart as they are in Fig. 1, and more than three of the members can be used as shown in Fig. 1 by using shorter connecting channel strips C.

From the foregoing, it will be seen that I have provided simple means for binding together the panels of a box or the like, such means being readily expansible to fit boxes of different sizes, and they will hold the panels of the box together without the use of nails, screws or other fastening means. The parts are locked together by simply using a sharp tool to form indentations in the parts as shown at 4 and 4' and the upper members are connected to the lower members by the channel strips C' with the bent ends of said strips C' engaging the corner pieces as shown more particularly in Fig. 5.

It is thought from the foregoing description that the advantages and novel features of the invention will be readily apparent.

It is to be understood that changes may be made in the construction and in the combination and arrangement of the several parts provided that such changes fall within the scope of the appended claims.

Having thus described my invention, what I claim as new is:—

1. In binding means of the class described, an angle shaped member having a small channel part on the inner face of one of its limbs for receiving a panel member, the bight of said small channel being spaced from the

other limb to form a space for receiving an edge of another panel member said small channel part being spaced from the limb to which it is attached and said other limb having an extension folded over its inner face and spaced from said face, said spaces receiving the end of a tie member.

2. In binding means of the class described, an angle member having a small channel part on the inner face of one of its limbs for receiving a panel member, the bight of said small channel part being spaced from the other limb to form a space for receiving an edge of another panel member, said small channel part being spaced from the first limb of the angle member, and the other limb of the angle member being bent to extend over the inner face of said limb to form a small channel, and an angle strip having portions fitting in said small channel and in the space formed between the small channel part and the limb of the angle member to which said small channel part is connected.

3. Binding means of the class described comprising an angle-shaped member having one limb formed with an extension bent to form a small channel, spaced from the inner face of said limb and the other limb having an extension bent inwardly to extend parallel but spaced from said limb, the small channel having its bight spaced from the second limb to form a space for receiving an edge of a channel and said small panel receiving an edge of another panel, an angle-shaped strip fitting in the space formed by the small channel and the limb which it is connected with, and in the space formed by the bent extension of the second limb for connecting said angle member to a similar member, the parts being punched to lock the angle members to the angle strip and corner pieces for connecting a pair of angle members, arranged at right angles to each other, together, each corner piece being of right angle shape with each limb of angle shape in cross section, with said limbs fitting in the spaces formed by the bent parts of the angle members.

4. Means for connecting the panels of a box together, comprising a plurality of angle members, each having an extension on one limb bent to form a small channel and a narrow space between the small channel and said limb, with the bight of the small channel spaced from the other limb, and said other limb having an extension folded inwardly and spaced from said other limb to form a second narrow space, the small channel receiving an edge of a panel and the space between the bottom of the said small channel and said other limb receiving an edge of another panel, angle shaped strips fitting in said narrow spaces for connecting the angle members together, corner members of right angle shape, having each limb of angle shape and fitting in the narrow spaces of adjacent angle

members at the ends and sides of the box, the said corner members having slots therein at the outer corners thereof, angle shaped strips extending along the vertical corners of the box and having slit ends passing through said slots and bent over to connect the upper corner members with the lower corner members, the parts being indented to connect the angle members with the corner members and with the side and end angle strips.

5. Means for connecting the panels of a box together, comprising a plurality of angle members, each having an extension on one limb bent to form a small channel, and a narrow space between the small channel and said limb, with the bight of the small channel spaced from the other limb and said other limb having an extension folded inwardly and spaced from said other limb to form a second narrow space, said small channel receiving an edge of a panel and the space between the bottom of the small channel and said other limb receiving an edge of another panel, angle shaped strips fitting in said narrow spaces for connecting the angle members together, corner members of right angle shape, having each limb of angle shape, said limbs fitting in the narrow spaces of adjacent angle members at the ends and sides of the box, the said corner members having slots therein at the outer corners thereof, angle shaped strips extending along the vertical corners of the box and having slits in its ends, the parts formed by the slit passing through the slots and bent over to connect the upper corner members with the lower corner members, the parts being indented to connect the angle members with the corner members and with the side and end angle strips, each corner member having an outstanding ear at the inner end of each limb, a slotted plate, through the slot of which the ears extend, said ears being bent over to lock the two limbs of the corner member together.

In testimony whereof I affix my signature.
THOMAS R. WALKER.

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