Jan. 16, 1940. V. F. DEWEY ET AL 2,187,490

CASING CONSTRUCTION

Filed May 1, 1939 3 Sheets-Sheet 1

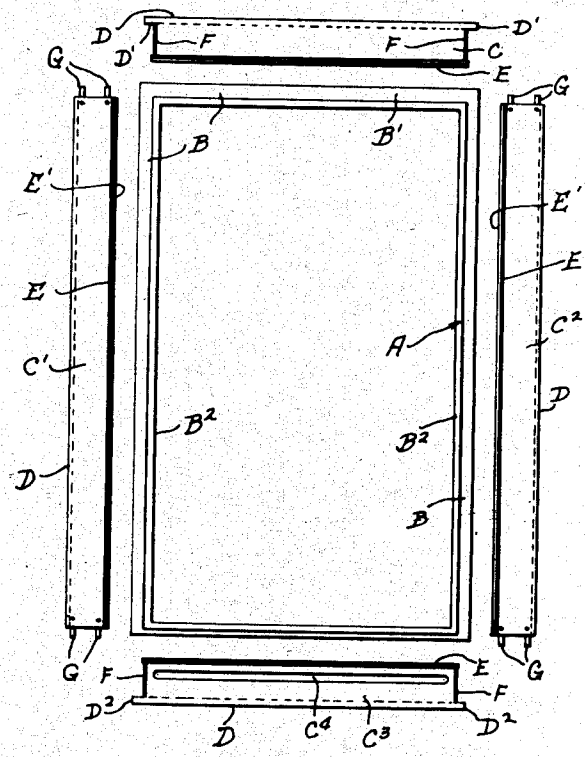


Fig. 1.

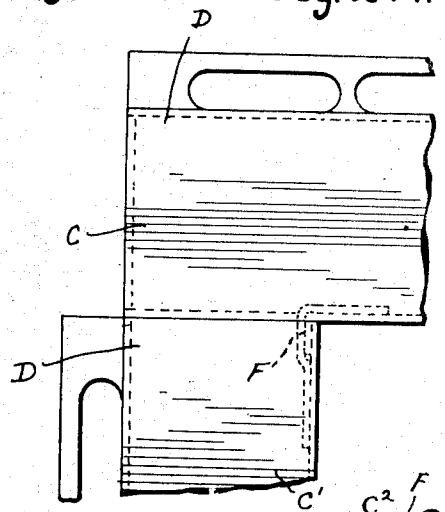


Fig. 2A.

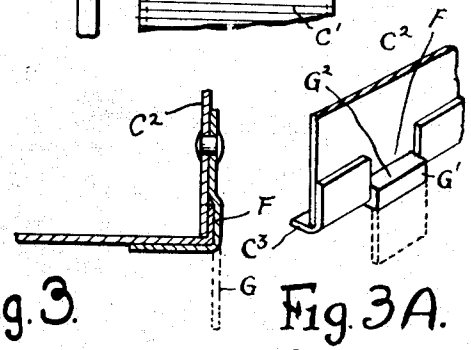


Fig. 3.

Fig. 3A.

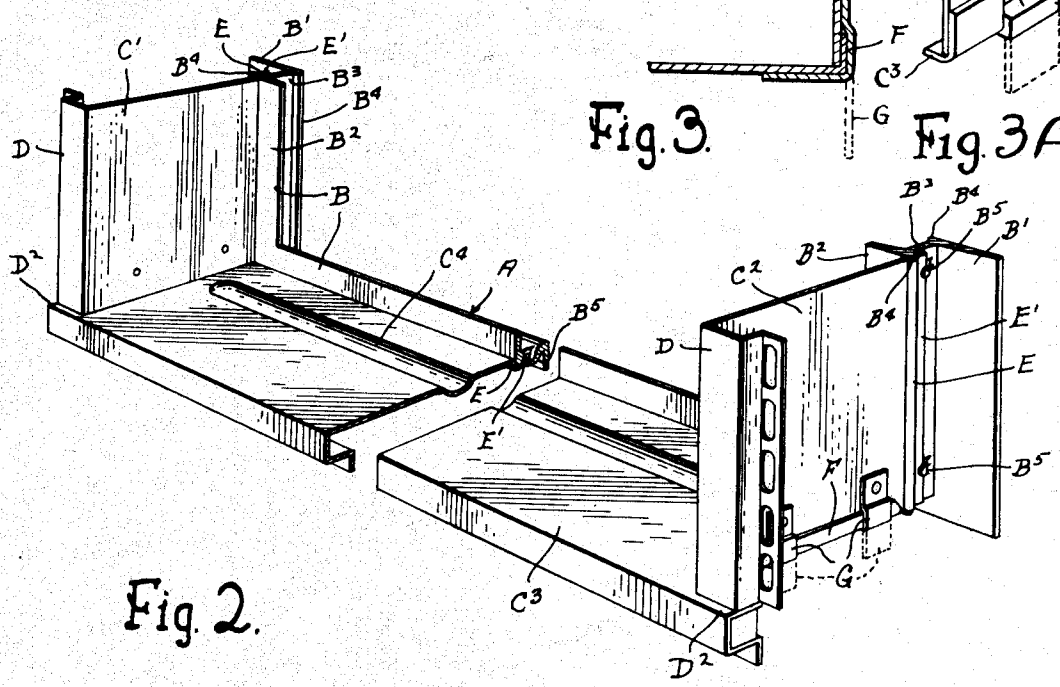


Fig. 2.

INVENTORS
Victor F. Dewey
Joseph N. McLoughlin

BY
Whittemore Hulbert & Belknap
ATTORNEYS

Jan. 16, 1940. V. F. DEWEY ET AL 2,187,490

CASING CONSTRUCTION

Filed May 1, 1939 3 Sheets-Sheet 2

Fig. 4.

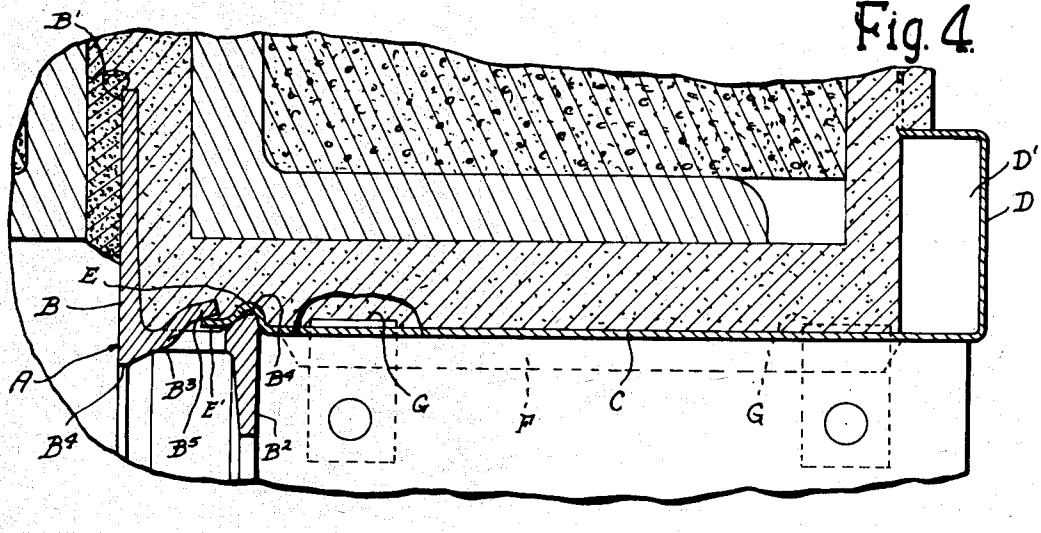
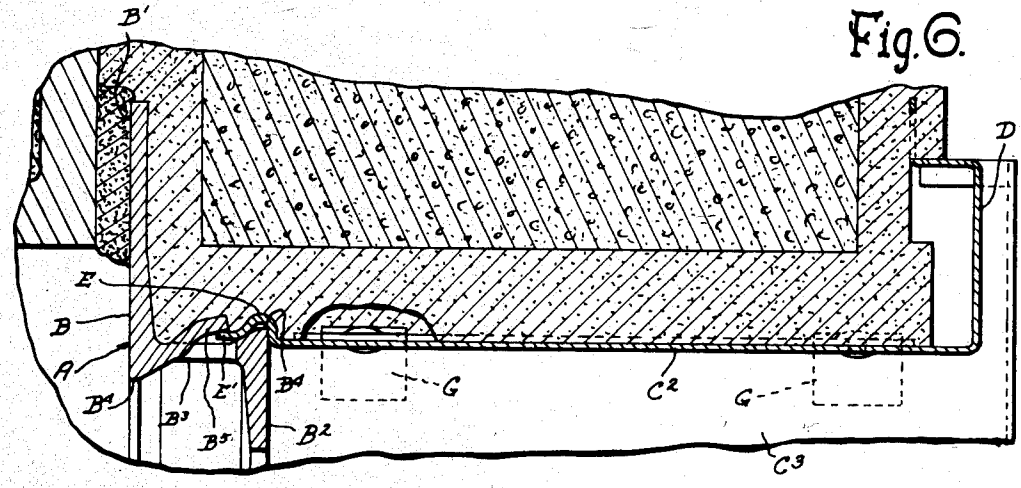


Fig. 6.



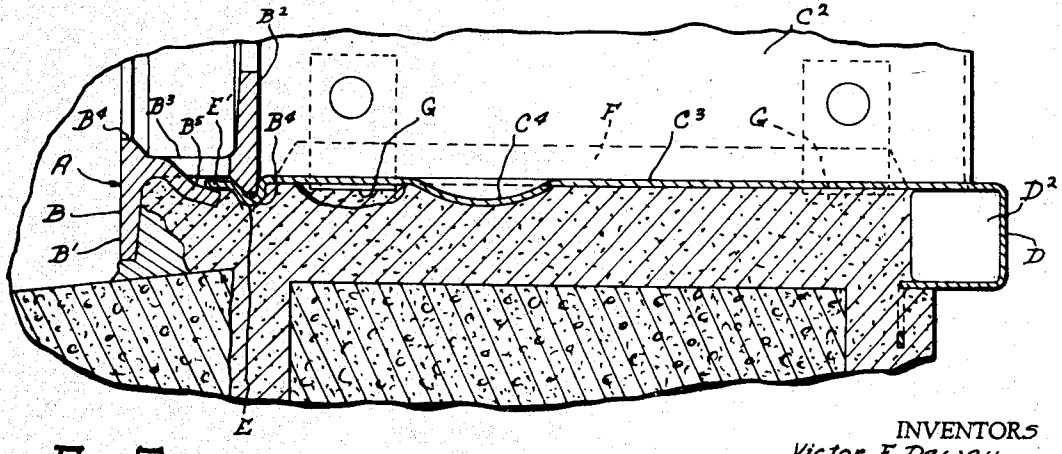


Fig. 5.

INVENTORS
Victor F. Dewey
Joseph N. McLoughlin

BY
Whittemore Hulbert & Belknap
ATTORNEYS

Jan. 16, 1940. V. F. DEWEY ET AL 2,187,490

CASING CONSTRUCTION

Filed May 1, 1939 3 Sheets-Sheet 3

Fig. 7.

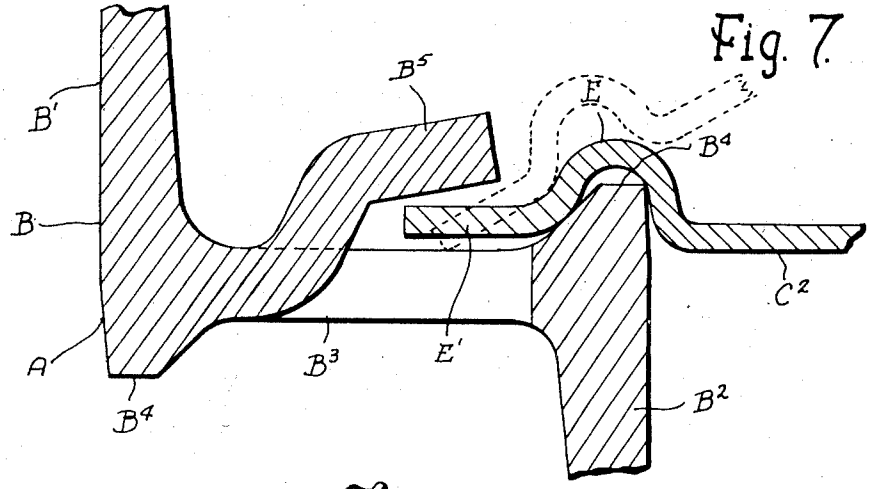
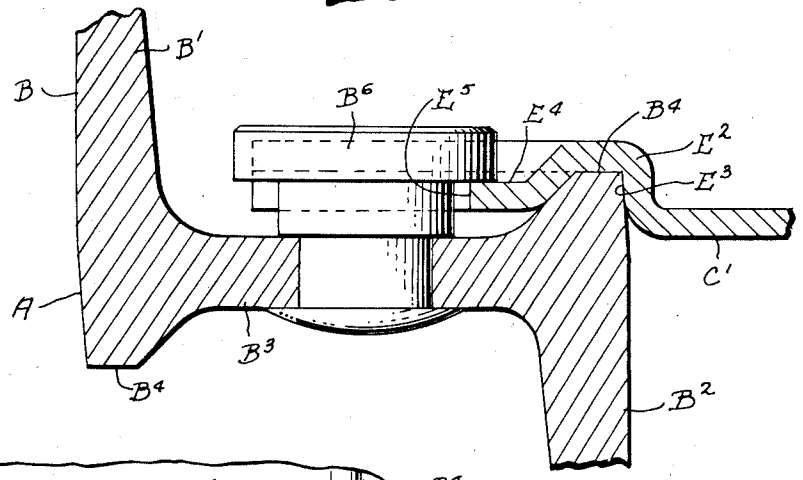


Fig. 8.



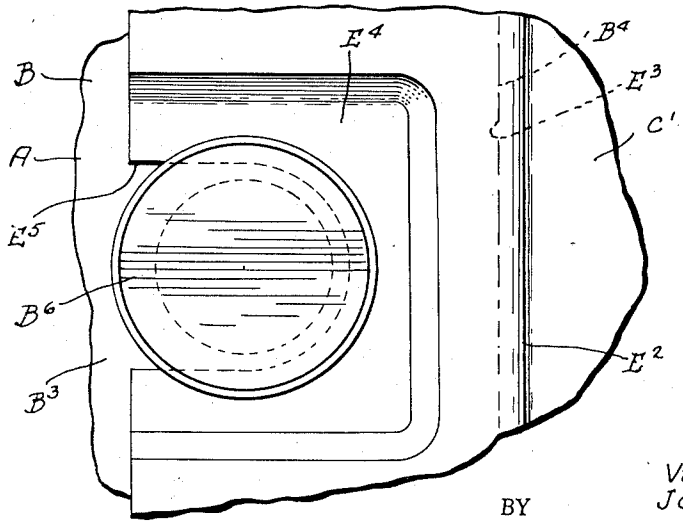


Fig. 9.

INVENTORS
Victor F. Dewey
Joseph N. McLoughlin

BY
Whittemore Hulbert & Belknap
ATTORNEYS

Patented Jan. 16, 1940 2,187,490

UNITED STATES PATENT OFFICE

2,187,490

CASING CONSTRUCTION

Victor F. Dewey and Joseph N. McLoughlin, Detroit, Mich., assignors to Detroit Steel Products Company, Detroit, Mich., a corporation of Michigan

Application May 1, 1939, Serial No. 271,121

11 Claims. (Cl. 189—75)

The invention relates generally to casing constructions applicable to various structures, and more particularly to metal window casings designed for use in building constructions.

It is the primary object of the invention to obtain a construction which can be shipped knocked down and in separate sections, but which is capable of quick assembly in the field and without the use of special tools or equipment. It is a further object to obtain a construction applicable to standard constructions of window frames and forming an interlocking engagement therewith. Still further, it is an object to avoid the use of screws or other small detachable parts easily lost, and to obtain a construction in which the interengaging and locking means are permanently secured to the several elements of the knocked down structure. With these objects in view the invention consists in certain general features, and also certain specific features of construction as hereinafter set forth.

While as above stated our improved casing may be used for various purposes, we have specifically described a construction designed for use in connection with metal window casings, as shown in the accompanying drawings in which:

Figure 1 is a front elevation showing a window frame and the several elements of our improved casing detached from said frame and from each other;

Figure 2 is a sectional perspective view showing the lower part of the window frame and a portion of the casing attached thereto;

Figure 2A is an enlarged elevation of the joint between the head section and side section of the casing;

Figure 3 is a section through interengaging adjacent members of the casing and the deformable locking means therefor;

Figure 3A is a perspective view of the construction in Figure 3, slightly modified;

Figure 4 is a vertical section through the head of the casing attached to the window frame and in position in relation to the building wall;

Figure 5 is a similar view through the sill;

Figure 6 is a horizontal section through one of the sides of the casing attached to the window frame and in position in relation to the building wall;

Figure 7 is an enlarged horizontal section illustrating one form of locking engagement between the sections of the casing and the window frame;

Figure 8 is a similar view illustrating a modified form;

Figure 9 is a front elevation of Figure 8.

Generally described, our improved casing comprises a plurality of sections corresponding respectively to the several sides of the window frame and having the ends of adjacent sections fashioned for interengagement with each other. Also, each section is individually engageable with the corresponding side of the window frame so as to interlock therewith when the sections are secured to each other.

As illustrated A is a metallic window frame of any suitable construction, but as shown formed of comparatively narrow bars of suitable cross section welded or otherwise attached to each other at the corners to form a rigid structure. As specifically shown, the bars B are of a Z cross section, including an outwardly extending flange B', an inwardly extending flange B^2, a connecting web B^3 and short flanges or beads B^4 on opposite sides of the web from the flanges B' and B^2. The frame A is only a fraction of the width of the wall in which it is mounted and is therefore supplemented by our improved window casing construction as follows.

C, C', C^2 and C^3 are the several sections of the casing which correspond respectively to the head, sides and sill of the window frame. Each of these sections is of a width corresponding to the depth from the window frame to the inside of the particular wall to which the casing is applied. Each section is preferably formed of sheet metal and may be provided with an outwardly extending flange D for overlaping the wall and forming a plaster ground and trim. The portion adjacent to the window frame is adapted for interlocking engagement therewith, which may be accomplished by various specific constructions. As shown in Figures 1 to 7 inclusive, the portion adjacent to the window frame is bent to form a groove E for engaging the bead B^4 and beyond this groove is a portion E' lying substantially parallel to the web B^3. Lugs B^5 are struck outward from the web B^3 to overlap and retain the portion E', the arangement being such that by placing the member C at an oblique angle the portion E' may be inserted beneath the lug or lugs B^5 and by then swinging the member into parallelism with the web the groove E will interlock with the bead B^4. The ends of the sections C, C', etc., forming adjacent sides of the casing, are fashioned for interengagement and are also provided with permanently attached locking means. As shown, the opposite ends of the sections C and C^3 forming respectively the head and sill or jambs, are provided with angle flanges F

for overlapping the adjacent side sections C' and C^2. The latter sections are provided with tongues G which may be either formed integral with the sections or permanently attached thereto as by riveting, welding or other method. If desired, the flanges and tongues may be reversed. The projecting portions of these tongues may then be bent at right angles overlapping the adjacent side and therby locking both sides to each other. The flanges D on certain of the sections are extended to complete the rectangle with the corresponding flanges of the adjacent sections. Thus, as shown, the head member C has the extensions D' which overlap the ends of the flanges D on the side sections. Also, the sill C^3 is fashioned at its opposite ends to extend beneath the flanges D of the side sections C' and C^2, as indicated at D^2. The sill is also preferably formed with a depressed portion C^4 extending longitudinally thereof between the side sections C', C^2. This forms a groove in which condensation may collect, thereby holding it from draining off the sill and down over the wall beneath the sill.

With the construction as described, the several sections forming the casing being separate from each other and from the window frame, may be compactly arranged for shipment. Thus where a large number of casings are shipped to a common point for erection, all of the corresponding sections may be nested with each other and will occupy a minimum amount of space during transportation. At the point of erection the sections C, C', C^2, C^3 may be quickly assembled with the window frames A in the manner previously described. This briefly consists in successively placing the sections at an oblique angle to the frame to engage the portion E beneath the lugs B^5 and then turning the section to extend perpendicular to the frame so as to interlock the groove portions E with the beads B^4. The ends of the sections are engaged with each other by inserting the angle flanges F of one section between the tongues G and end portion of the adjacent section, and in then bending the tongues to overlap around the corner.

An alternative form of interlock between the casing sections and window frame is illustrated in Figures 8 and 9. In this construction each section has an offset marginal portion E^2 which extends over the bead B^4 parallel to the web portion B^3 of the window frame, the offset forming a shoulder E^3 bearing against the face of the frame. The portion E^2 has a plurality of depressed portions E^4 with slots E^5 therein. The window frame is also provided with buttons B^6 connected to the web portion thereof, the shanks of said buttons being engageable with the slots E. This permits of engaging the sections with the frame in substantially the same manner as previously described with the construction illustrated in Figures 1 to 7. However, instead of having a continuous groove engaging the bead B^4, this bead is only engaged at separated points by the depressed portions E^4.

In the modified construction shown in Figure 3A the tongue G' is formed integral with the member C^2, but is offset from the plane thereof, as indicated at G^2. The flange F on the member C^3 is cut away at F' to receive the offset portion G^2 and after assembly the tongue G' is bent around the member C^3 as previously described.

What we claim as our invention is:

1. The combination with a rigid frame formed of bars with each side bar having a face normal to the plane of the frame, a portion projecting beyond said face and a portion overlapping said face, of a casing comprising a plurality of separate knockdown sections corresponding to the several side bars of the frame, each section having a portion for extending between said normal face and said overlapping portion and also having a portion for interlocking with said projecting portion, each section being engageable with its corresponding side bar when arranged in a plane oblique thereto, and interlocked when turned parallel to said normal face, the ends of sections on adjacent sides of the frame being fashioned for interengagement with each other, and a member permanently attached to one of said sections deformable to interlock the same with the adjacent section.

2. The combination with a rigid frame formed of bars with each side bar having a face normal to the plane of the frame and a longitudinally extending bead projecting beyond said face, of a casing comprising a plurality of separate knockdown sections corresponding to the several side bars of the frame, each section having a groove portion for engaging said bead and a portion projecting beyond said groove portion normally lying parallel to said face, said frame having a keeper for engaging said projecting portion when said section is arranged in oblique relation to said frame and retaining said groove portion in engagement with said bead when said section lies parallel to said face.

3. The combination with a rigid frame formed of bars each side bar having a face substantially parallel to the plane of the frame, a second face normal to said plane and a bead projecting beyond said second face, of a casing comprising a plurality of separate knockdown sections corresponding to the several side bars of the frame each section having an offset marginal portion forming a shoulder for abutting against said first mentioned face, said offset portion overlapping said second face and bead and having a struck-out portion forming a shouldered engagement with the opposite side of said bead, and a keeper on said frame with which said offset portion may be engaged when said section is arranged obliquely in relation to the frame, said keeper retaining said struck-out portion in engagement with said bead when said section is substantially parallel to said second face.

4. The combination with a rigid frame, of a casing attachable thereto comprising a plurality of sections corresponding respectively to the several sides of the frame and individually engageable therewith, said sections and frame sides having cooperating shoulders for limiting relative transverse movement of said sections and frame sides, the ends of adjacent sections being fashioned for interengagement with each other, and cooperating means upon and unitary with said frame and casing for holding certain of said sections in interlocked relation with their respective frame sides.

5. The combination with a rigid frame, of a casing attachable thereto comprising a plurality of sections corresponding respectively to the several sides of the frame and individually engageable therewith, said sections and frame sides having cooperating shoulders for limiting relative transverse movement of said sections and frame sides in one direction, the ends of adjacent sections being fashioned for interengagement with each other, and permanently attached means upon said frame engageable with certain of said sections to limit relative transverse movement of

said sections and frame sides in the opposite direction and to hold said sections in interlocked relation with their respective frame sides.

6. The combination with a rigid frame element, of a casing element attachable thereto comprising a plurality of sections corresponding respectively to the several sides of the frame element and individually engageable therewith, said sections and frame element sides having cooperating shoulders for limiting relative transverse movement of said sections and frame element sides in one direction, the ends of adjacent sections being fashioned for interengagement with each other, and means upon and unitary with one of said elements engageable with the other of said elements to limit relative transverse movement of certain of said sections and frame element sides in the opposite direction and to hold said last-mentioned sections in interlocked relation with their respective frame element sides.

7. The combination with a rigid frame element, of a casing element attachable thereto comprising a plurality of sections corresponding respectively to the several sides of the frame element and individually movable into engagement therewith, said sections and frame element sides having cooperating shoulders for limiting relative transverse movement of said sections and frame element sides in one direction, the ends of adjacent sections being fashioned to be secured to each other, means upon and unitary with one of said elements engageable with the other of said elements and adapted to limit relative transverse movement of said sections and frame element sides in the opposite direction, and means for interlocking with each other the ends of adjacent sections, thereby holding said sections interlocked with said frame element sides.

8. The combination with a rigid frame, of a casing attachable thereto comprising a plurality of separate knock-down sections corresponding respectively to the several sides of the frame and individually engageable therewith, said sections and frame sides having cooperating shoulders for limiting relative transverse movement of said sections and frame sides, the ends of adjacent sections being fashioned for interengagement with each other, and means upon said frame sides engageable with said sections during their engagement with said frame sides to hold said sections in interlocked relation with their respective frame sides when the ends of adjacent sections are secured to each other.

9. The combination with a rigid frame having side bars with each bar having a face normal to the plane of the frame, a portion projecting beyond said face and a portion overlapping said face, of a casing comprising a plurality of separate knock-down sections corresponding to said side bars, each section having a portion for extending between said normal face and said overlapping portion and also having a portion for interlocking with said projecting portion, each section being engageable with its corresponding side bar when arranged in a plane oblique thereto and interlocked when turned parallel to said normal face, and means for interlocking with each other the ends of sections forming adjacent sides, thereby holding the same interlocked with said frame.

10. The combination with a rigid frame, of a casing attachable thereto comprising a plurality of separate knock-down sections corresponding respectively to the several sides of the frame and individually engagable therewith, said sections and frame sides having cooperating shoulders for limiting relative transverse movement of said sections and frame sides, the ends of adjacent sections being fashioned for interengagement with each other, and lugs upon said frame sides engageable with said sections during their engagement with said frame sides to hold said sections in interlocked relation with their respective frame sides when the ends of adjacent sections are secured to each other.

11. The combination with a rigid frame, of a casing attachable thereto comprising a plurality of separate knock-down sections corresponding respectively to the several sides of the frame and individually engageable therewith, said sections and frame sides having cooperating shoulders for limiting relative transverse movement of said sections and frame sides, the ends of adjacent sections being fashioned for interengagement with each other, and buttons upon said frame sides engageable with said sections during their engagement with said frame sides to hold said sections in interlocked relation with their respective frame sides when the ends of adjacent sections are secured to each other.

VICTOR F. DEWEY.
JOSEPH N. McLOUGHLIN.