

July 29, 1941.

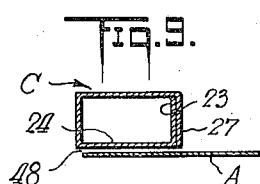
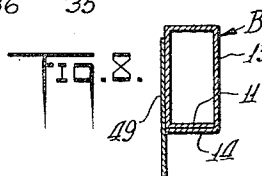
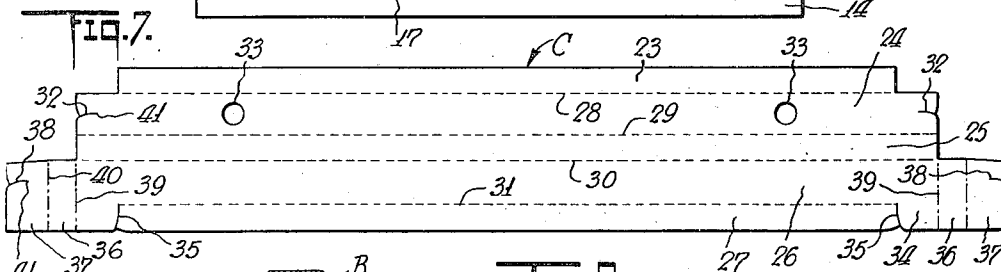
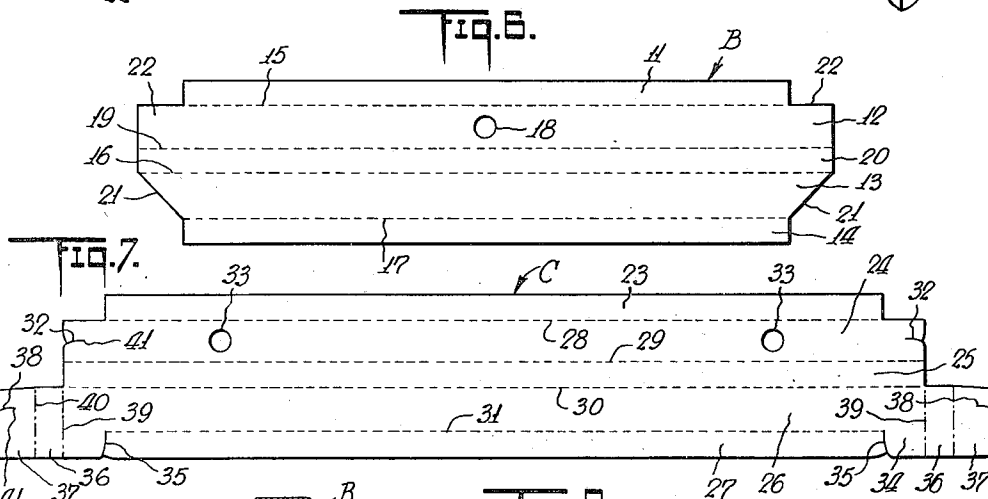
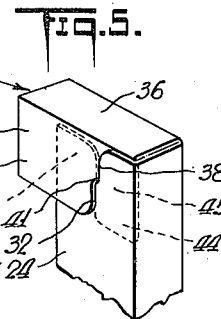
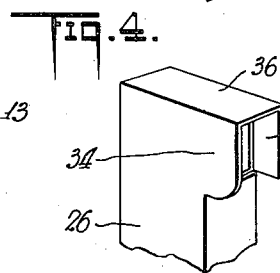
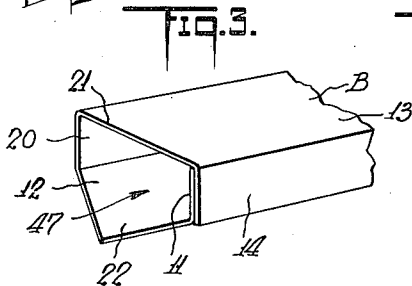
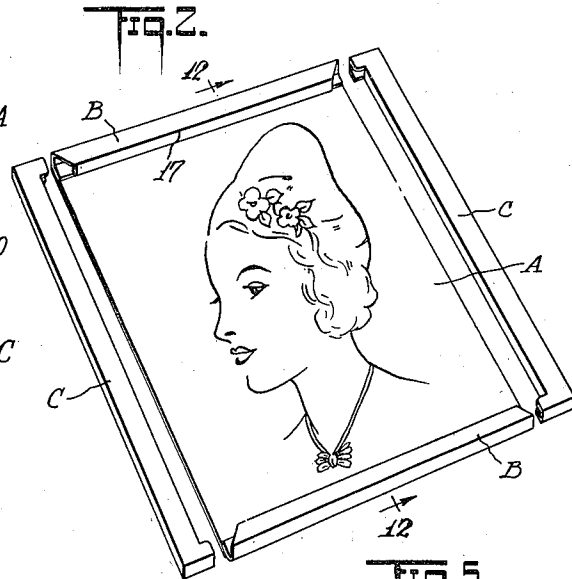
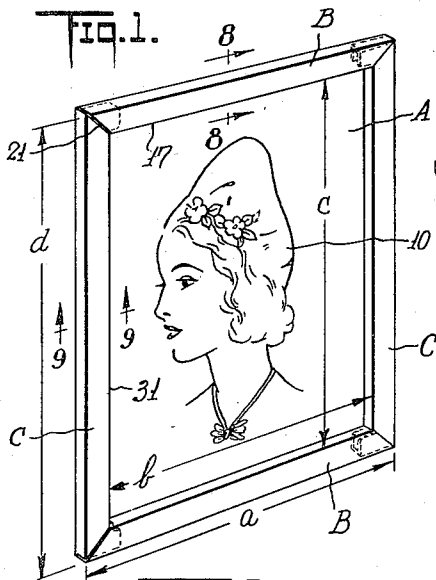
N. W. LURRAIN

2,250,491

FRAME CONSTRUCTION

Filed May 6, 1938

2 Sheets-Sheet 1



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July 29, 1941.

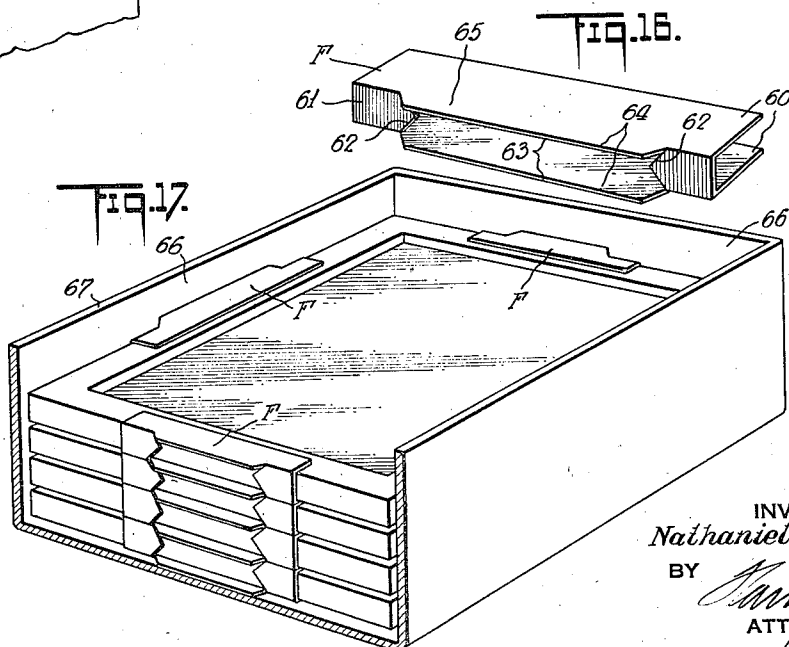
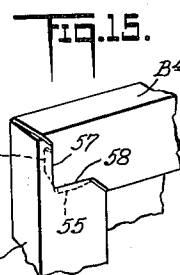
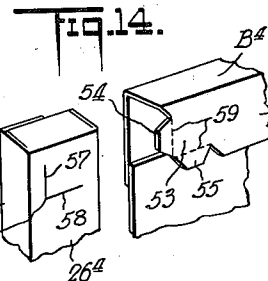
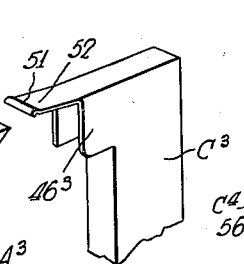
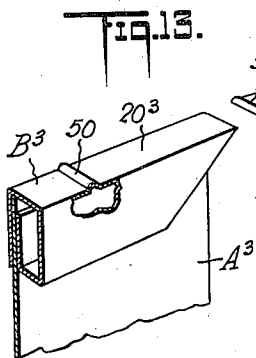
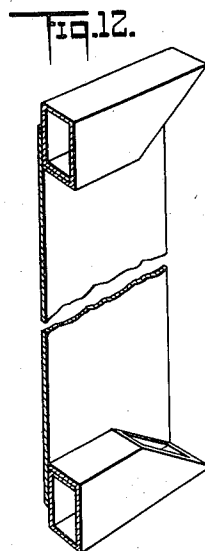
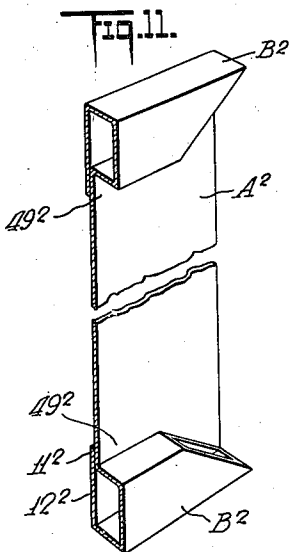
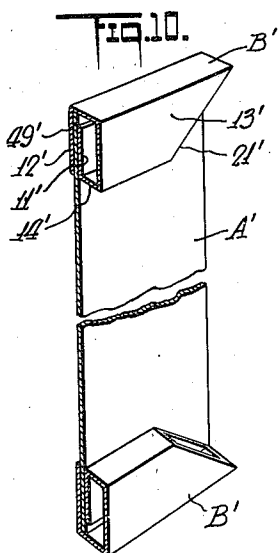
N. W. LURRAIN

2,250,491

FRAME CONSTRUCTION

Filed May 6, 1938

2 Sheets-Sheet 2



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UNITED STATES PATENT OFFICE

2,250,491

FRAME CONSTRUCTION

Nathaniel M. Lurraín, New York, N. Y.

Application May 6, 1938, Serial No. 206,346

9 Claims. (Cl. 40—154)

The present invention relates to a frame or mounting construction and it particularly relates to a knock-down frame or mounting construction.

In connection with the displays for advertising purposes at display booths, in store windows and so forth, it is often desirable artistically to mount and frame the particular display, whether it be on paper or canvas, without substantial expense and without the need for making special wooden frames for each type of display.

It is furthermore desirable that the displays be readily shipped from a central point of distribution, as in the case of chain stores, or where the advertising is distributed all over the country, and it is also desirable that the frames with advertisements be conveniently stored before utilization or after utilization and be capable of being wrapped compactly for shipping or storage.

Wooden frames and other special frames not only involve considerable expense, but also do not readily lend themselves to storage and shipment with economical space consumption and moreover they are not readily set up or dismantled by the average store keeper or displayer.

It is, therefore, among the objects of the present invention to provide a simple, inexpensive, readily assembled, knock-down frame construction which may be utilized with display panels of paper, fabrics or canvas, and which may be conveniently rolled up permitting it to be readily shipped and stored with minimum space consumption.

Another object is to provide a knock-down frame construction which will permit itself to be readily manufactured out of inexpensive and readily available sheet materials, and which, at the same time, will present advertising displays, whether they be on paper, canvas or cardboard, in a most artistic and attractive fashion and which, at the same time, may be readily shipped in knocked-down condition and set up or dismantled at a place of use by the average store keeper or retailer without difficulty.

Other objects will be obvious or will appear during the course of the following specification.

In accomplishing the above objects it has been found most satisfactory according to one preferred embodiment of the present invention to form a knock-down rectangular frame of four elements, which elements constitute the sides, top and bottom of the frame and which elements are designed to be readily interfitted and interlocked to form a rigid straight frame structure.

The frame element may be formed of any suitable sheet metal, such as thin sheet metal, thin

plastic materials and so forth, but it is desirably formed of paper stock, which when bent and folded will substantially retain its shape.

The thin sheet stock, whether it be paper or metal, which forms the side, top and bottom elements of the frame, is preferably formed of five section strips and is bent into rectangular form and the two end sections are overlapped. These overlapped sections may be pressed together and adhesively connected where the frame is constructed of paper or caused to be resiliently pressed together when the frame is formed of thin sheet metal.

The top and bottom members may be preferably adhesively associated with or caused to grip the display sheet, whether it be a calendar, picture or advertisement, and such display sheet may be integral with one of the sides of the upper and lower frame elements and be of the same thickness as the sheet material of said frame elements. Or the panel may be of relatively thin paper or fabric or canvas and adhesively attached to the back or inside of said top and bottom frame elements.

In connection with metal frame elements, the paper, fabric or canvas may be inserted between the overlapping portions thereof and resiliently gripped in position. The ends of the top and bottom frame members are preferably cut at an angle at their forward portions so as to form a bevelled or chamfered portion and the stock which forms the side members is preferably formed at the ends thereof so that it will have a transversely projecting portion which may be tightly telescoped inside of the ends of the top and bottom frame members.

Desirably a chamfered corner or diagonal corner junction is formed at the corners of the picture which adds to the attractiveness of the display.

With the removal of the side frames the display sheet if of thin, flexible paper, fabric or canvas, may be rolled up on the top and bottom frame members and then the side members may be included in the same package and the whole construction most conveniently and compactly stored or shipped.

In the drawings which illustrate several of the many various possible embodiments of the present invention, but to which the present invention is by no means restricted, since many changes and alternatives could be made, all within the scope of the present invention,

Fig. 1 shows a front perspective view illustrating the assembled frame and display in position therein,

Fig. 2 is a separated top perspective view upon a slightly enlarged scale as compared to Fig. 1 with the side frames separated from the end frames,

Fig. 3 is an enlarged fragmentary perspective view showing the end construction of the top and bottom frames,

Figs. 4 and 5 are enlarged fragmentary perspective views showing the forward and rear faces of the ends of the side frames,

Fig. 6 is a plan view of the blank upon a somewhat reduced scale as compared to Figs. 3 to 5, which may be folded to form the top and bottom elements,

Fig. 7 is a plan view of the blank which may be folded to form the side elements of the frame of Fig. 2 upon a somewhat reduced scale as compared to Figs. 3 to 5,

Figs. 8 and 9 are transverse fragmentary section views upon the lines 8—8 and 9—9 of Fig. 1 upon a reduced scale as compared to Figs. 3 to 5, but upon an enlarged scale as compared to Figs. 1 and 2.

Fig. 10 is a broken fragmentary longitudinal perspective sectional view illustrating the manner in which the metal top and bottom elements may be constructed and assembled with the display sheet,

Fig. 11 is also a broken fragmentary longitudinal perspective view of the top and bottom frames and display panel where the display panel is integral with the top and bottom frame elements,

Fig. 12 is a broken longitudinal fragmentary perspective sectional view of the display panel attached to the end members upon the line 12—12 of Fig. 2.

Fig. 13 is a separated fragmentary perspective view illustrating how the corners may be locked together in a metallic construction and showing the upper right corners of the top frame member and side frame member.

Figs. 14 and 15 illustrate an alternative corner construction showing in fragmentary perspective view the upper left hand corner of the frame, Fig. 14 being a separated view and Fig. 15 being an assembled view,

Fig. 16 illustrates a packing element in top perspective, which permits the frames of Figs. 1 to 15 to be assembled into a carton or package without danger of breaking and without looseness,

Fig. 17 illustrates the packing element of Fig. 16 in position on a plurality of frames assembled in a packing case or carton.

Referring to Figs. 1 to 9, the construction consists of a panel A, which may be of cardboard, fabric, paper, canvas, oil cloth, Cellophane and so forth, and which carries a suitable picture, design or other display 10. The frame is also provided with the top and bottom members B and with the side members C.

The top and bottom elements B and the side elements C are of rectangular cross section, as best shown in Figs. 8 and 9.

Referring to Fig. 6, the top and bottom elements B are formed of a paper, cardboard or stiff fabric blank having the five sections 11, 12, 20, 13 and 14, which are separated by the impressed fold lines 15, 19, 16 and 17. An opening 18 is provided which permits positioning on an hanging hook or nail and also indicates the back of the frame elements B.

The area on the back of the section 12 may

carry a gluing or adhesive compound for attachment of the display A.

Ordinarily in assembling the sections 11 and 14 are overlapped and the back of the section 14 is glued to the front of the section 11, as shown in Figs. 3 and 8.

In this gluing operation where the frame is formed of paper, the frame element B may be collapsed and put under pressure with the glue or other adhesive attached to the contacting faces of the portions 11 and 14. This pressure is relieved when the glue or other adhesive is dry. Then the collapsed frame B may be opened into rectangular form. The assemblage, as shown in Figs. 1 and 2, will automatically hold it in rectangular form.

The sections 12 and 20, respectively, forming the back and top of the frame elements B are of the full width of the frame, said width being indicated by the dimension a in Fig. 1.

The sections 11 and 14 are substantially shorter than the sections 12 and 20 and are of the same width as the inside of the frame, as indicated by the dimension b in Fig. 1.

The section 13 has chambered or oblique edges 21 which extend from the section 20 to the section 14, as indicated in Figs. 3 and 6.

As a result when the sections are folded together and glued, as indicated best in Fig. 3, the corner 22 at the back of the element B will project beyond the chamfered edge 21 at the front of the element B.

The side elements C, as best shown in blank form in Fig. 7, consist of the main sections 23, 24, 25, 26 and 27 connected by the fold lines 28, 29, 30 and 31. The ends of the section 24 are slit, as indicated at 32, and the intermediate portion of this section is provided with the openings 33, which are designed to indicate the rear face of the folded rectangular structure C.

The element 26 has extension portions 34 which are separated by the slits 35 from the ends of the section 27 and the enlarged portion of the section 26 is continued into the foldable sections 26 and 37. The section 37 is provided with the longitudinal slits 38. The sections 36 and 37 are connected to each other in the section 34 by the fold lines 39 and 40.

When the rectangular side elements C are assembled from the blank of Fig. 7, glue is applied to the back face of the section 27 and to the forward face of the section 23, which sections are overlapped, and the structure is collapsed while the glue is drying and afterwards is unfolded to rectangular cross section in the same manner as done with the top and bottom structures B.

It will be noted that the sections 23 and 27 are of the same length as the interior height of the frame indicated by the dimensions c in Fig. 1, while the sections 24 and 25 and the section 26 between the fold lines 39 are of the height of the exterior of the frame, as indicated by the dimension d of Fig. 1.

When the frame is folded together the portions 34 will project beyond the rectangular frame elements C and the sections 36 and 37 may be folded inwardly. The slots 32 and 38 may then be engaged to form the structure as best illustrated in Figs. 4 and 5.

It will be noted by reference to Fig. 5, that the slotted portions 32 and 38 fit into each other and abut at the point 41 at the ends of the slots 32 and 38, with the result that the section 42 of the flap 37 will overly the section 43 of the section 24, while the flap portion 44 at the end of

the section 24 will lie on top of the section 45 forming part of the section 37.

This will form a firm lock, as indicated in Figs. 4 and 5 between the sections 24, 34, 36 and 37, with portions of the sections 34, 36 and 37 projecting to form an insert box 46, as indicated best in Figs. 4 and 5, which insert box 46 is designed to be inserted in the opening 47 at the ends of the elements B.

The extension box 46 is preferably of such dimension that it will snugly fit inside of the end openings 47 of the sections B and will form a tight frictional fit.

The panel is preferably of such a length that when the boxes 46 are inserted in the openings 47, the panel A will be tightly stretched and will tautly underly the back section 24 of the structures B, as best indicated at 48 in Fig. 9.

The side members C and the top and bottom members B are interchangeable upon reversal and they may be most readily fitted together and removed in the manner indicated diagrammatically in Fig. 2 by the advertiser, store keeper, retailer or by anyone else who desires to frame the display.

When stored, the side elements C may be removed and the panel A may be rolled up upon the top and bottom sections B and the rolled up structure with the side elements C placed in an elongated container. The whole arrangement may be conveniently wrapped for mailing or shipping or may be conveniently stored without consuming substantial space and well protected from dirt and dust.

In Fig. 10 the panel A' may be of the same construction as in Figs. 1 to 9, but the frame element B' is of metal and may cooperate with side structures, not shown, which also may be of metal.

The sections 12' and 11' are caused to resiliently press against one another so as to tightly clamp the ends 49' of the panel A'. This resilient clamp may also be obtained with paper or plastic frame members by including metallic clips.

The metal sections B' may be extruded or folded out of thin sheet brass, copper, aluminum, tin or other metals or even out of plastic materials, such as synthetic resins, regenerated cellulose, cellulose acetate, casein and so forth.

In Fig. 10, similarly functioning elements are referred to by the same numerals and letters as in Figs. 1 to 9 however primed.

In Fig. 11 the panel A² is of stiff cardboard and is formed integrally with the end frame members B². The rear portions 12² of the top and bottom frame elements B² are provided with extensions 11² which are glued to the backs of the upper and lower edges 49² of the panel A².

In Fig. 13 is shown an alternative construction particularly designed for metal frame structures in which the top section 20³ of the top frame element B³ is provided with a locking groove 50. The groove 50 receives the projection 51 at the end of the locking tongue 52.

The structure of the side frame element C³ with its insertion box 46³ may be the same as that shown in connection with Figs. 1 to 9.

In the structure of Figs. 14 and 15, the front section 13⁴ of the top frame element B⁴ is provided with the extension element 53 having the side flaps 54 and 55, as best shown in Fig. 14. The side frame element C⁴ is not provided with the sections 34 and 36 and 37 forming the box 46, as indicated in Figs. 4 and 7, but is merely provided with the right angular slot 56 having

the portions 57 and 58. The slot 56 is cut in the face 26⁴ of said side element C⁴.

The flaps 54 and 55 may be bent downwardly on the fold lines 59 to be inserted in the slots 57 and 58, as best indicated in Fig. 15, thus locking the corners together.

In Fig. 16 is shown a packing holder F which may be made of stiff paper stock or even of sheet metal having the side flaps 60, which are preferably so spaced together as to closely fit upon the sides of the frame elements B and C.

The base 61 is cut, as indicated at 62 and 63 to form the outstanding flaps 64 and there is no fold line at 65. The edges 63 of the flaps 64 will contact the interior sides 66 of the box 67 assuring proper spacing of the frames when packed in a box and prevent crushing thereof.

It is thus apparent that the applicant has devised a simple frame construction which may be made readily of paper, cardboard, regenerated sheet cellulose, cellulose acetate films, thin sheet metal and so forth which will enable a most attractive display of advertising sheets or panels and which will most desirably frame such panels at a minimum of expense.

The frame may be readily assembled and dismantled and may also be most readily shipped and stored with most economical space consumption. It also may be hung by the openings 18 in homes or offices and different panels A may be attached by adhesive, as indicated in Figs. 1 and 9, or by resilient connection, as indicated in Fig. 10.

The panel A will at all times be held firmly and tautly.

When wrapping it is desirable to insert a sheet of paper to prevent contact between the corners of the elements B with the panel and when this is done the panel may be used repeatedly even though it may be dismantled several times.

The construction of the present invention differs from that shown in my prior Patent No. 1,899,815, dated February 8, 1933, among other respects, in that the top and bottom elements B and the side elements C when of rectangular cross section may be collapsed when the elements are being glued together and it is not necessary to use frames to hold them in position during the gluing operation.

Moreover the rectangular frame will give a better shadow because of the height of the edges 17 and 31 above the panel which gives a shadow effect.

The invention, however, is not intended to be restricted to any particular construction or arrangement of frame construction, or to any particular application of any such construction, or to any specific method of operation, or manner of use, or to any of various details thereof, herein shown and described, as the same may be modified in various particulars or be applied in many varied relations without departing from the spirit and scope of the claimed invention, the practical embodiments herein illustrated and described merely showing some of the various features entering into the application of the invention.

What is claimed is:

1. A knock-down frame construction comprising upper, lower and side frame elements, a panel carried by said frame elements, and means to connect said frame elements together to form a rigid structure to frame and display said panel, said means including rectangular openings in the ends of said upper and lower frame elements and transversely extending rectangular keys from the

upper and lower ends of the side frame elements received in said openings, each of said elements being formed from elongated strips of foldable material, which strips are folded together to form elements of hollow rectangular cross section, the side frame elements being provided with end flaps folding over to form said rectangular keys.

2. A knock-down frame construction comprising upper, lower and side frame elements, a panel carried by said frame elements, and means to connect said frame elements together to form a rigid structure to frame and display said panel, said means including right angular slots in the ends of said side elements and flaps extending from the ends of said top and bottom elements fitting into said slots.

3. A collapsible rectangular picture frame comprising a plurality of bars, each bar being formed of a bendable sheet metal blank folded to produce a rectangular cross section, and means having a plurality of friction surfaces for frictionally securing said bars together, said means being arranged at the respective ends of the respective bars, said friction means consisting of transverse extensions from two of the bars which fit in the ends of the intervening bars, said transverse extensions being formed by folding over flaps at the ends of at least two of said bars.

4. A collapsible picture frame comprising a frame structure having side bars and top and bottom bars, each of the bars being formed hollow and of rectangular shape and cross section, certain of said bars having one wall obliquely cut away at each end and other of said bars having folded extensions at each end presenting friction-retaining boxes adapted to be inserted into the ends of the other bars for holding the respective bars together in assembled relation.

5. A separable picture frame construction of sheet stock, comprising top, bottom and side frame members, each of said frame members being formed of a five-section folded blank, the end sections of which are overlapped and adhesively connected to each other at the inside edges of the frame elements to form bars of rectangular cross section and the ends of the side elements being provided with flap means, which, when folded together, will form transversely and inwardly projecting friction boxes to be inserted into the ends of the top and bottom members.

6. A blank for a collapsible frame comprising an elongated sheet member having four longitudinal fold lines dividing said blank into an outside edge section, an inside edge section, a face section, a back section, and a flap section to

underlap the inside edge section and be adhesively connected thereto, the inside and underlap sections of said blank being the same length as the inside dimension of the frame, and the back section and the outside edge section being of the same length as the outside dimension of the frame, and the face section having a chamfered edge extending from the outside section to the inside section.

7. A blank for a collapsible frame comprising an elongated sheet member having four longitudinal fold lines dividing said blank into an outside edge section, an inside edge section, a face section, a back section, and a flap section to underlap the inside edge section and be adhesively connected thereto, the inside and underlap sections of said blank being the same length as the inside dimension of the frame, and the back section and the outside edge section being of the same length as the outside dimension of the frame, said blank being provided with end flaps to fold over to form transverse extensions.

8. A blank for a collapsible frame comprising an elongated sheet member having four longitudinal fold lines dividing said blank into an outside edge section, an inside edge section, a face section, a back section, and a flap section to underlap the inside edge section and be adhesively connected thereto, the inside and underlap sections of said blank being the same length as the inside dimension of the frame, and the back section and the outside edge section being of the same length as the outside dimension of the frame, said blank being provided with end slits and flaps to lock said sections together in folded position.

9. A knock-down frame construction comprising upper, lower and side frame elements, a panel carried by said frame elements, and means to connect said frame elements together to form a rigid structure to frame and display said panel, said means including rectangular openings in the ends of said upper and lower frame elements and transversely extending rectangular keys from the upper and lower ends of the side frame elements received in said openings, each of said elements being formed from elongated strips of foldable material, which strips are folded together to form elements of hollow rectangular cross section, the side frame elements being provided with end flaps folding over to form said rectangular keys, said rectangular keys being provided with interlocking slits to hold the same together.

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