

Oct. 13, 1942.

B. SLANHOFF

2,298,427

FLOOR STAND

Filed May 5, 1941

3 Sheets-Sheet 1

FIG. 1.

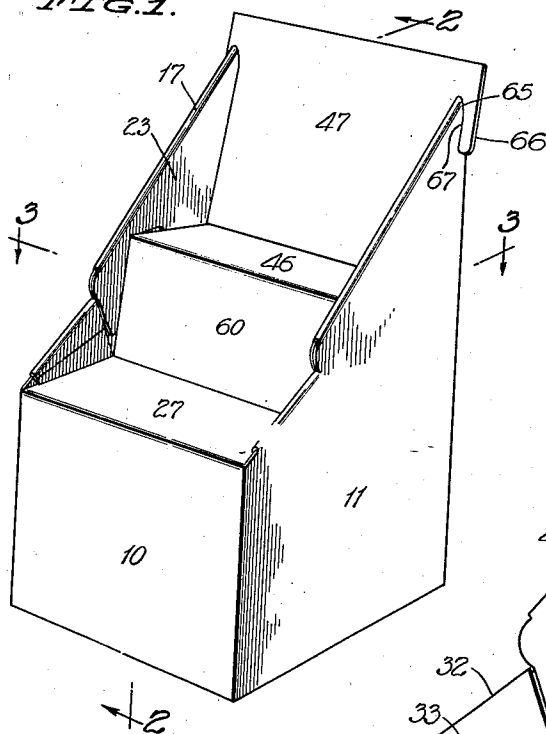
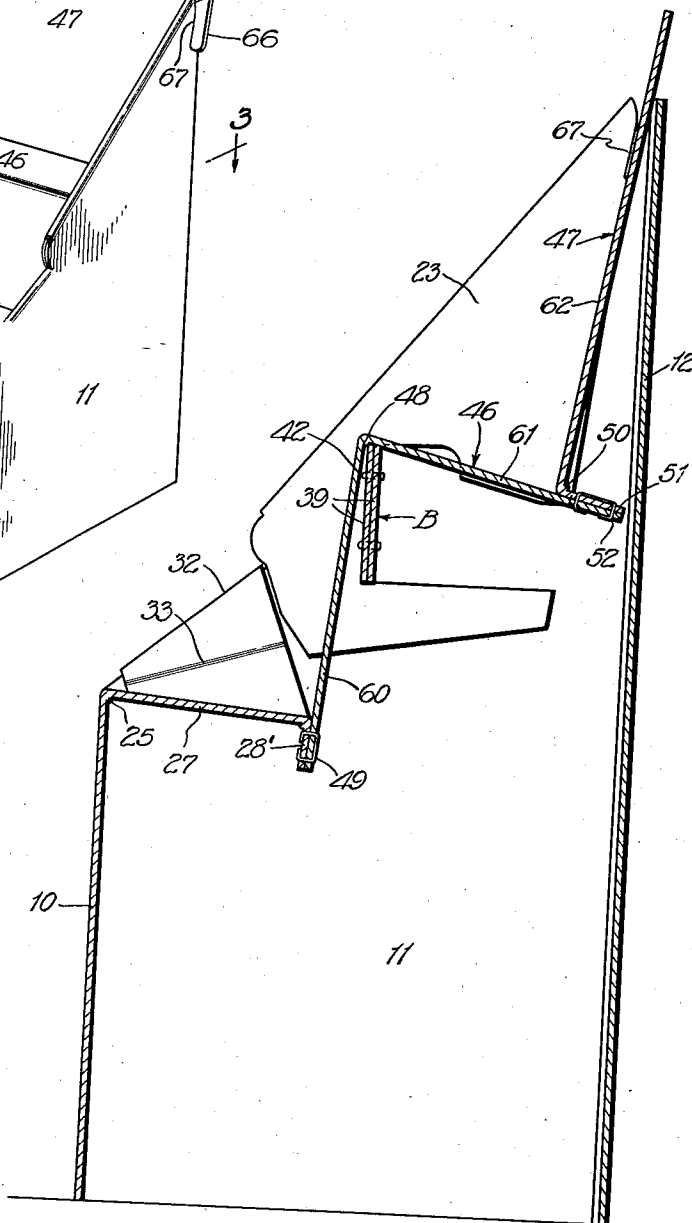


FIG. 2.



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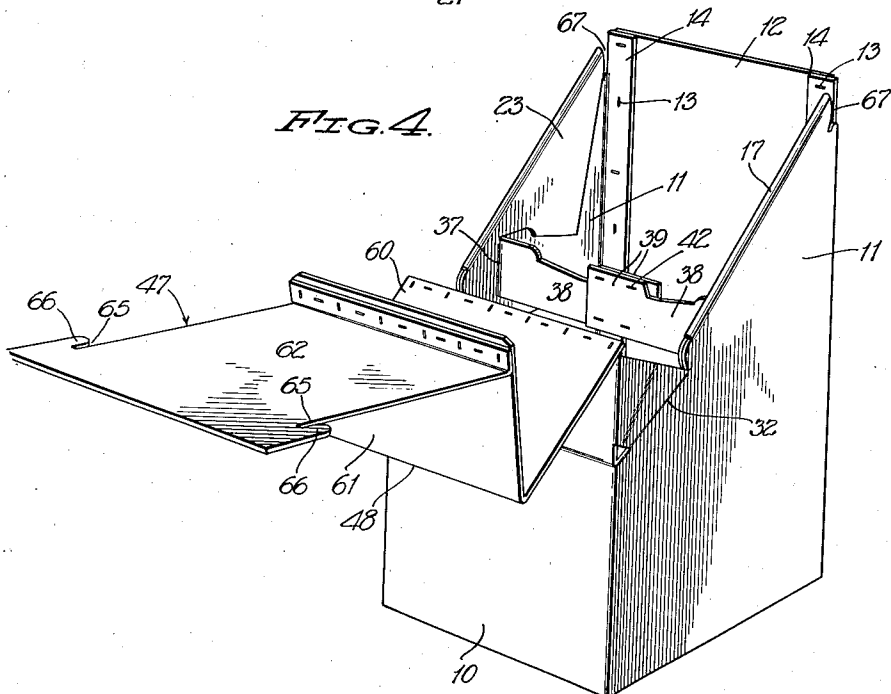
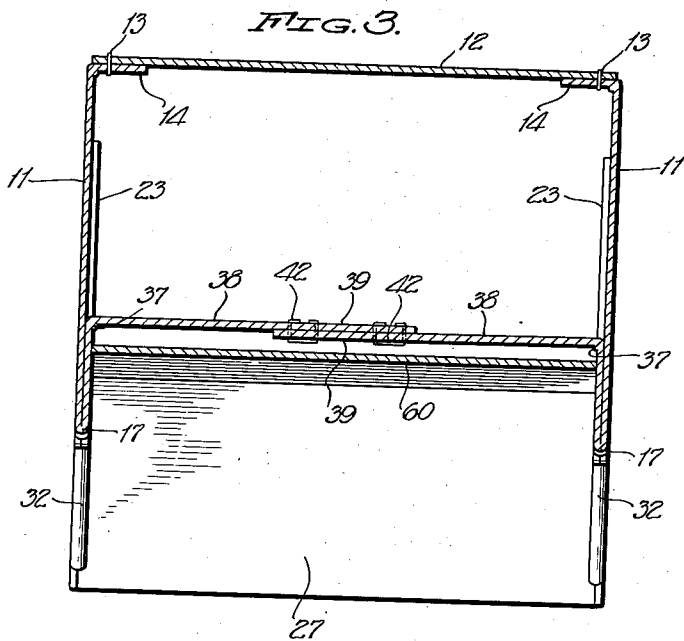
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FLOOR STAND

Filed May 5, 1941

3 Sheets-Sheet 2



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FIG. 5.

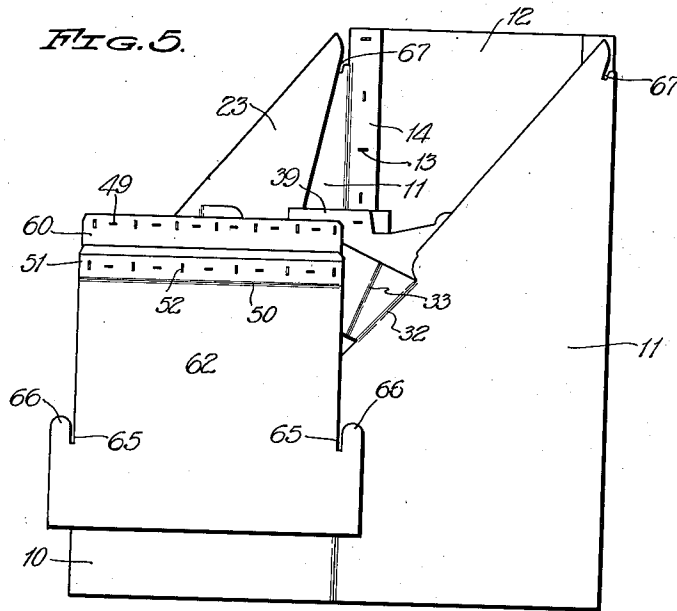
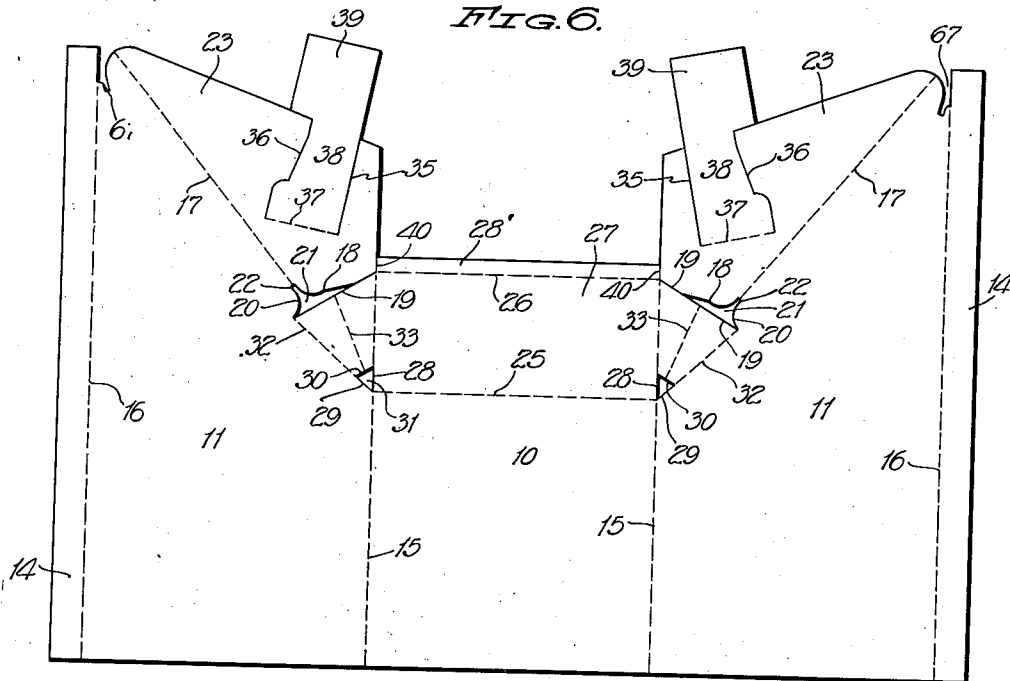


FIG. 6.



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UNITED STATES PATENT OFFICE

2,298,427

FLOOR STAND

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Application May 5, 1941, Serial No. 391,931

9 Claims. (Cl. 211—135)

This invention relates to new and useful improvements in display devices and more particularly it pertains to floor stands or bins.

It is one object of the present invention to provide a device of the aforementioned character which may be erected or knocked down with a minimum of effort and without damage to the device.

It is a further object of the invention to provide a novel construction by means of which an extremely high degree of strength and rigidity may be obtained by the use of foldable sheet material of which cardboard, corrugated paper board, and similar materials are good examples. This I consider an important feature, since it permits of the use of lighter and cheaper stock than is generally employed in the manufacture of such devices.

This feature is important since it permits of the use of a relatively cheap material which is not ordinarily adaptable to the manufacture of display devices of the floor stand or bin type wherein articles of merchandise of considerable weight are adapted to be supported.

It is still a further object of the invention so to construct the device that it will present a neat and attractive appearance and be simple of operation.

Still a further object of the invention resides in a novel construction which results in a unitary structure having no separate parts and requiring no separate securing elements to retain it in its set up position.

To the accomplishment of the foregoing objects, said invention, then, consists of the means hereinafter described and particularly pointed out in the claims, the annexed drawings and the following description setting forth in detail, one embodiment thereof.

In the drawings—

Figure 1 is a perspective view of a floor stand or bin constructed in accordance with the present invention;

Figure 2 is a vertical sectional view thereof taken substantially on the line 2—2 of Fig. 1, the view being taken on an enlarged scale;

Figure 3 is a horizontal sectional view taken substantially on the line 3—3 of Fig. 1, the view being taken on an enlarged scale;

Figure 4 is a perspective view of the device in a partially set-up position;

Figure 5 is a plan view of the device in its knocked-down position; and

Figure 6 is a plan view of the blank which

forms the front wall, side walls and shelf receiving section of the device.

A floor stand or bin constructed in accordance with the present invention comprises a lower supporting section and an upper shelf receiving section.

The lower supporting section is of tubular form, the shelf receiving section being superposed above the supporting section and consisting of a non-tubular structure having a rear wall and side walls, the forward edges of the side walls receding from the top of the tubular supporting section to form an open front and top for the shelf receiving section. The side walls and the rear wall of the shelf receiving section are continuations respectively of the side walls and rear wall of the supporting section, the front wall of the supporting section terminating at the base of shelf receiving section.

The front and side walls of the supporting section are preferably formed from one piece of material, the rear wall preferably being a separate piece of material secured by suitable fastenings preferably flanges 14 upon the rear edges of the side walls 11.

By reference to Fig. 6 it will be noted that the blank is scored along the lines 15 upon which lines it is bent to form the front wall 10 and the side walls 11, the side wall sections being scored along the lines 16 upon which the blank is bent to form the inwardly turned flanges 14 heretofore mentioned.

Each side wall is further scored in a diagonal direction along the line 17 and cut along the lines 18, 19 and 20 to provide a removable portion which forms an opening 21 of general triangular shape. Each of the score lines 17 merges with its respective cut lines 18 and 20 at the points designated 22 and this structure provides an inwardly folding wing section 23 on the upper edges of each of the side walls 11 which, as illustrated in Fig. 1 of the drawings, folds inwardly of its respective side wall and is suitably secured thereto, preferably by means of an adhesive.

The blank is also scored in a transverse direction upon the lines 25 and 26 to provide a panel 27 and a hinged flange 28 upon the upper edge of the front wall 10.

Each of the side walls 11 of the blank is also cut adjacent the score lines 15 on the outside thereof in a triangular manner as designated by the reference characters 28, 29 and 30 to provide a triangular shaped opening 31 in each of the side walls 11.

Leading from each of the cut lines 30, there

are two score lines 32 and 33, the upper ends of each of these score lines terminating upon its respective cut line 19.

The blank is further cut along the lines 35 and 36 and scored upon the lines 37 to provide folding sections 38, each of which extends beyond the end of its respective side wall as designated by the reference character 39.

The blank is also cut upon the lines 40 to permit of hinged movement of the flange 28' upon the score line 26.

The blank is folded upon the score lines 15 and 16 to provide the front wall 10, the side walls 11 and the inwardly turned flanges 14 after which the rear wall 12 is secured to the flanges 14 as heretofore stated, it being understood that the wing sections 23 of the side walls have been folded inwardly and secured in the manner heretofore described.

When the blank has been folded as described the sections 38 are folded upon their respective score lines 37 to bring their extended portions 39 into overlapping relation, in which relation they may be secured by staples or other suitable fastenings 42 as best illustrated in Fig. 3 of the drawings.

The panel 27 may then be folded upon its score line 25 to the position in which it is shown in Figs. 1 and 2 of the drawings in which position it forms the bottom shelf of a shelf section to be hereinafter more specifically described.

The score lines 32 and 33 together with the upper end portions of the score lines 15 provide triangularly shaped gussets which permit of the inward folding of the panel 27 by reason of the fact that the gussets not only fold upon the upper portions of the scored lines 15, but upon the score lines 32 and 33 which actions permit of the panel 27 moving inwardly of the shelf receiving section of the stand.

The shelf forming section consists, in the present embodiment of the invention, of a plurality of sections including the panel 27, a section 46 and a section 47. The section 46 is scored along the line 48 to permit it to fold on this line and is attached to the hinged flange 28 of the panel 27 by means of staples or similar suitable fastenings 49. The section 47 is scored along the line 50 to provide a flange 51 for attachment to the section 46, by means of staples or similar fastenings 52.

By reference to Figs. 2 and 3, it will be noted that the overlapping folding sections 38 when secured together by the fastenings 42 form a transversely extending brace which bridges the upper or shelf receiving section of the stand.

The aforementioned brace is designated B in the drawings and it performs two functions, namely, it serves to support the shelf section intermediate of its ends and it also serves to limit the movement of the shelf section in the shelf receiving section in a direction towards the rear thereof.

The section 46 of the shelf section forms a riser 60 for that shelf formed by the panel 27 and forms a shelf 61 extending from the top of the riser or the score line 48, to the lower portion of the section 47 of the shelf section, which section forms a riser 62 for the shelf 61, see Figure 2.

By reference to Fig. 2, it will be noted that the section 46 of the shelf section rests upon the transversely extending brace B. Also, by reason of the engagement of the riser 60 with said brace,

the extent of movement of the entire shelf forming section in a direction towards the rear wall of the stand is limited.

The riser 62 is cut out to form notches 65 and tongues 66, which are adapted for engagement in notches 67 formed in the upper edge of the side walls at the uppermost point thereof as best illustrated in Figs. 1 and 2. By this construction, when the notches 65 and 67 are engaged, the shelf 61 is partially supported from the side walls near their upper rear corners as best illustrated in Figure 2.

As illustrated in Figure 2, it will be seen that the shelf 27 is suspended from the forward edge of the shelf 61 which in turn rests upon the transverse brace B and is suspended from the upper rear corners of the side walls 11 by the section 47. In addition, the fastening elements 49 heretofore mentioned are relieved from the strain of the weight incident to articles of merchandise resting upon the shelf 27 by reason of the triangular gussets heretofore described which, when the shelf 27 is loaded with merchandise, take a portion of the strain resulting from the weight thereof, thus relieving the riser 60 from carrying all of the weight.

It has been found in actual practice that a floor stand constructed in accordance with the present invention will be of extremely strong and rigid construction, thus permitting the use of materials which are not capable of use in the manufacture of floor stands for carrying great weights without resorting to special structures.

Furthermore, the invention provides a device which may be readily knocked down to the folded position in which it is shown merely by lifting the riser 62 until the notches 65 are disengaged with the notches 66, and pulling the entire shelf section forward, said shelf section hinging about the score line 25, the gussets heretofore mentioned hinging about the upper ends of the score lines 15 and their respective score lines 32 and 33. This operation is illustrated in Fig. 4 of the drawings. After the shelf section has been folded outwardly of the stand, the stand is then folded flat upon the several score lines 15 and 16, in which position the shelf section being folded upon itself along the score line 48 will lie superimposed upon the collapsed main body portion of the stand.

It will also be noted that a floor stand constructed in accordance with the present invention, has no separable members or elements to be placed together when the stand is being set up, the entire structure being a unitary one.

Furthermore, it will be noted that the shelf section performs two functions, namely it provides the merchandise supporting shelves and it also serves to prevent collapse of the lower supporting section when folded into its shelf forming position in the shelf receiving section.

While in the present instance, the main body portion of the stand has been illustrated as having a separate rear wall and the shelf forming section has been illustrated as comprising two sections, it is to be understood that the invention is not to be specifically limited to this construction and that it is possible to form the entire device from a single blank of material if desired, and that such other changes as rightfully fall within the scope of the appended claims may be resorted to without departure from the spirit of the invention.

Having thus described the invention, what is claimed is:

1. A collapsible floor stand comprising a lower

supporting section of tubular form, the side and rear walls of said supporting section being extended to a point above the front wall thereof to provide a shelf receiving section disposed above the supporting section, and a shelf forming member comprising a plurality of hingedly connected panels, hingedly connected to the front wall of the supporting section and foldable means movably connected to the sides of a shelf forming panel and to the side walls of the shelf receiving section to provide a plurality of shelves and risers, the free end of the shelf forming section having interlocking engagement with the side walls of the shelf receiving section for retaining the shelf forming section in position within the shelf receiving section.

2. A collapsible floor stand comprising a lower supporting section of tubular form, the side and rear walls of the supporting section being extended to a point above the front wall thereof to provide a shelf receiving section disposed above the supporting section, a shelf forming section comprising a plurality of hingedly connected panels, hingedly connected to the front wall of the supporting section and foldable means movably connected at its lower end to the sides of a shelf forming panel and to the side walls of the shelf receiving section and adapted to fold inwardly thereof to provide a plurality of connected shelves and risers, a brace spanning the shelf receiving section for strengthening the side walls thereof and for limiting the extent of movement of the shelf forming member, inwardly of the shelf receiving section, and means for attaching the upper end of the shelf forming member to the side walls of the shelf receiving section at the top thereof.

3. A collapsible floor stand comprising a lower supporting section of tubular form, the side and rear walls of said supporting section being extended to a point above the front wall thereof to provide an open front shelf receiving section disposed above the supporting section, and a shelf forming member comprising a plurality of hingedly connected panels, hingedly connected to the front wall of the supporting section, foldable means movably connected to the sides of a shelf forming panel and to the side walls of the shelf receiving section and adapted to fold inwardly of the shelf receiving section to provide a plurality of shelves and risers, the free end of the shelf forming section having interlocking engagement with the side walls of the shelf receiving section at the upper ends thereof, and means for limiting the movement of the shelf forming section inwardly of the shelf receiving section, said means comprising a brace member extending transversely of the shelf receiving section intermediate of the top and bottom thereof.

4. A collapsible floor stand comprising a lower supporting section of tubular form, the side and rear walls of said supporting section being extended to a point above the front wall thereof to provide a shelf receiving section disposed above the supporting section, with a portion of each side wall of the shelf receiving section being folded inwardly to provide receding front side edges for the shelf receiving section, a shelf forming member comprising a plurality of hingedly connected panels, said shelf forming member being hingedly connected to the front wall of the supporting section and foldable to position within the shelf receiving section to provide a plurality of shelves and risers, scored web members integral with the inwardly folded por-

tions of the side walls of the shelf receiving section and with one of the shelf forming panels for supporting the ends of said panel when in shelf forming position, means spanning the shelf receiving section for limiting the movement of the shelf forming section inwardly of the shelf receiving section, and means for suspending the upper end of the shelf forming section from the side walls of the shelf receiving section.

5. A collapsible floor stand comprising a lower supporting section of tubular form, the side and rear walls of said supporting section being extended to a point above the front wall thereof to provide a shelf receiving section disposed above the supporting section with a portion of each side wall of the shelf receiving section folded inwardly to provide receding front side edges for the shelf receiving section, a shelf forming member comprising a plurality of hingedly connected panels, said shelf forming member being hingedly connected to the front wall of the supporting section and foldable to position within the shelf receiving section to provide a plurality of shelves and risers, means for detachably connecting the upper end of the shelf forming section to the side walls of the shelf receiving section, and a brace hingedly connected to each of the inwardly folded portions of the side walls of the shelf receiving section and extending transversely of the shelf receiving section for bracing the side walls of the shelf receiving section and for supporting the shelf forming section intermediate of its ends when it is in shelf forming position.

6. A collapsible floor stand comprising a lower supporting section of tubular form, the side and rear walls of said supporting section being extended to a point above the front wall thereof to provide a shelf receiving section disposed above the supporting section with a portion of each side wall of the shelf receiving section folded inwardly to provide receding front side edges for the shelf receiving section, a shelf forming member comprising a plurality of hingedly connected panels, said shelf forming member being hingedly connected to the front wall of the supporting section and foldable to position within the shelf receiving section to provide a plurality of shelves and risers, means for detachably connecting the upper end of the shelf forming section to the side walls of the shelf receiving section, and a brace hingedly connected to each of the inwardly folded portions of the side walls of the shelf receiving section and extending transversely of the shelf receiving section for bracing the side walls of the shelf receiving section, for supporting the shelf forming section intermediate of its ends when it is in shelf forming position, and for limiting the movement of the shelf forming section in a direction towards the rear of the shelf receiving section.

7. A collapsible floor stand comprising a lower supporting section of tubular form including a front wall, a rear wall and side walls permanently and hingedly connected together, the side and rear walls being extended to a point above the front wall to provide a shelf receiving section disposed above the supporting section, an inwardly folding wing section hingedly connected to the upper edge of the front wall of the supporting section and adapted to fold inwardly thereof, scored triangular panels hingedly connecting the ends of said wing section to the side walls of the supporting section, a shelf forming member comprising a plurality of hingedly connected panels secured at one end to the inwardly

folding wing section of the front wall and adapted to move therewith into shelf forming position within the shelf receiving section, and means for retaining the shelf forming member in shelf forming position within the shelf receiving section of the stand.

8. A collapsible floor stand comprising a lower supporting section of tubular form including a plurality of side walls, a front wall and a rear wall hingedly connected together, the side and rear walls of said supporting section being extended to a point above the front wall thereof to provide a shelf receiving section disposed above the supporting section, a wing section hingedly connected to each of the side walls and foldable into the shelf receiving section to provide receding upper edges for the side walls of said shelf receiving section, a shelf forming member comprising a plurality of hingedly connected panels, means for hingedly connecting the lower end of the shelf forming member to the front wall of the supporting section in a manner to permit of its movement into the shelf receiving section to shelf forming position between the inwardly folded wing sections of the side walls of the shelf receiving section, means for removably attaching the upper end of the shelf forming section to the upper ends of the side walls of the shelf receiving section, and means for engagement with the shelf forming section intermediate of its ends for

supporting the intermediate portion thereof, said means comprising hinged sections struck from the inwardly folded wings sections of the side walls of the shelf receiving section and secured together in overlapped relation.

9. A collapsible floor stand comprising a lower supporting section of tubular form including a plurality of side walls, a front wall and a rear wall hingedly connected together, the side and rear walls of said supporting section being extended to a point above the front wall thereof to provide a shelf receiving section, a shelf forming panel hingedly connected to the upper edge of the front wall of the supporting section, foldable means for hingedly connecting the ends of the shelf forming panel to their respective side walls of the shelf receiving section in a manner to permit of the shelf forming panel folding inwardly and outwardly of the shelf receiving section, a shelf forming member fixedly connected at one end to said shelf forming panel and adapted to move therewith, inwardly of the shelf receiving section, said shelf forming section comprising a plurality of hingedly connected panels, means for detachably connecting the upper end of the shelf forming member to the side walls of the shelf receiving section, and means for supporting the shelf forming member in shelf forming position in the shelf receiving section.

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