Oct. 16, 1928. 1,687,962

B. E. WILLETT

DISPLAY STAND

Filed May 4, 1926 4 Sheets-Sheet 1

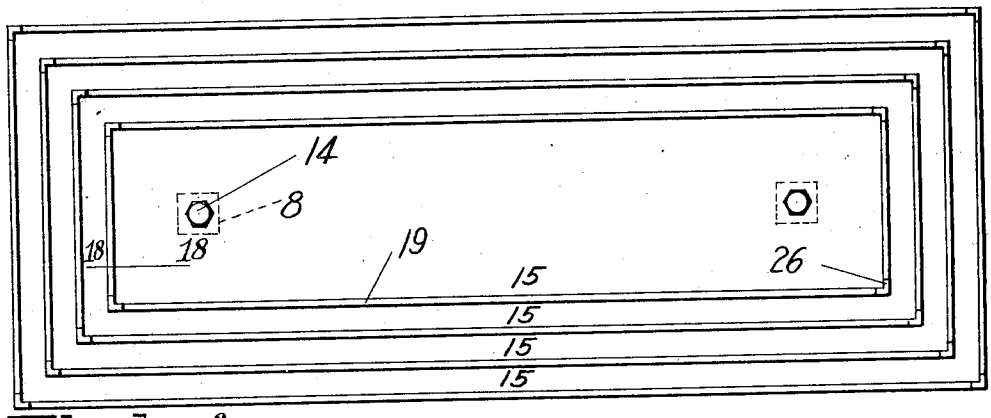


Fig. 1.

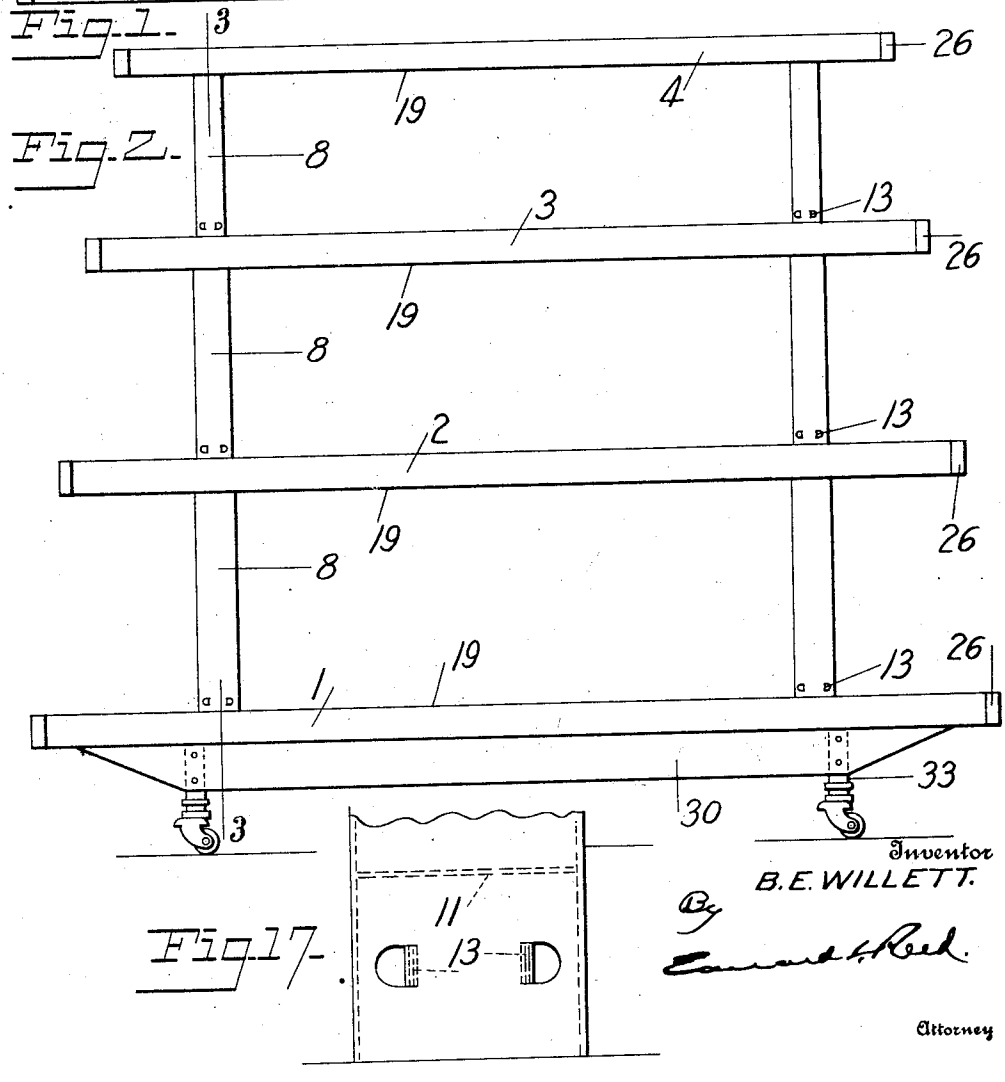


Fig. 2.

Fig. 17.

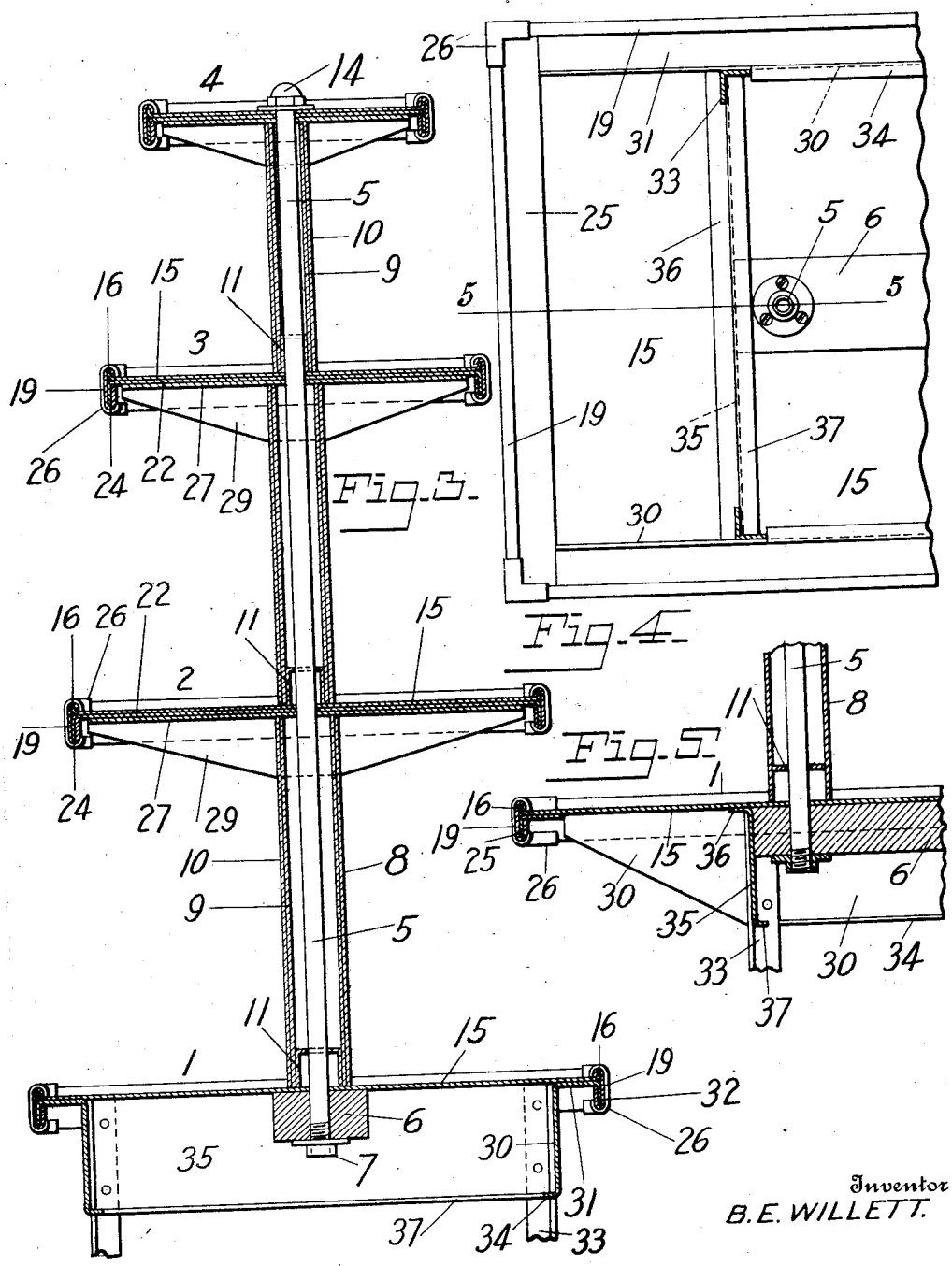
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DISPLAY STAND

Filed May 4, 1926 4 Sheets-Sheet 2



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DISPLAY STAND

Filed May 4, 1926 4 Sheets-Sheet 3

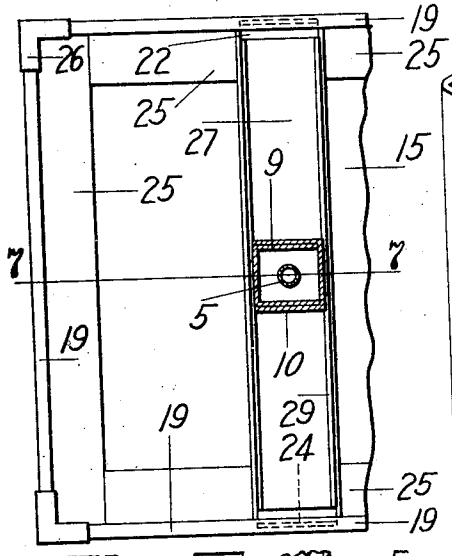


Fig. 6.

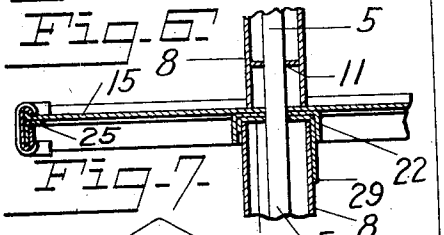


Fig. 7.

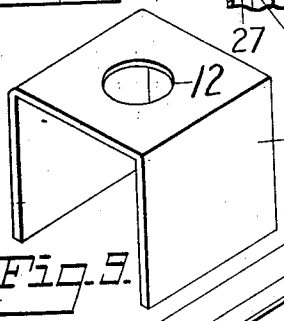


Fig. 8.

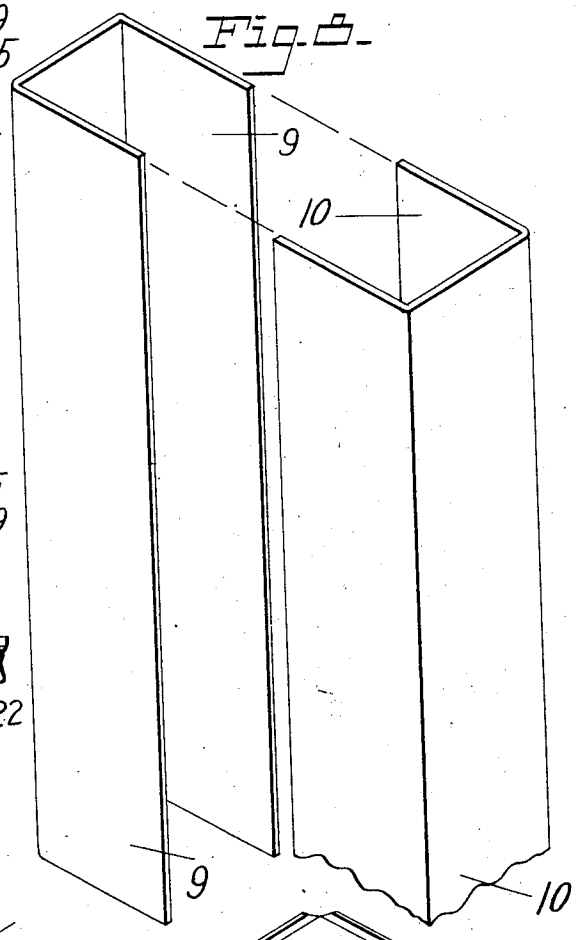


Fig. 9.

Fig. 11.

Fig. 10.

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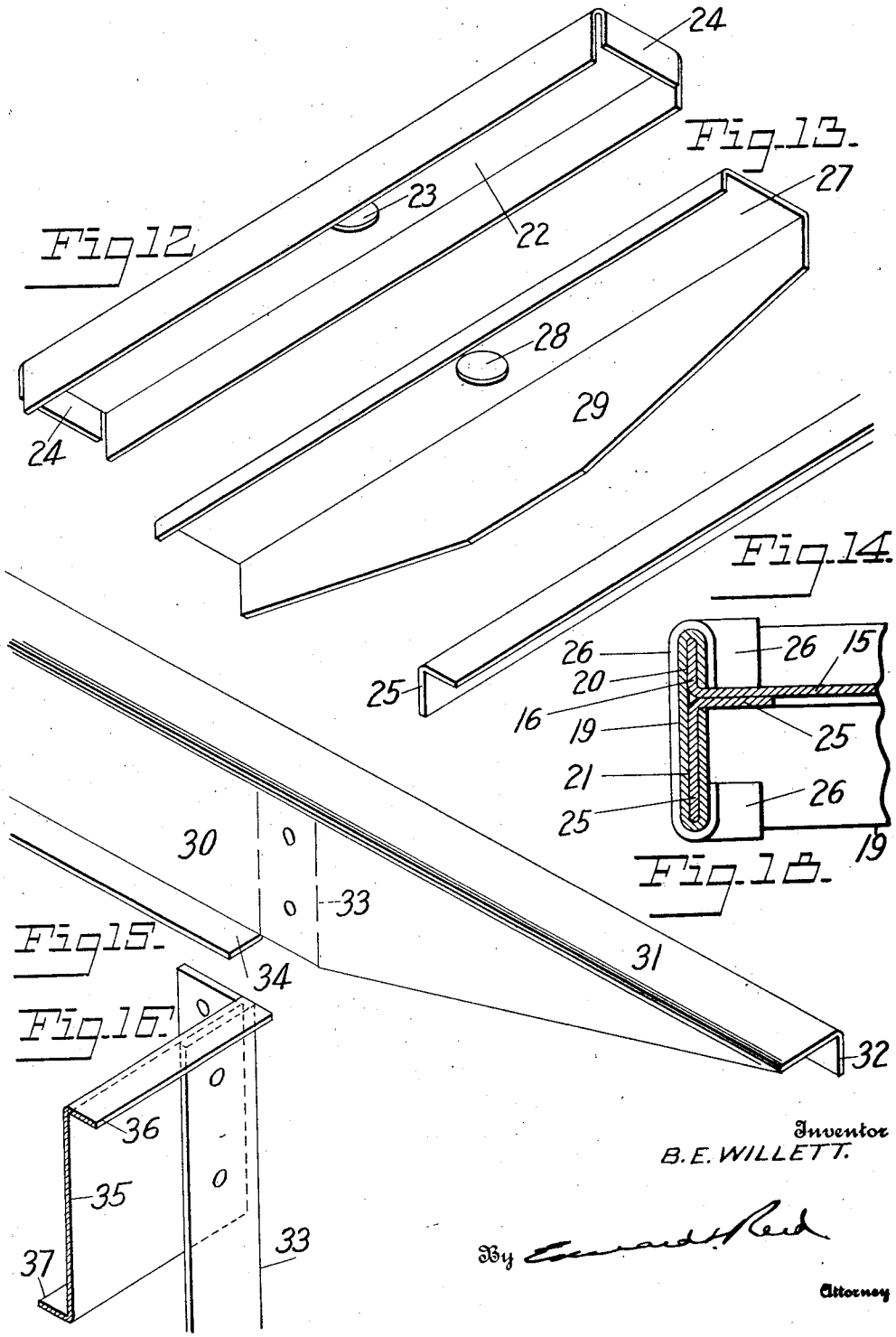
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DISPLAY STAND

Filed May 4, 1926 4 Sheets-Sheet 4



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Patented Oct. 16, 1928. 1,687,962

UNITED STATES PATENT OFFICE.

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DISPLAY STAND.

Application filed May 4, 1926. Serial No. 106,761.

This invention relates to display stands and one object of the invention is to provide a display stand which will be simple in construction, of a strong durable character and attractive in appearance.

A further object of the invention is to provide such a display stand which can be easily assembled and disassembled, thereby permitting it to be knocked down and arranged in compact form for shipment or storage.

A further object of the invention is to provide in such a display stand a merchandise supporting tray of simple inexpensive construction which can be easily assembled and will be strong and rigid.

Other objects of the invention will appear as the device is described in detail.

In the accompanying drawings Fig. 1 is a plan view of a display stand embodying my invention; Fig. 2 is a side elevation of the same; Fig. 3 is a longitudinal sectional view taken on the line 3—3 of Fig. 2; Fig. 4 is a bottom plan view, partly in section, of a portion of the base; Fig. 5 is a sectional view taken on the line 5—5 of Fig. 4; Fig. 6 is a bottom plan view of one of the trays with the standard and spacing element in section; Fig. 7 is a longitudinal sectional view taken on the line 7—7 of Fig. 6; Fig. 8 is a detail view of one of the spacing elements, partly broken away, showing the two members thereof separated; Fig. 9 is a detail view of the positioning device for the lower end of the spacing element; Fig. 10 is a detail view of the body of the tray; Fig. 11 is a perspective view of one of the side walls of the tray; Fig. 12 is a perspective view of one of the channels constituting a part of the transverse brace for the tray; Fig. 13 is a perspective view of the other member of the transverse brace; Fig. 14 is a perspective view of a portion of one of the supporting members interposed between the body and side wall of the tray; Fig. 15 is a perspective view of a portion of the base; Fig. 16 is a detail view showing one of the transverse members of the base and the supporting standards; Fig. 17 is a detail view showing the means for connecting the two members of the spacing element; and Fig. 18 is a section taken on the line 18—18 of Fig. 1.

In these drawings I have illustrated one embodiment of my invention but it will be understood that this particular embodiment has been chosen for the purpose of illustration only and that the display stand as a whole, as well as the various parts thereof, may take various forms without departing from the spirit of the invention.

In the particular embodiment of the invention here illustrated the display stand comprises a base 1 above which are supported a plurality of trays, 2, 3 and 4, these trays being arranged one above the other and spaced apart so as to provide above each tray ample space for the display of merchandise. In the present instance, the base 1 is so constructed that it also constitutes a tray for the receipt of merchandise, thus providing the stand with four trays. Obviously the number and size of the trays may be varied to accommodate the same to various purposes. Likewise the trays may be of any suitable character. In the present instance they are rectangular in shape and comprise shallow receptacles designed to receive vegetables, fruits or similar articles of various kinds but it will be understood that the character of the tray will be determined, in part at least, by the character of the merchandise which is to be displayed thereon and that the term "tray" is intended to include any structure which will properly support the merchandise. As here shown, each of the upper trays is of a slightly less length and width than the next lower tray, thus giving the display stand an attractive appearance, facilitating the display of merchandise and increasing the accessibility thereof.

The several trays may be supported above the base in any suitable manner and, as here shown, one or more standards 5 extend upwardly from the base and through the several trays. Associated with the standard or standards are suitable means for maintaining the trays in proper positions with relation one to the other and with relation to the base and for holding the same rigidly in position. The number of standards employed will depend upon the size and shape of the trays. The trays of the present stand being of an oblong shape I have utilized two standards arranged near the respective ends of the display stand. As here shown, the combined base and tray 1 is provided beneath the body or supporting wall thereof with a reinforcing member 6 which extends lengthwise thereof and may be of wood or any other suit-

able material. This reinforcing member serves as a support for the standards 5 and also imparts to the body of the tray a strength sufficient to carry the load imposed thereon by the upper trays. The reinforcing member 6 has formed therein vertical openings through which the standards 5 extend and at the lower end of each opening a connecting member or socket 7 is secured and provides means for connecting the standard with the reinforcing member. Preferably the socket 7 is screw threaded so that the standard may be screwed into and out of the same, thus enabling a standard to be very quickly and easily placed on or removed from the supporting base. The reinforcing member is of a considerable thickness and the standard fits snugly within the opening therein so that it will be held firmly in an upright position and prevented from wobbling.

The means for properly spacing the several trays and holding the same rigidly against movement with relation to the standard may take various forms but I prefer to utilize for this purpose tubular spacing elements 8 which are interposed between adjacent trays and which extend about the standard 5. These tubular spacing elements are of a diameter considerably greater than the diameter of the standard so that the ends thereof will engage the respective trays at points spaced from the standards, thus providing a firm and relatively broad support for the spacing elements on the lower trays and for the upper trays upon the ends of the spacing elements. As here shown, the spacing elements are formed of sheet metal and each comprises two members, 9 and 10, each of which is substantially U-shaped in cross section and one of which is sufficiently smaller than the other to enable it to fit snugly between the lateral walls thereof, thereby providing a four sided tubular structure substantially rectangular in cross section. Inasmuch as the spacing element is of an interior diameter considerably greater than the diameter of the standard I place within the lower end of each spacing element a positioning device 11, (see Fig. 9) which is in the form of a U-shaped member of a width substantially equal to the interior diameter of the spacing element and the lower edges of which rest upon the tray, the transverse portion of the U-shaped member having an opening 12 through which the standard may extend. The two members of the spacing element may be secured one to the other by rivets, or in any suitable manner, but, in the present instance, I have struck from the walls of the spacing element and from the contacting walls of the positioning member 11, tongues of metal 13, as shown in Fig. 17, which are bent laterally to firmly unite these parts thus providing a very simple and strong connection between the parts. I have shown fastening devices at the lower ends only of the spacing elements for the reason that the upper ends are otherwise held against displacement, as will hereafter appear. I have also shown the several spacing elements associated with each standard as of different diameters, each upper element being of less diameter than the next lower element. This not only accommodates the spacing elements to the particular trays with which they are associated but it also imparts to the structure as a whole a more pleasing appearance.

To assemble the device the standards are first screwed into the sockets 7 and the spacing elements and trays are then successively placed in position on the standards. The upper ends of the standards will then project slightly above the wall or supporting surface of the upper tray 4, and a nut 14 is threaded onto the upper end of each standard and serves to retain the trays thereon and, further, to clamp the several parts in firm engagement so that they will be held against relative movement. It will be noted that the upper tray is clamped between the nut and the upper end of its spacing element and that the intermediate trays are clamped between the ends of adjacent spacing elements, and when the nut 14 is tightened down these trays will be very rigidly held in position. It will be obvious that by removing the nut 14 the several trays and spacing elements may be quickly and easily removed from the standards and the standards removed from the sockets so that the whole may be packed on the base in a very compact bundle.

The trays may be of any suitable construction but that here shown is such as to provide a tray of relatively light weight which will be of a strong durable character and will be attractive in appearance. As here shown, each tray is formed from sheet metal and comprises a body portion 15 consisting of a plate of sheet metal having its edges turned upward at the four sides and forming flanges 16, the ends of the flanges being cut away or beveled, as shown at 17. This plate is provided with apertures 18 through which the standards 5 may extend. The four side walls for the tray are attached to the body portion 4 by means of the flanges 16 and in the construction here shown, each side wall comprises a strip of metal 19 having its longitudinal edges bent upon itself to form upper and lower channels 20 and 21, the edges of the strip being spaced apart to form a slot along the inner side of the side wall. This side wall is applied to the body portion of the tray by moving the same lengthwise on the edge of the body portion with the flange 16 extending into the upper channel 20 of the side wall and with the edge of the lower channel beneath the body portion 15. The four side walls are respectively of a

length corresponding substantially to the length of the respective edges of the body portion of the tray and when in position will project above and below said body portion, as shown in Fig. 7. The tray is provided adjacent to each standard with a transverse supporting structure which serves to so strengthen the body portion of the tray as to enable it to carry the load imposed thereon without being distorted. In the present construction, this supporting structure comprises a channel bar 22 having in its upper transverse wall an opening 23 through which the standard may pass. At each end the transverse portion of the channel is provided with a downturned rib 24 spaced from the ends of the vertical flanges a distance sufficient to enable it to enter the lower channel of the adjacent side wall 19. After the two longitudinal side walls have been placed in position on the body portion of the tray this reinforcing member 22 is placed beneath the body portion of the tray by inserting the lips 24 in the open ends of the lower channels 21 of the respective side walls and slipping the same along said channels until the opening 23 is in line with the opening 18. The slots in the inner sides of the side walls are of a width substantially equal to the combined thickness of the body portion 15 of the tray and of the transverse portion of the reinforcing member 22, so that when this reinforcing member is in position beneath the body portion the two parts will substantially fill the slot. I also prefer to insert in the lower channels 21 of the side member, angle bars 25 the vertical flanges of which rest within the channels 21 and the horizontal portions of which extend beneath and in contact with the lower surface of the body portion 15 of the tray. These angle bars, or filler strips, are inserted in the lower channel of each side wall. Along the longitudinal edges of the tray the filler strip is divided into three parts, one of which is arranged between the two reinforcing members 22 and the others of which are arranged between the respective reinforcing members and the ends of the tray. These angle bars or filler strips serve to fill in the space between the edge of the lower channel and the lower surface of the body portion and to provide a relatively wide contact with the body portion so that the side walls and body portion are held against relative displacement. Further, they serve to properly position the transverse reinforcing members 22 with relation to the body portion of the tray. After the several side walls have been placed in position on the body portion of the tray they may be secured thereon in any suitable manner, but I preferably accomplish this by applying corner pieces or angle clips 26 to the adjacent ends of the side walls of the respective corners of the tray, these clips being bent about the ends of the respective side walls and pressed firmly into engagement therewith.

The transverse reinforcing structure may also include a second channel shaped member 27, which fits within the channel 22 and is provided with an opening 28 adapted to register with the opening 23 in the channel 22 and one flange of which is of relatively great width, as shown at 29, and is truss shaped to further reinforce the channel. This transverse member 27 is of such a width that the upper end of the spacing element 8 which supports that particular tray will fit snugly within the same, as shown in Fig. 7. The member 27 may, if desired, be secured to the spacing element but this is not necessary as the parts will be held firmly in their proper relative positions when the display stand is assembled and the nuts 14 on the standard tightened down.

The combined base and tray 1 is quite similar in construction to the other trays and comprises a body portion 15 and side walls 19 which are held in position by the corner pieces or clips 26. As has been stated, the body portion 15 of the tray 1 is reinforced by a longitudinal bar 6 and on each side of this bar and spaced from the edges of the tray are longitudinally extending plates 30 having their upper portions bent outwardly, as shown at 31, and arranged in supporting contact with the body portion of the tray, and having their outer edges bent downwardly, as shown at 32, to enter the lower channels in the side members 19. Rigidly secured to these side plates or flanges 30, adjacent to the standards 5, are supporting members or legs 33, here shown in the form of angle irons riveted to the side plates. Those portions of the side plates between the legs 33 have their lower portions bent inwardly, as shown at 34, to provide flanges to stiffen the plates 30. Extending transversely to the base, at each end of the longitudinal reinforcing bar 6, is a vertical plate 35, which is rigidly secured at its ends to the respective legs 33 and has at its upper edge a flange 36 in supporting engagement with the body portion 15 of the tray and has at its lower edge a stiffening flange 37.

The construction of the trays as here described, is not only a very inexpensive one, because of the ease with which the parts may be formed and assembled, but it provides a tray which, while of very light weight, is of a very strong rigid construction and will support its intended load without being distorted. Further, the manner of assembling the parts avoids the use of rivets or bolts and thus provides a smooth surface which, when properly finished, gives the tray an attractive appearance.

While I have shown and described one embodiment of my invention I wish it to be

understood that I do not desire to be limited to the details thereof as various modifications may occur to a person skilled in the art.

Having now fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a display stand, a base, a standard secured to and extending upwardly from said base, a tubular spacing element supported by said base and extending upwardly about said standard, a tray supported by said spacing element and having an opening through which said standard extends, said tray comprising a body portion, a channel shaped reinforcing member extending transversely to said body portion beneath the same, and a second channel shaped reinforcing member fitting within the first mentioned reinforcing member and adapted to receive the upper end of said spacing element, and means connected with the upper end of said standard to retain the several parts in their assembled positions.

2. In a display stand, a tray comprising a body portion having flanged edges, side walls having channels to receive the flanged edges of said body portion and adapted to be applied to said body portion by movement lengthwise thereof, and retaining devices applied to the adjacent ends of said side walls at the corners of said tray.

3. In a display stand, a tray comprising a body portion having upwardly extending flanges at the several edges thereof, side walls having upper and lower channels, the upper channel of each of said side walls being adapted to receive a flange at one edge of said body portion when said side wall is moved lengthwise of said body portion, angle strips each having a vertical flange supported in the lower channel of one of said side walls and a horizontal flange extending beneath said body portion, and retaining devices applied to the adjacent ends of said side walls at the corners of said tray.

4. In a display stand, a tray comprising a body portion having an upwardly extending flange at each edge thereof, a transverse reinforcing member arranged beneath said body portion and having at its ends depending lips arranged in substantially the same vertical planes with the flanges at the corresponding edges of said body portion, side walls having upper channels to embrace the flanges on said body portion and lower channels to embrace the lips on said reinforcing member, angle strips having vertical flanges inserted in the lower channels of said side walls and having transverse flanges extending inwardly beneath said body portion, and means for retaining said side walls in position on said body portion.

5. In a display stand, a tray comprising a body portion having upwardly extending flanges at the several edges thereof, side walls each comprising a strip of metal having its upper and lower edges bent upon itself to form upper and lower channels and a slot communicating with said channels, whereby said side wall may be applied to said body portion by moving the same lengthwise thereof with one of said flanges in the upper channel of said side wall, a reinforcing member arranged beneath said body portion and having lips extending into the lower channels of two of said side walls, and angle strips having vertical flanges arranged within the lower channels of said side walls and transverse flanges extending inwardly beneath said body portion, and clips pressed onto the adjacent ends of said side walls at the corners of said tray.

6. In a display stand, a tray comprising a body portion having an upwardly extending flange at each edge thereof, a transverse reinforcing member arranged beneath said body portion and having at its ends depending lips arranged in substantially the same vertical planes with the flanges at the corresponding edges of said body portion, side walls having upper channels to embrace the respective flanges on said body and lower channels to embrace the lips on said reinforcing member, and means for retaining said side walls in fixed positions with relation one to the other.

7. In a display stand, a tray comprising a body portion having upwardly extending flanges at the several edges thereof, side walls each comprising a strip of metal having its upper and lower edges bent upon itself to form upper and lower channels and a slot communicating with said channel, whereby said side wall may be applied to said body portion by moving the same lengthwise thereof with one of said flanges in the upper channel of said side wall, a reinforcing member arranged beneath said body portion and having lips at its ends extending into the lower channels of two of said side walls, and clips pressed onto the adjacent ends of said side walls at the corners of said tray.

8. In a display stand, a base comprising an upper portion constituting a tray and having upwardly extending flanges at the edges thereof, side plates extending lengthwise of said base beneath the same and having laterally extending portions engaging said body portion and provided at their outer edges with downwardly extending flanges, side walls mounted on the edges of said body portion and having upper channels to receive the flanges on said body portion and lower channels to receive the flanges of said longitudinal plate, supporting legs rigidly secured to said plates, and transverse reinforcing members arranged near the respective ends of said base and rigidly secured to the respective legs.

9. In a display stand, a base, a plurality of trays arranged above said base and spaced one from the other, a standard extending upwardly from said base through the several

trays, spacing elements surrounding said standard for maintaining said trays in proper spaced relation one to the other, each spacing element comprising two channel-shaped members adapted to fit one within the other to form a tubular element, and devices carried by said trays to receive the upper ends of the respective spacing elements to retain the two members thereof in their assembled positions and to position said spacing elements in spaced relation to said standard.

10. In a display stand, a base, a plurality of trays arranged above said base and spaced one from the other, a standard extending upwardly from said base and through the several trays, spacing elements surrounding said standard and supported respectively on the lower trays and said base and each having supporting engagement with an upper tray, each of said trays having a transverse reinforcing member arranged beneath the same, provided with an opening to receive said standard and having flanges to engage the corresponding spacing elements to retain the same in spaced relation to said standard.

11. In a display stand, a base having an upper portion forming a tray, a reinforcing member arranged beneath said upper portion of said base and having an opening therethrough, a socket member rigidly secured to said reinforcing member at the lower end of said opening, a standard extending through the opening in said reinforcing member and into said socket member, said socket member and said standard having cooperating parts to retain said standard in said socket member, a plurality of trays arranged one above the other, each having an opening through which said standard extends, spacing elements arranged about said standard to support the respective trays in proper relation one to the other and to said base, means carried by the upper end of said standard to retain the several parts in their assembled positions.

12. In a display stand, an elongated base having an upper portion forming a tray, a reinforcing member extending lengthwise of said base beneath said upper portion thereof and having openings therethrough, a socket member carried by said reinforcing member at the lower end of each of said openings, standards extending through the respective openings in said socket members, said standards and said socket members having cooperating parts to retain said standards in said socket members, a plurality of trays arranged above said base and spaced one from the other and each having openings through which said standards extend, spacing elements surrounding the respective standards between adjacent trays and serving to support the respective trays in proper positions with relation one to the other, transverse reinforcing members arranged beneath each tray, having openings to receive the respective standards and each having flanges at the lateral edges thereof to embrace the respective spacing elements, and means carried by the upper end of each standard to secure the several parts in their assembled positions.

In testimony whereof, I affix my signature hereto.

BENEDICT E. WILLETT.