

Jan. 2, 1962

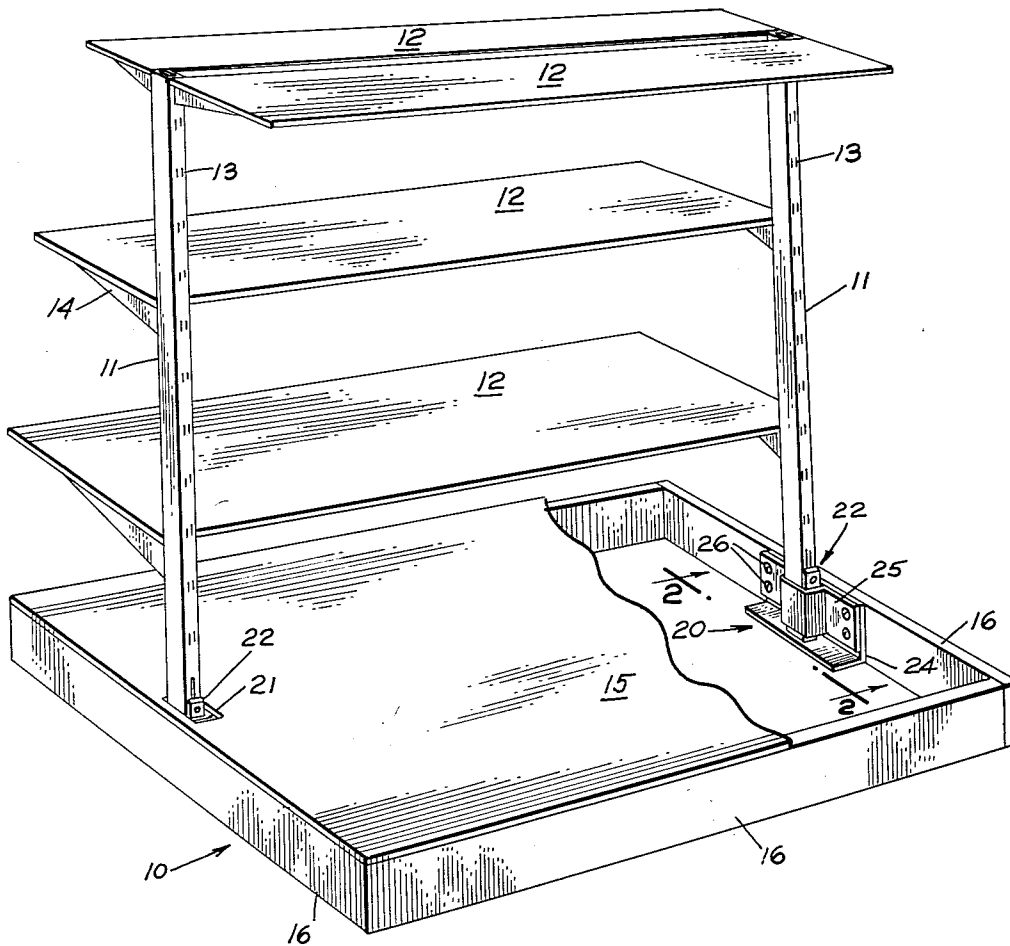
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3,015,466

Filed Oct. 29, 1959

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FIG. 1 1



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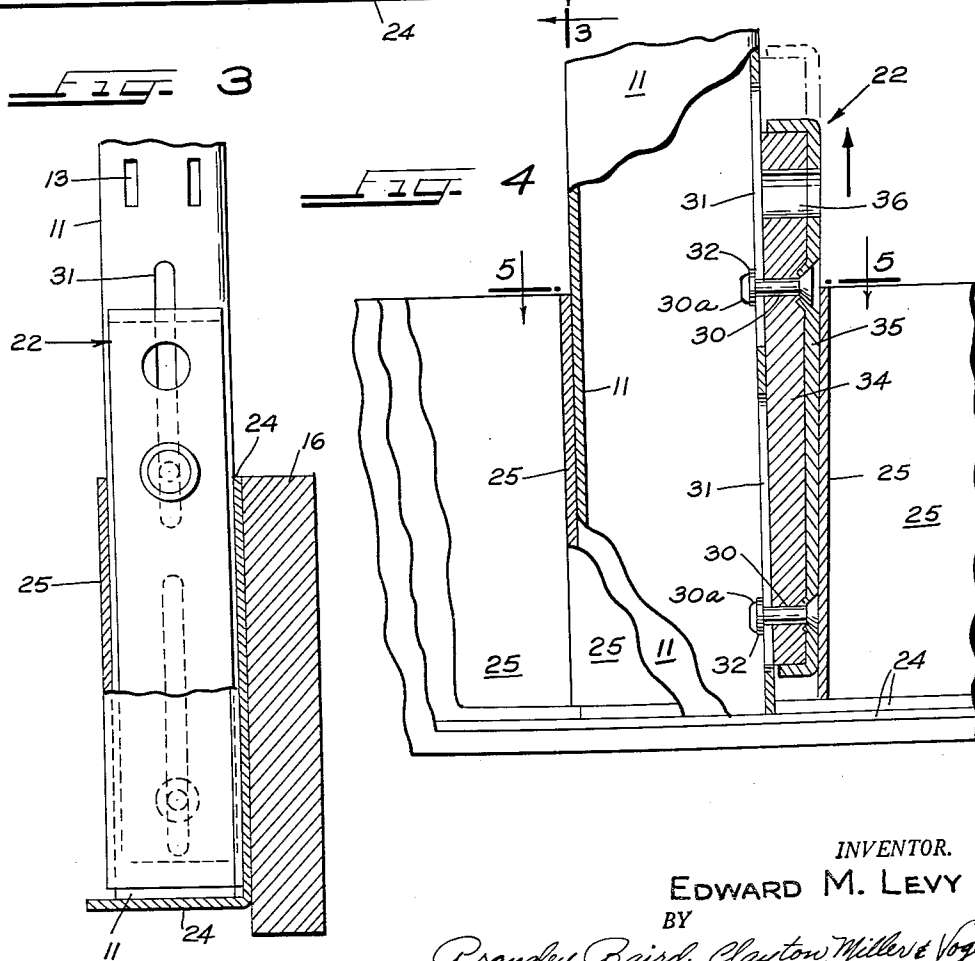
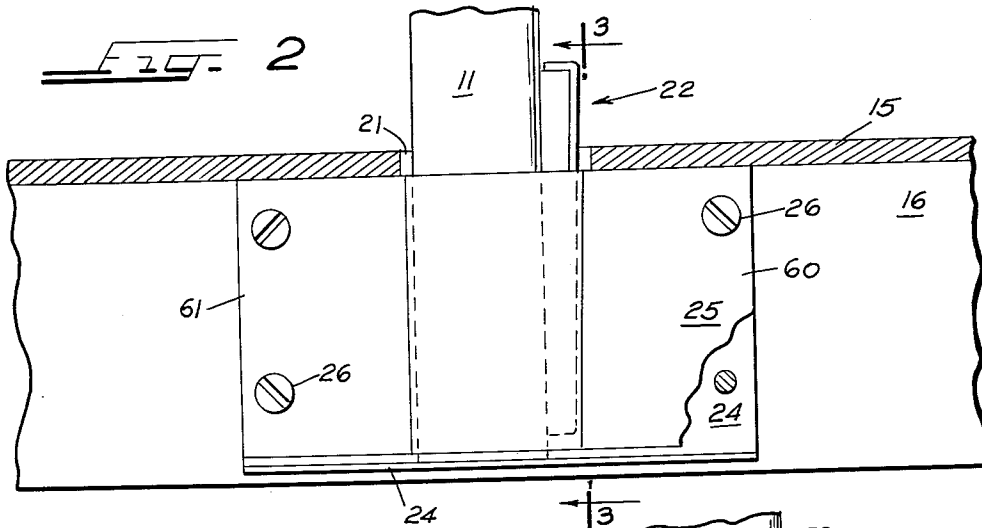
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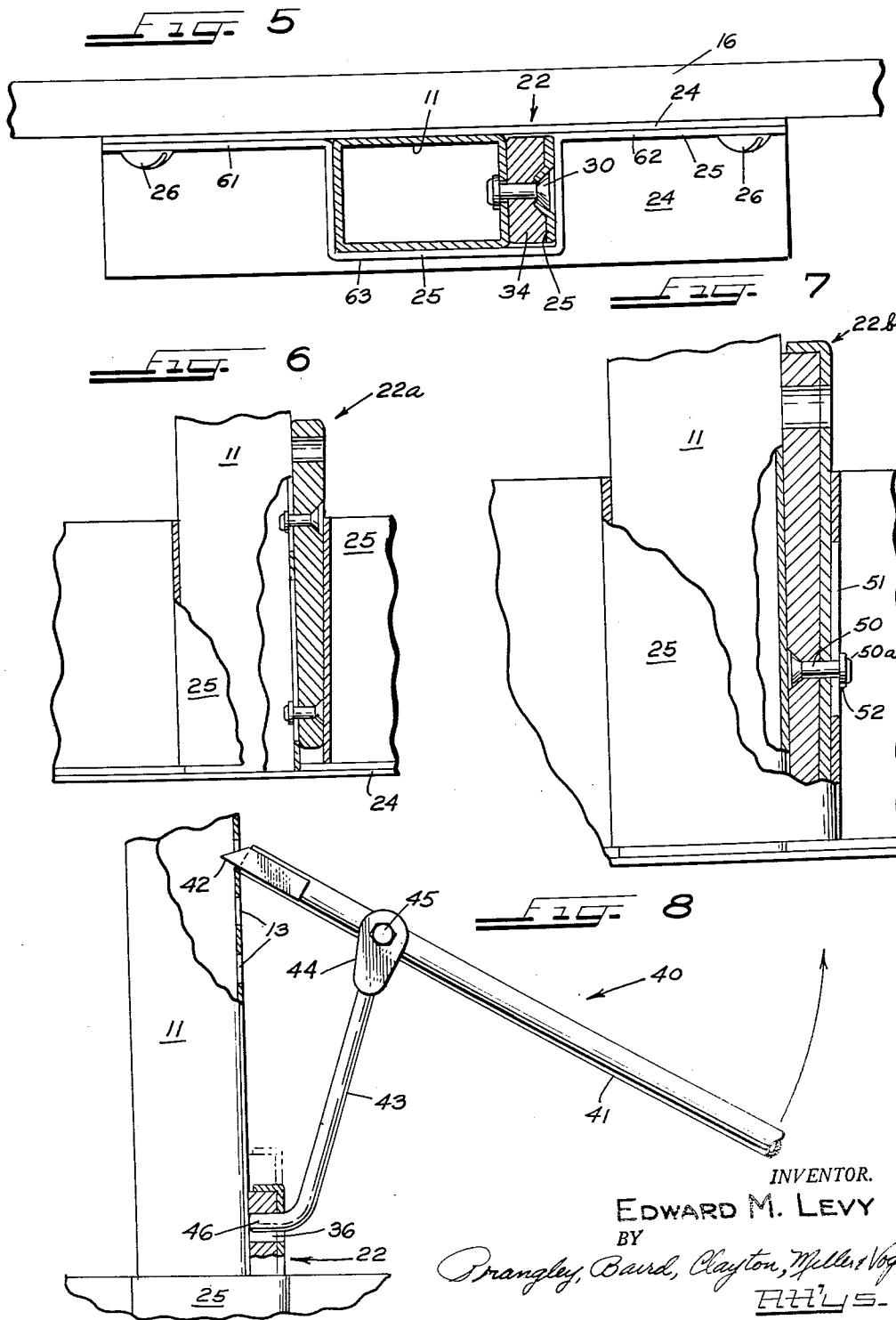
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Filed Oct. 29, 1959

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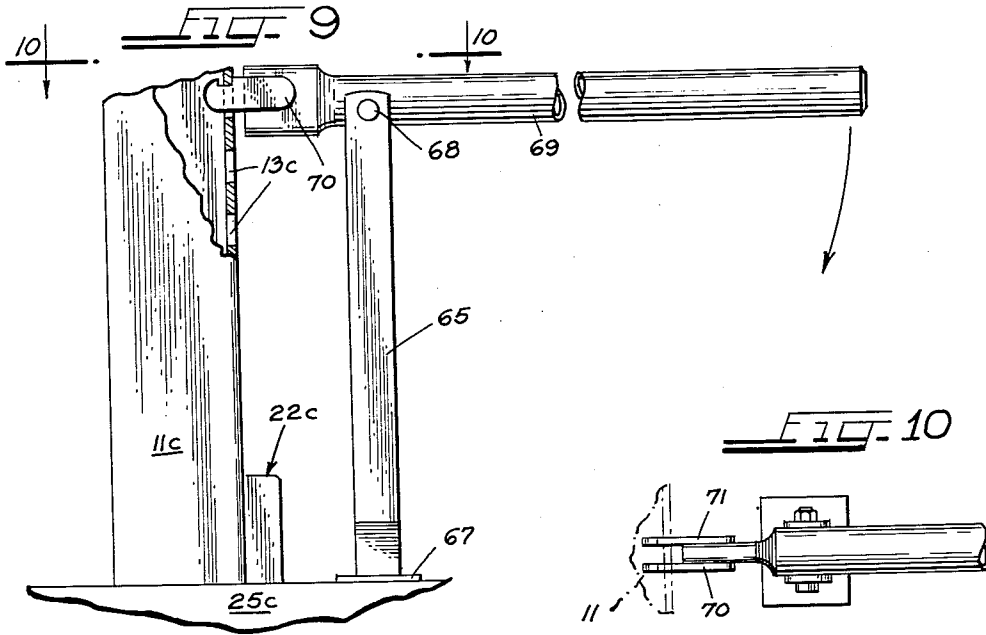


FIG. 11

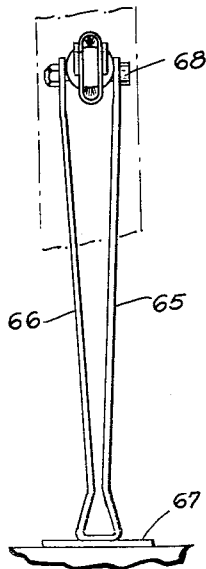
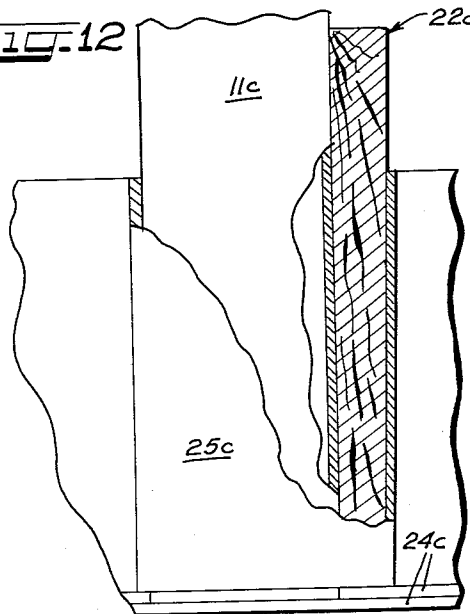


FIG. 12



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**DISPLAY RACK**

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Filed Oct. 29, 1959, Ser. No. 849,672

4 Claims. (Cl. 248—158)

The present invention relates to merchandising devices and more particularly to improvements in merchandise display equipment of a type especially suitable for use in retail stores and the like where it is important to display goods in an attractive manner.

Most modern retail store owners or managers are fully aware of the fact that the volume of sales of the various individual items in their inventories usually can be increased materially when each type of merchandise is displayed to its great advantage. Because most stores now sell a great variety of different types of items, however, many retail establishments, and particularly the small ones, have not been able in the past to purchase the many types of special display stands, racks and shelves that would heretofore have been necessary to present the different kinds of merchandise in the most attractive manner. Since such racks, stands and shelves have heretofore been of a more or less fixed or permanent nature, and in many instances have been custom-built and virtually incapable of modification, many store owners have thought special display fixtures to be too expensive to be practical and have adhered to the old counter-and-shelf arrangement for nearly all of their smaller goods, with the result that the goods have not been adequately displayed and their places of business in many cases have taken on the drab atmosphere that results when arrangements of goods cannot be varied from time to time.

Since flexibility is exceedingly important in the proper display of merchandise, it is desirable to provide display equipment that can be assembled and disassembled readily to facilitate alteration of a particular display arrangement and movement of the equipment from one location to another. In view of this, an object of the present invention is to provide display equipment which accomplishes this objective by facilitating quick and ready assembly and disassembly.

Another object of the invention is that of providing merchandise display equipment having one or more standards or posts adapted to have shelving, hang rods and paneling secured thereto and which are quickly and easily secured to a support structure of some type; that, for example, may be a merchandise display counter, an island or a relatively low base.

Another object of the invention is in the provision of display equipment of the character described and to provide therein fastener or anchor structure that permits the standards to be secured in place and thereafter removed without disturbing merchandise displays which may be arranged along the top of such support structure for the standards.

A further object of the invention is to provide a fastening or anchoring arrangement for removably securing the standards of display equipment to a base and which does not require the use of special tools and skills to effect the mounting and subsequent removal of the standards.

The invention, both as to its organization and method of operation, together with further objects and advantages thereof, will best be understood by reference to the following specification, taken in connection with the accompanying drawings, in which:

FIG. 1 is a perspective view of a display stand incorporating the present invention, a portion of the base being broken away to show the mounting means for the standards; FIG. 2 is an enlarged, partial, transverse sectional

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view taken in the direction of the arrows along the line 2—2 of FIG. 1; FIG. 3 is a vertical sectional view taken in the direction of the arrows along the line 3—3 of FIG. 2, with a portion of the socket broken away to show the relationship of the wedge to the socket and standard; FIG. 4 is a further enlarged transverse sectional view similar to FIG. 2, but with portions of the device broken away to more clearly illustrate structural details; FIG. 5 is a broken transverse sectional view taken in the direction of the arrows along the line 5—5 of FIG. 4; FIG. 6 is a transverse sectional view similar to FIG. 4, but illustrating a different embodiment of the invention; FIG. 7 is a transverse sectional view similar to FIG. 4 but illustrating still another embodiment of the invention; FIG. 8 is a partial side elevational view of the embodiment shown in FIG. 2 and illustrating the use of a jack for releasing the standards from the base of the stand; FIG. 9 is a broken side view in elevation showing a modified form of the jack; FIG. 10 is a broken top plan view taken generally along the line 10—10 of FIG. 9; FIG. 11 is an end view in elevation of the jack; and FIG. 12 is an enlarged broken side view in elevation with portions thereof illustrated in section showing a modified wedge used in conjunction with the structural composition shown in FIG. 9.

In the illustrated embodiment of the invention, the display stand includes a base 10, a pair of upright standards or posts 11 and a series of shelves 12 supported by the standards 11 at various heights therealong. The standards 11 may have various cross-sectional configurations such as rectangular or square as shown and preferably provide a plurality of vertically spaced pairs of slots 13 for facilitating the mounting of shelves or other display apparatus thereon at selected locations. The shelves 12 are shown supported by brackets 14, each of which has a pair of spaced hooks selectively and removably receivable within the slots 13. Since these hooks may be of obvious form and do not of themselves constitute a feature of the present invention, they are not illustrated in the drawings or further described herein.

The shelves 12 can be arranged at various heights, can be of various sizes and may extend from either or both sides of the standards 11, as shown in FIG. 1. Furthermore, other forms of display apparatus such as panels, peg boards, hangrods, brackets and hooks may be mounted on the standards 11 along with or in place of the shelves.

The base 10 may be of any suitable form, and is illustrated in FIG. 1 as including a top wall 15 surmounting a simple box-like frame comprising four walls 16. It is particularly to be noted that the base 10 is simply a support for the standards 11 and may take various forms such as a display counter mounted on a cabinet of drawers, a center island, etc., and the term "base" is intended to be exemplary of such support structure.

Each of the standards 11 is connected to the base 10 by means of an upwardly opening socket construction 20 which receives therein the lower end of the standard 11. An opening 21 is provided in the top wall 15 for each standard to permit passage of the lower end thereof, along with a wedge 22 carried thereby, into the socket 20. The wedge is used to anchor the lower end of the standard firmly within the socket construction 20.

Each socket construction includes a right angle socket brace or reinforcing element 24 and a strap 25 which are secured together and to a portion of the base wall 16 by any suitable fastening means, such as screws 26, extending through appropriate apertures in the flanges 61 and 62 of the strap and through apertures respectively aligned therewith in the vertical leg of the brace.

As is seen best in FIGS. 1 and 5, the strap 25 is formed with two spaced flanges 60 and 61 and a laterally extend-

ing U-shaped offset 53 disposed therebetween. The vertical leg of the reinforcing element 24 is coextensive with the adjacent portion of the wall 16 and the horizontal leg of the element 24 extends under the otherwise open, lower end of the socket to afford initially vertical support for the lower end of the standard 11 when inserted in the socket and to limit the extent of such insertion.

In accordance with the embodiment of the invention illustrated specifically in FIGS. 3 and 5, the wedge 22 is slidably mounted on the standard 11 by means of rivets 30 which extend through openings in the wedge 22 and through vertically extending upper and lower guide slots 31 in the standard 11. The heads of the rivets 30 are preferably counter-sunk within the wedge 22, and their inner ends are peened over washers 32, as at 30a, so that the wedge is secured to the post in a manner permitting the wedge to slide vertically or longitudinally with respect thereto. Thus, the wedge is a captivated structure in the sense that it cannot be removed from the standard but is free to move longitudinally therealong within the limits defined by the upper and lower guide slots 31.

In the embodiment of the invention specifically illustrated in FIGS. 3 and 5, the wedge 22 includes a wedge-shaped heel 34 of wood or other moderately soft material having a high coefficient of friction and a degree of compressibility. A metal cap plate or cover 35 is arranged against the outer upwardly and outwardly inclined surface of the wedge-shaped heel 34 and is bent over the upper and lower ends thereof, as is clearly illustrated in FIG. 4. The wall surface of the offset portion 25 of the strap 24 which is in facing adjacency with the outer inclined surface of the wedge 22 and which is engaged thereby is inclined upwardly and outwardly to match the inclined surface of the wedge, as shown in FIG. 4. Thus, a substantial length of the wedge bears against both the standard 11 and the wall of the socket to offer a firm supporting surface of substantial area affording a good frictional anchorage of the standard within the socket, yet also affording ready release of such frictional grip upon slight upward movement of the wedge.

The manner of connecting a standard 11 to the base 10 will now be apparent and is as follows. The lower end of a standard 11, with the wedge 22 slidably attached thereto is inserted through an opening 21 therefor in the top wall 15 of the base and into the socket construction 20. With the lower end of the standard abutting the horizontal leg of the reinforcing element 24, a hammer blow against the upper end of the wedge 22 drives the same downwardly and wedges the lower portion of the standard firmly within the socket so that it is rigidly maintained thereby in an upright position. It should be noted that no tool is required for assembly other than a hammer or other device capable of delivering a forceful blow against the upper end of the wedge.

The fact that the wedge 22 is slidably secured to the standard 11, in the embodiment of the invention thus far described, eliminates the necessity of separately handling any accessory fastening device apart from the standard and the base. The inclination of one surface of the socket to match the inclination of the wedge 22 distributes the substantial forces involved in the wedging action over large areas of the standard, the wedge and the walls of the socket and offers a rigid support for the standard. This permits the use of a thinner, lighter and cheaper construction than would otherwise be required to provide adequate support for the standards, which must in turn support the shelving and merchandise thereon. Indeed, the rigid support of each standard is critical to the successful utilization of the space above the base, since the total force on the standards is usually a multiple of the shelf load because of the leverage resulting from the shelving.

Further in this connection, it should be noted that the construction of the socket 20 and the manner of anchor-

ing the standard therein results in none of the wedging force being transmitted to the wall 16 of the base. Additionally, the heel 34 of the wedge 22 being of wood, and therefore having substantial compliance, further serves to distribute the wedging forces evenly over the stressed areas. The extension of the metal cap plate 35 over the upper end of the wedge 22 better enables the wedge to withstand repeated hammer blows attending frequent assembly and disassembly of display equipment employing the standards.

When it is desired that the display apparatus be disassembled, or more particularly that a standard 11 be removed from the base 10, the wedge 22 may, if desired, be lifted out of wedging position by inserting a heavy screw driver or similar device into an opening 36 (see FIG. 4) provided near the upper end of the wedge 22, placing a fulcrum beneath the screw driver and pushing the handle down. It will also be seen that the extension of the cap plate 35 over the lower end as well as the upper end of the wood block 34 aids in retaining the plate and block as an integral assembly when a wedge-lifting force is applied at the opening 36.

A still more convenient tool for lifting the wedge 22 and releasing the associated standard 11 is illustrated in FIG. 8. The tool is denoted 40 and includes a handle 41 having a prong or prongs 42 at one end thereof for entering the slots 13 in the standard 11. A hook arm 43 is pivotally connected to the handle 41 near its pronged end, preferably through a yoke 44 and a pin 45. The lower end of the hook arm 43 is bent to form a hook 44 for reception within the opening 36 in the wedge 22. It will be seen readily that the indicated lifting action at the free end of the handle 41 will cause the hook arm 43 to lift the wedge 22. Such a tool is recommended where it is contemplated that the display apparatus will be moved or rearranged frequently.

The modified embodiment of the invention illustrated in FIG. 6 differs from that previously described in that a wedge 22a is provided which is all metal in construction, which reduces the cost of making and assembling the wedge element and provides a wedge particularly suited to meet the demands of heavy use.

The further modified embodiment of the invention illustrated in FIG. 7 differs from both of those previously described in that a wedge 22b is slidably mounted on the socket wall rather than on the standard 11. The wedge 22b may have either of the forms described above but is illustrated as being of wood and metal, as in the case of the wedge 22 of FIG. 4. A single rivet 50 is employed for holding the wedge 22b to the wall of the socket and the head of the rivet is counter-sunk within the wedge, while the shank of the rivet extends through a vertically extending guide slot 51 in the inclined wall of the socket. The other end of the rivet is peened over a washer 52, as at 50a, to captivate the rivet to the socket wall. Since the wedge 22b is of substantially the same width as the socket, only one pin 50 is required to maintain the wedge in proper alignment; whereas two pins 30 are preferred in the embodiment of FIG. 4 in order that the wedge 22 may be retained in alignment with the standard.

A modified tool structure for releasing the standards from the associated sockets is shown in FIG. 9 and comprises a standard having a pair of spaced legs 65 and 66 equipped at the lower ends thereof with a flat base plate 67 adapted to rest on the top horizontal wall of the base 15. At their upper ends the legs 65 and 66 are pivotally connected by a pin 68 to an elongated handle 69. In the specific form shown, the pin 68 comprises a nut and bolt arrangement with the shank of the bolt passing through openings provided therefor in the legs 65 and 66 and handle 69. The handle 69 at the forward end thereof is provided with a pair of laterally spaced prongs 70 and 71, each of which has a recess formed along the upper edge thereof defining a hook adapted to engage a vertical wall of the standard 11c through the laterally spaced openings 75 13c thereof.

In use of the jack the base plate 67 is placed on the top wall of the display base 15 and the prongs 70 and 71 are inserted through a pair of laterally spaced slots 13c. The jack then has the configuration illustrated in FIG. 9, and when a downward force is applied against the handle 69 at the outer end thereof, an upwardly directed force is developed between the display base and standard 11c with the result that the standard is lifted from its socket. When the standard is thus released the prongs 70 and 71 are removed from the slots 13c and the handle 69 may be rotated into a position wherein it extends longitudinally along the legs 65 and 66 for convenience in storage.

The jack shown in FIGS. 9 through 11 may be used as an alternative for the jack 40 heretofore described and may be employed with all of the wedges 22, 22a and 22b, for the modified jack has no direct association with the wedge, but rather develops a force between the display base and standard. Conveniently, the modified jack is employed in connection with the wedge 22c shown in FIG. 12 for this wedge is a unitary element having no openings along the length thereof which could be engaged by the lower end of the hook arm 43 of the jack 40. The wedge 22c may be formed of wood, as shown, or may be made of metal or any other suitable material. It cooperates with the standard 11c and socket defined by the reinforcing element 22c and strap 25c in the manner of the wedges heretofore described. However, the wedge 22c is not a captivated element and is free from both the standard and strap when not performing its wedging function.

In the illustrated embodiments of the invention, the wedging forces are exerted generally parallel to the base wall 16 and to the vertical leg of the reinforcing element 24. Either of the captivated wedges or free wedge could be arranged to engage the side of the standard facing the wall 16 or the side of the standard facing directly away from the wall 16, but such an arrangement is not preferred because the wedging forces would tend to pull the strap away from the vertical leg of the reinforcing element 24.

It will be apparent that a round post may be employed if desired, and in this case, the socket may be essentially circular in cross section and may include a tapered slot or key-way for the wedge. Also, if the wall 16 of the base is sufficiently strong and rigid, the reinforcing element 24 may be eliminated—the socket plate 25 being fastened directly to the wall 16.

Various embodiments of the invention have now been shown and described whereby, in display devices including a base and one or more upright standards, each standard may be very rapidly and easily connected to and disconnected from the base without disturbing the arrangement of merchandise thereon, and the invention includes a unitary fastening means for rigidly securing the standard to the base without the use of accessory structure and devices.

While there has been described what are at present considered to be the preferred embodiments of the invention, it will be understood that various modifications may be made therein, and it is intended to cover in the appended claims all such modifications as fall within the true spirit and scope of the invention.

I claim:

1. In a structure for displaying merchandise and the like, a base having an upwardly extending wall portion, a strap member carried by said wall portion and providing a laterally extending offset defining a socket for receiving a standard therein, a longitudinally extending load bearing standard member having a lower end portion disposed within said socket and extending upwardly therefrom, a thrust surface on the bottom of said end portion for transferring the load on said standard member, a supporting abutment disposed below said socket and engaging said thrust surface for receiving the downward load of said standard member, a wedge disposed within said socket secured to and slidably carried by one of said members, said wedge carrying member having a slot therein elongated generally in the direction of the longitudinal axis of said standard member, a pin connecting said wedge to said wedge carrying member and slidably disposed in said slot for movement therealong, first friction surfaces on two spaced apart confronting walls of said socket, said confronting walls extending laterally from said base wall portion, one of said first surfaces being inclined in a direction upward and away from the longitudinal axis of said standard member, the other of said first surfaces being disposed generally parallel to the longitudinal axis of said standard member, second friction surfaces on two opposed parallel sides of said end portion, and wedging surfaces on two opposed sides of said wedge, one of said wedging surfaces being inclined in a direction upward and away from the longitudinal axis of said standard member and generally parallel to said inclined first surface, the other of said wedging surfaces being disposed generally parallel to the longitudinal axis of said standard member, said inclined wedging surface forcibly engaging said inclined first friction surface, the other of said wedging surfaces forcibly engaging one of said second friction surfaces for providing a wedging force between said end portion of said standard and the adjacent socket wall, the other of said second friction surfaces forcibly engaging the other of said first friction surfaces for providing a reaction force between said socket wall and said end portion to prevent inadvertent retrograde movement of said standard member out of said socket, said wedging force and said reaction force acting in directions parallel to said base wall portion.
2. A structure as defined in claim 1 wherein said supporting abutment is connected to said base wall portion.
3. A structure as defined in claim 1 wherein said wedge is secured to said standard member end portion.
4. A structure as defined in claim 1 wherein said wedge is secured to said strap member.

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