April 21, 1953 T. SHAW 2,635,762

STACK OF RACKS OF DIFFERENT SIZES AND ADAPTER THEREFOR

Filed Feb. 24, 1950 2 SHEETS—SHEET 1

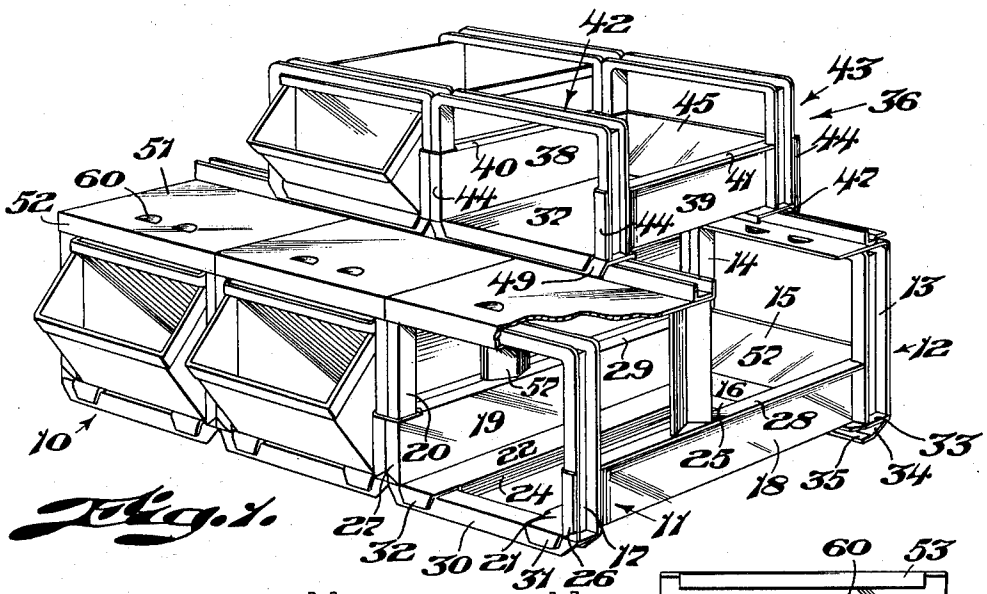


Fig. 1.

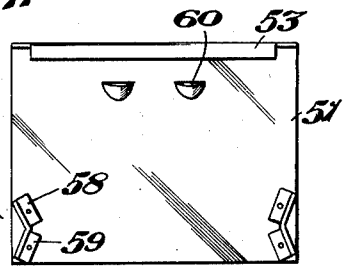


Fig. 3.

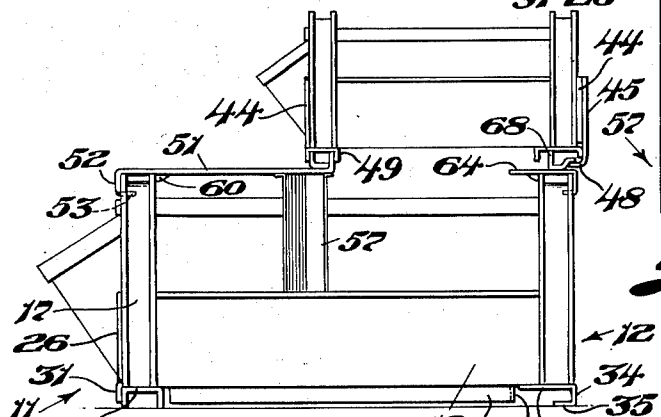


Fig. 2.

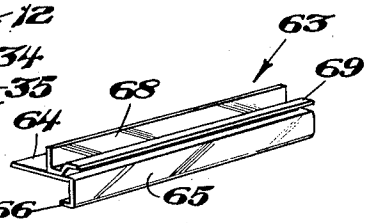


Fig. 5.

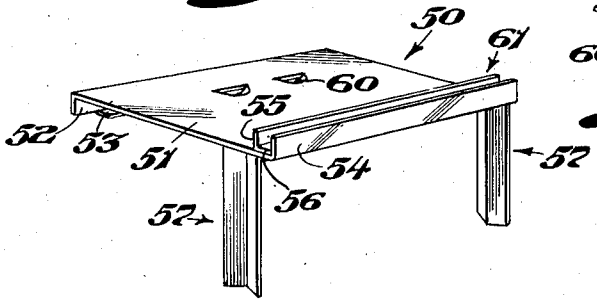


Fig. 4.

INVENTOR.
Thomas Shaw
BY
Barlow & Barlow
Attorneys

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Fig. 6.

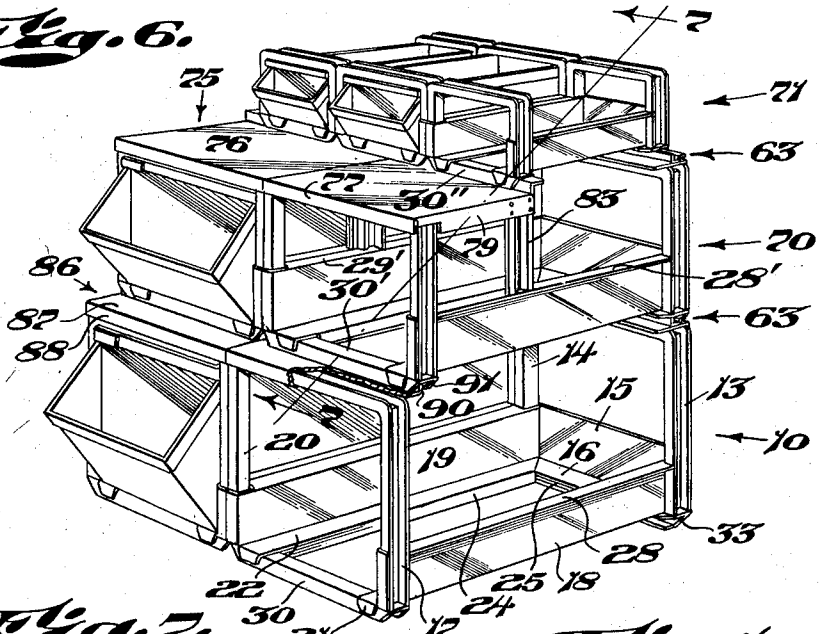


Fig. 7.

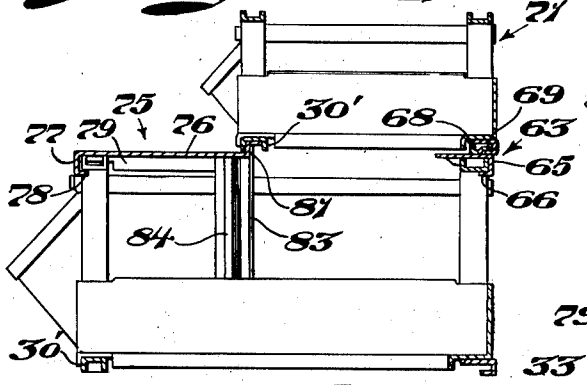
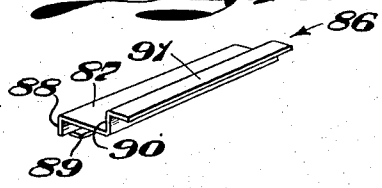


Fig. 10.



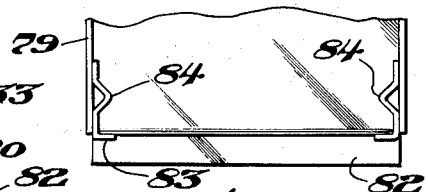


Fig. 9.

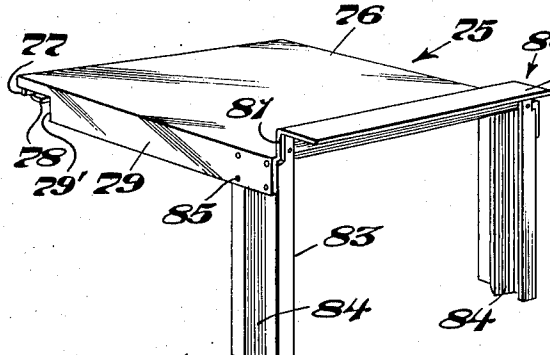


Fig. 8.

INVENTOR.
Thomas Shaw
BY
Barlow & Barlow
Attorneys

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STACK OF RACKS OF DIFFERENT SIZES AND ADAPTER THEREFOR

Thomas Shaw, Cranston, R. I., assignor to Stack-bin Corporation, a corporation of Rhode Island

Application February 24, 1950, Serial No. 146,087

7 Claims. (Cl. 211—71)

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This invention relates to a rack for receiving drawers or containers for use in a stock room or the like.

Stacks of racks for stock room containers have heretofore been provided in which there has been a plurality of units, each of identical size and shape superimposed one upon the other, and while various sized units have been provided, a stack of these units has heretofore always been a stack of the same sized units arranged in side-by-side relation and superimposed one upon the other.

One of the objects of this invention is to provide a stack of racks of graduated sizes so that racks of a smaller unit size may be superimposed upon racks of a larger unit size, the arrangement being such that a plurality of racks of different sizes may be provided.

Another object of this invention is to provide a rack of graduated sizes by merely positioning adaptors between the racks of different sizes.

Another object of this invention is to provide an arrangement so that the racks of a smaller size will span the joint between unit racks of a larger size beneath them and serve to tie the superimposed stacks together against lateral separation due to some unevenness of the supporting surface.

With these and other objects in view, the invention consists of certain novel features of construction, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings:

Figure 1 is a perspective view of a stack of racks of graduated sizes with drawers or containers in the racks;

Figure 2 is a side elevation of the structure shown in Figure 1;

Figure 3 is a bottom view of the main adaptor;

Figure 4 is a perspective view of the main adaptor looking from the top;

Figure 5 is a perspective view of a supplementary adaptor for the rear portion of the rack;

Figure 6 is a perspective view of a stack of racks of three different sizes showing adaptors for accommodating them;

Figure 7 is a section of the two upper sets of racks shown in Figure 6 on substantially line 7—7 of Figure 6;

Figure 8 is a perspective view of a main adaptor of modified form;

Figure 9 is a bottom view of a fragmental portion of the adaptor shown in Figure 8;

Figure 10 is a perspective view of a different front adaptor utilized in the stack shown in Figure 6.

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In proceeding with this invention I have provided adaptors which may rest upon the crossbars of a rack and extend in a direction so as to provide a support for superimposing the smaller rack units upon the larger rack units. The adaptor is in two parts, the front adaptor mounting on the front crossbar to provide a member to be gripped by the front portion of the superimposed unit and a rear adaptor which grips the rear crossbar and provides a holding means for the lower rear end of a smaller superimposed unit, this being usually necessary because the crossbars of the larger units are heavier and the smaller rack units will not fit with these heavier crossbars, thus requiring an adaptor mechanism in order that a good connection may be made.

With reference to the drawings, 10 designates one of the lower rack units, substantially in accordance with my Patent 2,046,095, dated June 30, 1936, which are positioned side by side, there being three shown in Figure 1, and two shown in Figure 6, although the extent to which these may be placed side by side may be further expanded.

Each of these racks comprises an inverted U-shaped channel 11 at the front and 12 at the rear, which are connected together by a right-angular member of sheet metal extending between the two legs 13 and 14 of the inverted U 12. The vertical portion of this right-angular member is designated 15 and the horizontal portion is designated 16. This vertical portion is bent at legs 13 and 14 to extend at right angles forwardly between the leg 13 of inverted U 12 and leg 17 of inverted U 11 on one side, as designated at 18 and is bent and extends similarly on the opposite side as at 19 between the leg 14 of inverted U 12 and leg 20 of inverted U 11. The horizontal portion 16 of this angle member is mitered and extends forwardly and inwardly from the portions 18 and 19 as at 21 and 22. These forwardly extending portions are flanged downwardly as at 23 (Figs. 2 and 6) and 24 (Fig. 1), while the horizontal portion 16 is flanged downwardly as at 25. The forward edges of the vertical portions 18 and 19 are bent outwardly about the legs 17 and 20 as at 26 and 27, while there are flanges 28 and 29 along the portions 18 and 19 between the legs 13 and 17 and 14 and 20 to further stiffen the structure and provide a supporting ledge.

Extending laterally across between the lower ends of the inverted U 11 and welded thereto is a channel member 30 which has the ends of the horizontal portions 21 and 22 turned over and

welded to it as at 31 and 32. The inverted U 12 has an angle member 33 extending across between its lower ends and welded thereto which is flanged downwardly as at 34 and inwardly as at 35 so as to provide a generally hook-shaped structure.

The smaller unit rack which I will designate 36 is of a structure similar to the rack 10 just described. However, in this smaller rack a cross piece 49 of inverted channel form is welded to the end of the inverted U 42 and a cross piece 47 is of channel shape and is welded to the end of the legs of the inverted U 43. The bottom 37 is of a single piece of sheet material bent to provide sides 38 and 39, each flanged outwardly as at 40 and 41 so as to provide supporting ledges. The front and rear ends of the sides 38 and 39 are bent about the vertical legs of the inverted U shaped channels 42 and 43 as at 44, while the back wall 45 is a separate piece of material extending across the legs of the inverted U and is welded to the bent over portions 44 which extend about the legs of the inverted U 43. This wall 45 extends downwardly beyond the ends of the inverted U shaped channel 43 with an inwardly extending flange 48 as may best be seen in Figure 2.

The racks, as can well be seen in my prior Patent 2,046,095, are intended to be superimposed one upon the other with the bottom cross pieces fitting over the upper crossbars formed by the inverted U shaped channels. If, however, it is desired that a rack 36 of smaller size be positioned upon the rack 10 of larger size, there would be no support for one end of the smaller rack, and in order to accommodate the smaller rack, I have provided an adaptor which may conveniently take the form of a forward section and a rear section. The forward section which I designate generally 50 is shown in perspective in Figure 4 and the rear section which I designate generally 63 is shown in Figure 5.

This adaptor section 50 comprises a deck 51 which is folded downwardly as at 52 at its forward edge and then inwardly as at 53 therefrom, providing a generally hook-shaped structure to hook over the forward crossbar formed by the inverted channel 11 and rest upon the top of it. This deck 51 extends rearwardly whatever distance is necessary for supporting the smaller rack 36 and provides a cross member or support at such inner end to receive the channel member 49 of the smaller frame rack 36. This cross member is provided by turning upwardly the edge of the deck 50 as at 54 and providing an angle iron with a wall 55 parallel to this upturned edge 54, which may be secured to the deck and spaced from the flange 54 by the angle portion 56. In order to support this deck, two legs of angular form 57 are secured to the under surface of the deck by lips 58 and 59 bent at this upper end of the legs with the lower ends of the legs resting upon the ledges 28 and 29, as shown in Figure 1. Projections 60 are provided by striking down portions of the stock of the deck at such a location as to engage the top front crossbar of the rack and prevent forward sliding of this section of the adaptor. Thus, the cross member 61 composed of the portions 54, 55, and 56 provides a rail to be received in the channel 49 of the upper rack 36.

Companion with the adaptor section for the front, I have provided an adaptor for the back, as shown in perspective in Figure 5 at 63, which comprises a horizontal member 64 with an angular portion 65 to extend downward with an inward flange 66 to hook under the rear crossbar of the inverted U 12 of rack 10. Superimposed upon this member 64 is a vertical wall 68 and a horizontal lip 69 spaced from the member 64 so that the inner edge 48 of the rack 36 may extend beneath this lip and be locked in position.

By positioning the superimposed rack so that it bridges the joint between two of the larger lower racks with their adaptors the upper rack serves to frictionally tie these lower racks together against lateral separation.

The stack of racks shown in Figure 6 comprises a unit designated generally 10 which is identical with the unit above described in connection with Figures 1 and 2, while superimposed upon this unit 10 there is a rack unit 70 which is a little smaller in depth than the unit 10 and is superimposed upon it; while superimposed upon the unit 70 there is a unit 71 which is much smaller than the units 10 or 70 and is more nearly the size of the unit 36. However, the units 70 and 71 are constructed substantially the same as with the unit 10, except for proportions and size. The back adaptor sections which are designated 63 are located between the superimposed units 10 and 70, and 70 and 71; however, a modification occurs in the adaptor sections shown at the front of the different unit sections of Figure 6.

The adaptor section 75 (Fig. 8) comprises a deck 76 with its forward edge bent downwardly as at 77 and then inwardly as at 78 to provide a hook-like arrangement identical with the adaptor 50. However, flanges 79 extend downwardly from the deck 76 and are cut away at their forward end at 79'. The deck at the rear end has a cross member 80 formed by bending the stock of the deck upwardly as at 81 and then rearwardly as at 82 to provide a width sufficient to snugly fit within the channel 30'' of the unit 71. Legs 83 extend at right angles to the deck 76 and are inwardly offset in a V at 84 and secured to the flanges 79 and portion 81 by spot welding as at 85. These legs rest upon the ledges 28', 29' of the rack 70.

The adaptor section designated generally 86 is positioned between the units 10 and 70 and comprises a deck 87 having its forward edge turned downwardly as at 88 and inwardly as at 89 to provide a hook shaped edge, while at the rear edge a cross member is formed by the stock being bent upwardly as at 90 and then rearwardly as at 91 of a width to be received in the channel 30' of the rack 70. The deck 87 is of such short extent that it sufficiently supports the rack 70 above it without need of a leg protruding down to the ledge 28 of the rack 10 for this purpose.

I claim:

1. A stack of racks for containers comprising a plurality of open frame construction unit racks of one size in side-by-side relation, each having an upper set of front and back cross bars and a lower set of front and back cross bars and horizontal side members connecting said lower set of cross bars, an adaptor section for each unit having a deck portion adapted to rest on the upper side of the upper front cross bar and extending rearwardly beyond said upper front cross bar and having the front portion thereof of hook shape to embrace said upper front cross bar and a cross member at the rear edge portion

thereof supported thereby, and rack units of a smaller size superimposed on said cross member and upper back cross bar.

2. A stack of racks for containers as in claim 1 wherein the adaptor section is of sheet stock with its forward edge folded downwardly at right angles and then rearwardly to provide a flange to form the aforesaid front portion of hook shape, said flange being of a width less than the length of the upper front cross bar to engage therewith inwardly of the end portions thereof.

3. A stack of racks for containers as in claim 1 wherein said cross member is of a width from front to rear to receive a lower cross bar of the smaller rack unit.

4. A stack of racks for containers as in claim 1 further comprising a back adaptor section mounted on said upper back cross bar to be engaged by the superimposed smaller rack unit and having a hook-shaped portion embracing the back cross bar.

5. A stack of racks for containers as in claim 1 further comprising a back adaptor section mounted on said upper back cross bar to be engaged by a superimposed smaller rack unit and

having a hook-shaped portion embracing the said upper back cross bar and an overhanging lip portion to interlock with the said smaller rack unit.

6. A stack of racks for containers as in claim 1 wherein each smaller rack unit bridges the joint between two side-by-side rack units and their adaptors.

7. A stack of racks for containers as in claim 1 wherein a pair of legs extends downwardly from said adaptor and each resting on one of said side members to support the adaptor section.

THOMAS SHAW.

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