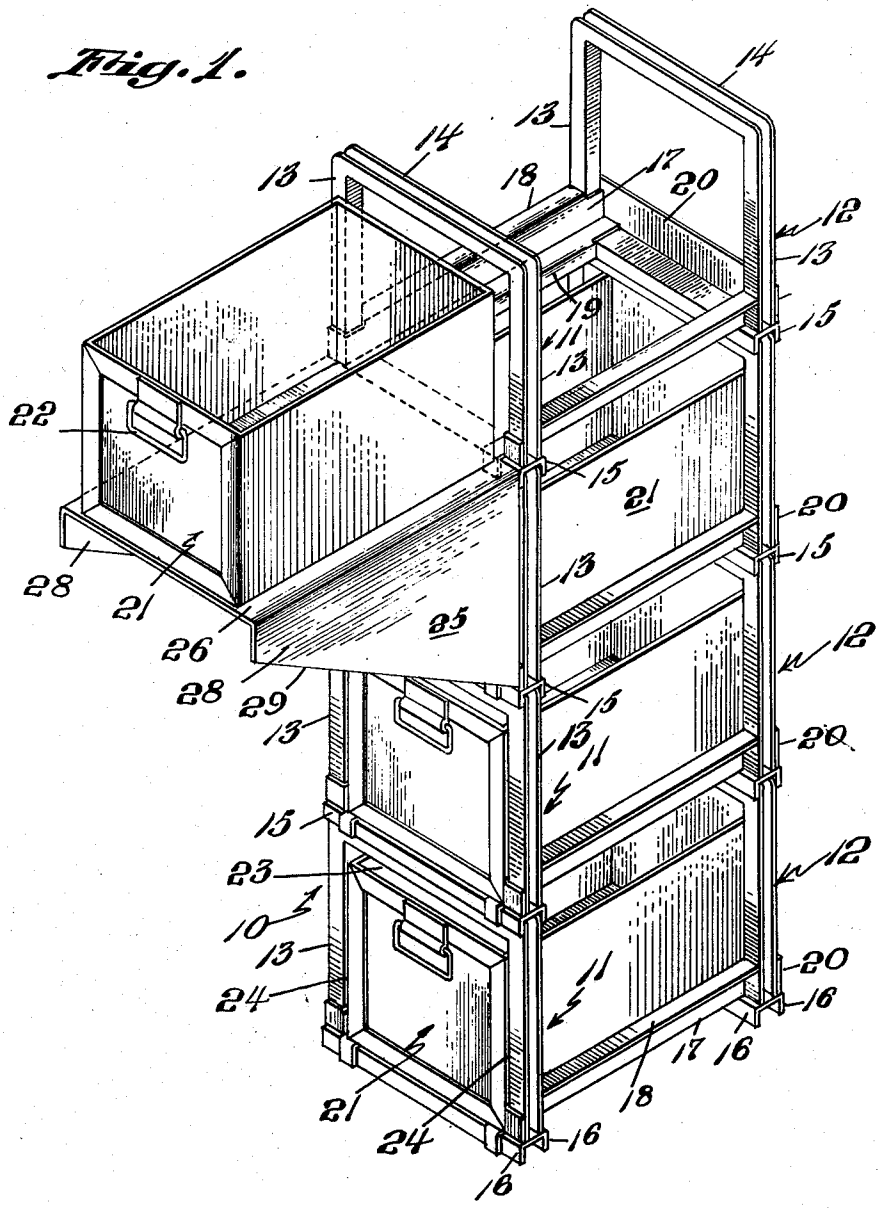
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RACK LOADING AND UNLOADING SHELF

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Fig. 1.



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Fig. 2.

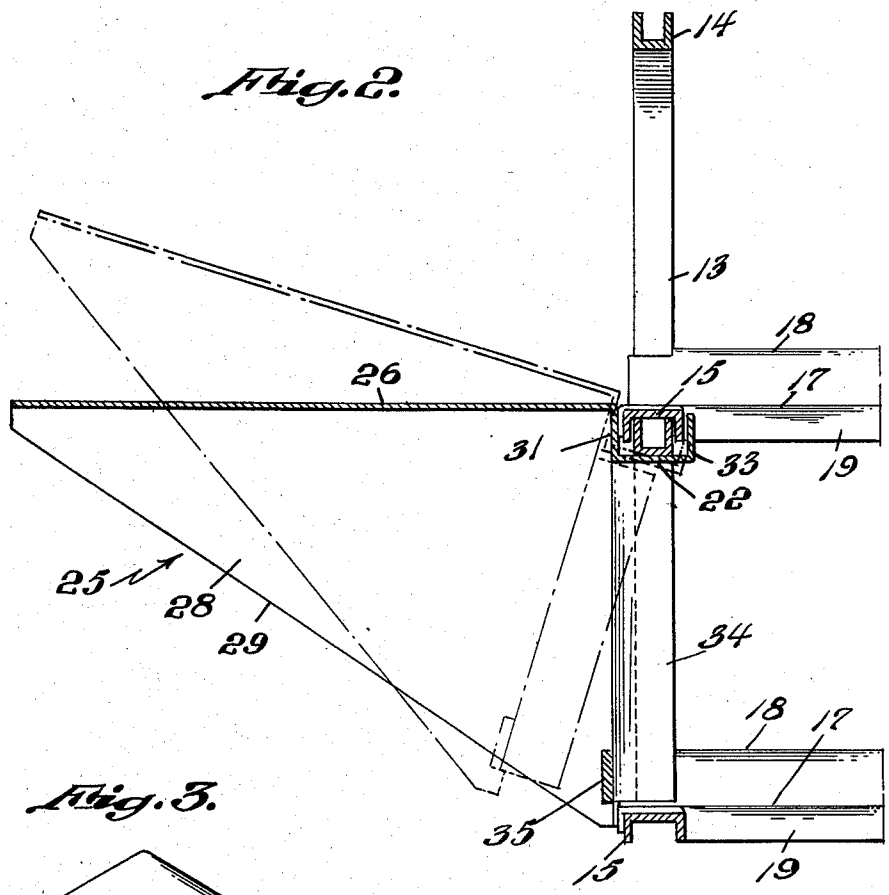
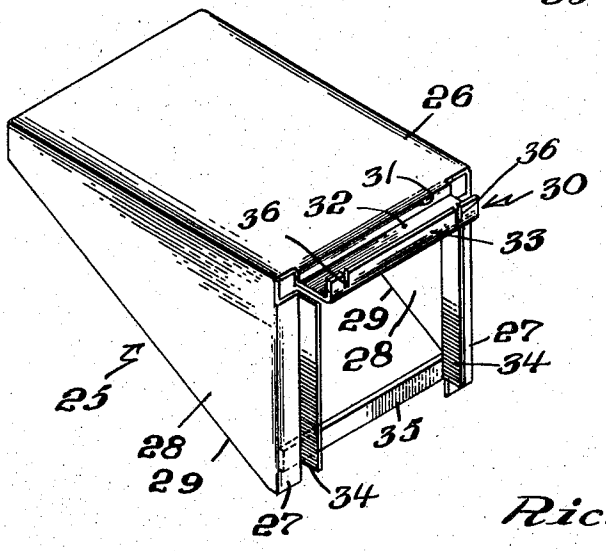


Fig. 3.



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United States Patent Office

2,943,747

Patented July 5, 1960

2,943,747

RACK LOADING AND UNLOADING SHELF

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Filed Aug. 1, 1958, Ser. No. 752,668

4 Claims. (Cl. 211—153)

This invention relates to a shelf for use with stacked storage racks of the type shown in Patent No. 2,046,095.

Storage racks of the type shown in the above patent comprise open metal frame units which are constructed in a way to be superimposed one upon another in stacked relation. Storage boxes or bins are slidably received in said units.

An object of the present invention is to provide a shelf for use with the above type of storage racks for supporting the bins when positioned in the rack or when withdrawn from the rack.

Another object of the present invention is to provide a shelf for use with the above type of storage racks which will be constructed in a way to allow ready attachment and removal from the racks.

A more specific object of the present invention is to provide a shelf for use with the above type of storage racks which will be constructed in a way to provide for interlocking relation with the racks for detachably securing the shelf in position without the use of bolts, screws and the like fastening means.

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 storage racks and bins provided with a shelf embodying the present invention;

Figure 2 is a central sectional view of a fragmentary portion of the stack of racks shown in Figure 1 showing the interlocking arrangement between the shelf and the rack unit to which the shelf is attached; and

Figure 3 is a perspective view of the shelf looking from the rear towards the front of the shelf.

Referring to the drawings in more detail, particularly Figure 1, 10 designates a stack of rack units of the general construction disclosed in Patent No. 2,046,095. Each rack unit comprises an open front frame portion 11 and an open rear frame portion 12. These frames are substantially identical and of generally rectangular formation providing uprights 13 which are integrally connected at the upper ends thereof with a laterally extending cross member 14. The lower ends of the uprights of each frame portion 11 and 12 are connected to each other by a laterally extending cross member 15 which is channel shape in cross section with the sides 16 thereof extending downwardly, and of a width between them to receive cross member 14. The front and rear frame portions 11 and 12 are in turn connected to each other by angular slideways 17 having a right angular horizontal flange portion 18 extending between the uprights 13 and a right angular vertical flange portion 19 extending between the channel cross members 15. A plate 20 extends between the uprights 13 of the rear frame 12 and provides a stop and also reinforces the rack. Thus it will be seen each rack unit is of skeleton formation and may be superimposed one upon the other by inserting the channel cross members 15 on the upper cross members 14 of the next lower rack unit.

The storage boxes or bins designated 21 are of generally rectangular shape and provided with handles 22 at either end for handling the same. The bins are slidably received on the slideways 17 and engage against the stop plate 20 which positions the front of the bin substantially flush with the front edge of the frame portions 11. It will be seen in Figure 1 that the bins are made of a size so as to provide a substantial space 23 between the upper edge of the box and cross members 14 and to provide a less clearance 24 between the sides of the bins and the uprights 13.

The shelf 25 which in conjunction with the storage racks 10 form the subject of the present invention is preferably made from a single piece of sheet severed and bent into shape (Figure 3) so as to provide a top wall 26, rear wall portions 27 extending downwardly a distance to engage the lower cross member of the front frame portion and depending side walls 28, the lower edges 29 of which extend on a downwardly slant from the front edge towards the lower edge of the rear wall portions 27. A channel shape hook 30 is formed at the rear edge of top wall 26 by extending the top wall in a downwardly right angular bend as at 31, then rearwardly at right angles thereto as at 32 and then upwardly at another right angle as at 33. As best seen in Figure 3, hook 30 is of a dimension to receive the cross channel 15 and extends at a height just above the rear wall portions 27, and the width of the hook 30 is made slightly less than the distance between the uprights 13 of frame portion 11. The rear wall portions 27 are each provided with a right angle flange portion 34 which flanges are spaced apart a distance slightly less than the spacing between the said uprights 13 of frame portion 11 and are of a length less than the wall portions 27. A cross bar 35 is secured to wall portions 27 at the lower ends thereof for reinforcing the shelf.

The shelf may be attached and interlocked with any rack unit of a stack without removing any of the bins from the rack unit. This is readily accomplished by holding the shelf at an angle as shown in broken lines in Figure 2 so as to readily pass the hook 30 through the space 23 between the upper edge o fthe bin and the cross member 14 and with the lateral alignment such that the flanges 34 are in the clearance 24 between the bin and the upright 13. Upon the upwardly extending portion 33 of the hook having been located rearwardly of inner side 16 of the cross member 15, the shelf is swung downwardly to engage the hook with member 15 which is snugly received within the channel of the hook. Slots 36 are provided in side portions 33 so as to receive the depending flanges 19 of slideways 17. The flanges 34 will now extend in the said clearance 24 and the wall portions 27 will be engaged against the uprights 13 and the shelf will be held firmly interlocked with the rack unit, the flanges 34 holding the shelf against relative lateral movement. The top wall 26 extends in continuation with the slideways 17 of the rack unit above and provides a platform on which the bin of the said rack unit above may be slid and supported in removal of or in positioning the bin.

From the foregoing it will be apparent the shelf 25 may be attached to any rack unit of the stack without removing any bin therefrom. It will also be apparent that in providing such a shelf makes for less task in inserting or removing a filled bin from a rack unit, this being especially so when the bins to be removed or inserted are at the higher level of the stack and the rear handle of the bin is inaccessible.

I claim:

1. A shelf for use with a stack of storage rack units

providing a framework for receiving storage bins, comprising a top wall, terminating at its rear in an upwardly open hook of a size to receive a horizontally extending portion of the framework of a storage rack, rear wall portions extending at right angles to said top wall to engage the face of the rack and flanges extending rearwardly from said rear wall beneath said hook, the lower edges of which are adapted to engage the upper surface of a portion of the framework below that portion engaged by said hook.

2. A shelf as in claim 1 wherein side walls depend from said top wall and extend forwardly from said rear wall portions.

3. A shelf as in claim 1 wherein said hook is channel-shape in cross section with one wall bent from the top wall and in the same plane as the rear wall portions.

4. A shelf as in claim 1 wherein the recited parts of said shelf are of one piece of material.

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