June 1, 1943. T. SHAW 2,320,388

CONTAINER ASSEMBLY

Filed Feb. 3, 1940 2 Sheets-Sheet 1

Fig. 1.

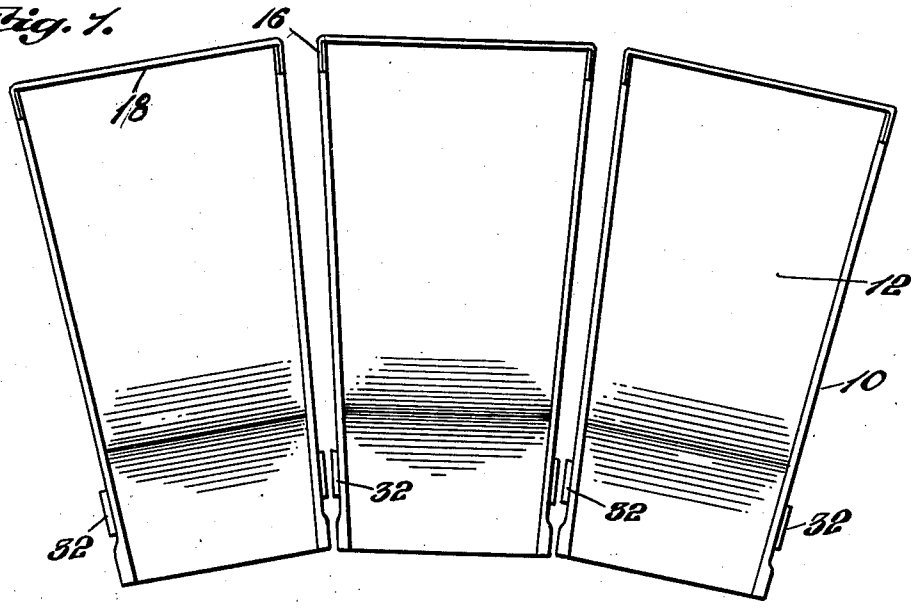


Fig. 2.

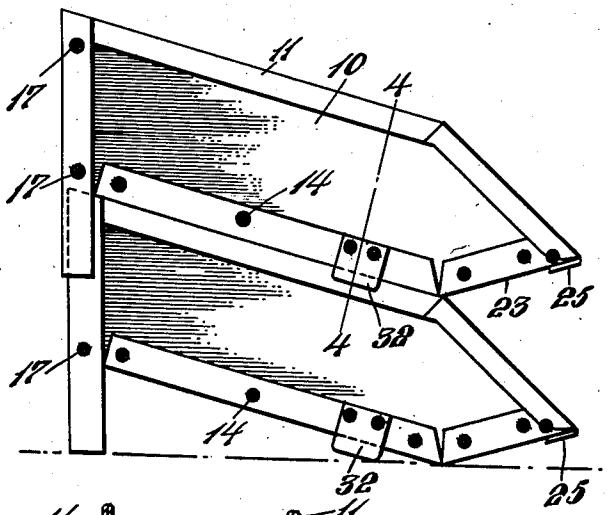


Fig. 3.

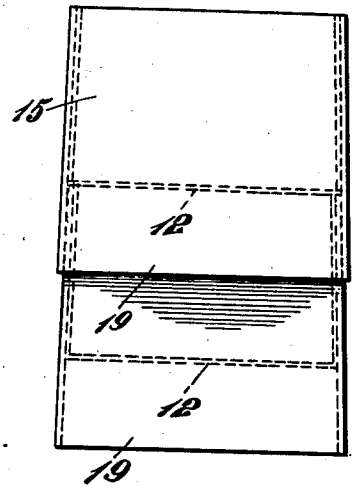
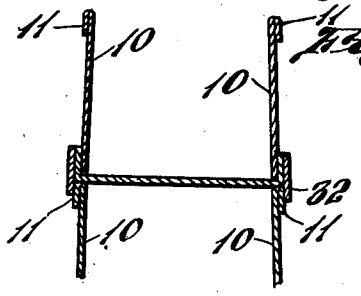


Fig. 4.



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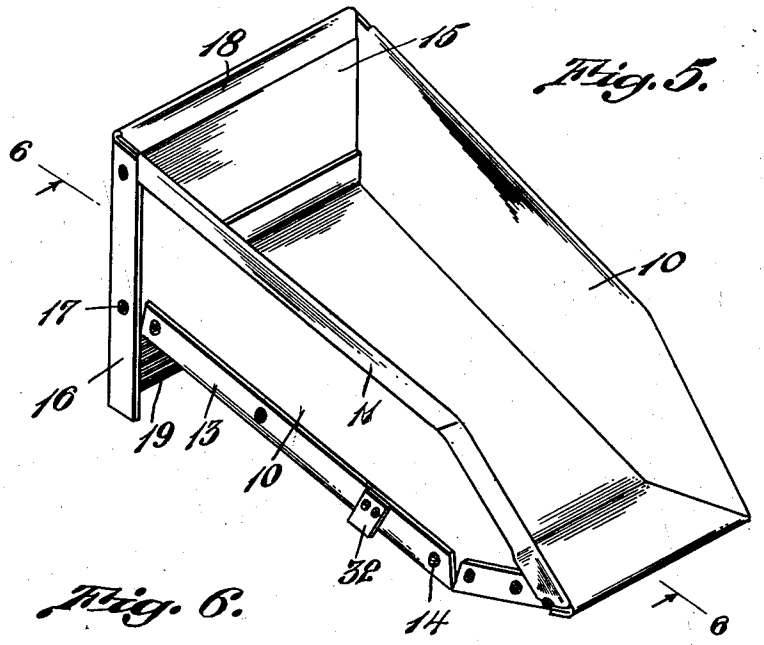


Fig. 5.

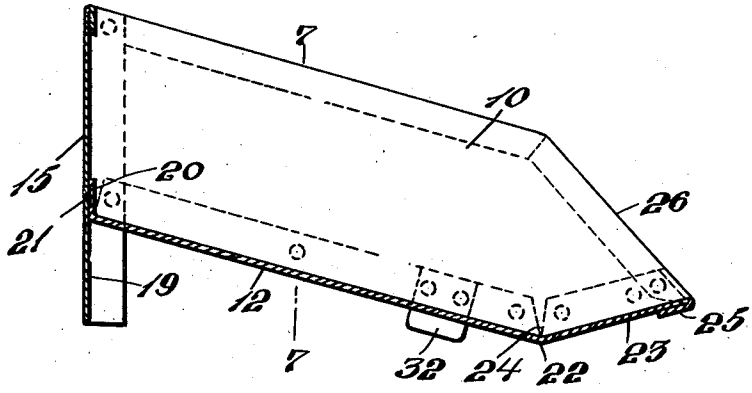


Fig. 6.

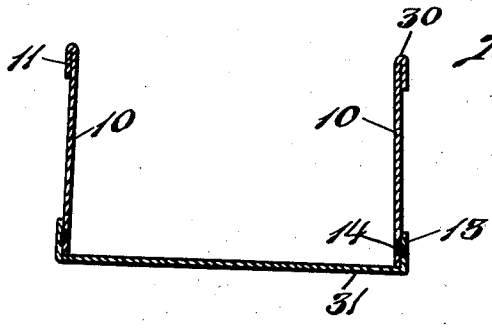


Fig. 7.

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Patented June 1, 1943 2,320,388

UNITED STATES PATENT OFFICE

2,320,388

CONTAINER ASSEMBLY

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Application February 3, 1940, Serial No. 317,137

4 Claims. (Cl. 220—97)

This invention relates to a unit bin and the assembly of this bin with other like bins, and the invention has for one of its objects to provide an assembly of different units for containing different parts with each unit bin so arranged that the contents of the bin will feed forwardly to be readily accessible at the mouth of the bin so long as any of the material in the bin remains.

Another object of the invention is to provide a plurality of bins which may be stacked one upon the other and positioned side by side in closely assembled relation with each of the bins capable of feeding the contents thereof forwardly to the mouth of the bin to be readily accessible to the user.

Another object of the invention is to provide bins so supported that they will be rugged in construction and simple and inexpensive in manufacturing.

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:

Fig. 1 is a top plan view of three superimposed stacks of bins arranged in side by side relation;

Fig. 2 is a side elevation of two bins in superimposed relation;

Fig. 3 is a rear end view of two bins in superimposed relation;

Fig. 4 is a fragmental sectional view on line 4—4 of Fig. 2;

Fig. 5 is a perspective view of a single unit bin;

Fig. 6 is a sectional view on substantially line 6—6 of Fig. 5;

Fig. 7 is a cross sectional view on substantially line 7—7 of Fig. 6.

In assembly operation of relatively small articles, it is usual that a single person will put together as many as a dozen or two dozen different pieces or articles into their desired relationship. Each one of these articles is contained with a plurality of like articles in a tray or drawer or bin, and in order to make convenient a large number of such small parts located around the seat of the operator, I have provided an arrangement whereby the parts may be located in superimposed relation in different bins with the bottom of each bin inclined so that the contents of the bin will feed forwardly to the mouth of the bin that it may be readily accessible to the operator at all times. I have further provided a shaping of each of the units so that the units side by side may be arranged along the arc of a circle that each unit may be the same distance from the worker who will be located substantially at the center of the arc of the unit; and the following is a more detailed description of the present embodiment of this invention, illustrating the preferred means by which these advantageous results may be accomplished;

With reference to the drawings, each unit consists of upstanding side walls 10 reinforced at their upper edges by being doubled back outwardly upon themselves as at 11 (see Fig. 7). Along the lower edge of each side wall there extends a bottom wall 12 which is flanged upwardly as at 13 along the outer surfaces of each side wall 10 and is secured to the lower portion of the side wall by welding 14. A back wall 15 engages the edges of the side walls and is flanged forwardly as at 16 to extend along the outer surfaces of the side walls 10 and is connected thereto by spot welding 17. This flange 16 engages the flanges 13 of the bottom wall and also the reinforcing double-back margin 11 of the side walls.

This back wall also engages the flange 20 of the bottom wall and is secured thereto by welding 21. The upper edge of this back wall is reinforced by being folded inwardly back upon itself as at 18 along its upper edge, while the lower portion of the end wall extends below the bottom wall and the side walls at 19 a substantial distance so as to cause this bottom wall to be supported in a position inclined to the horizontal as illustrated in Fig. 6 with its rear end elevated by the portion 19, while its forward portion engages a horizontal support at 22 for the resting of a box on a horizontal surface. The forward portion 23 of the bottom wall extends upwardly making an obtuse angle 24 at the point of contact, while the bottom wall is reinforced by doubling its edge outwardly back upon itself at 25 for strengthening of the same.

The side walls 10 are cut away on a slope as at 26 to meet this upwardly extending portion of the bottom wall to provide a rather wide open mouth for the bin by reason of this cut-back side wall and the upwardly extending bottom wall 23, so that parts contained in the bin are readily accessible.

The bottom 12 is inclined sufficiently so that the material which is contained in the bin will move forwardly and lodge in the readily accessible angle 24 of the bin. The inclination will vary somewhat with the material which is to be contained in the bin; as some materials have a higher coefficient of friction than others, the angle of inclination will accordingly vary, so that the material will feed forwardly but yet will not slide out of the bin. I have found that the angle of incline will be usually somewhere between 15 degrees and 25 degrees to the horizontal.

In order that each of the units which I have described may be stacked one upon the other, I have caused the side walls 10 to be inclined toward each other as they proceed upwardly, so that the upper reinforced edges 30 of the side walls will contact with the bottom surface 31 of the bottom wall, there being lugs 32 secured along the outer surface of each side wall somewhere near the forward portion thereof which will engage along the reinforced edges of the bin beneath so as to prevent lateral movement of the bin. This engagement is 32 in Fig. 4.

The back wall 15 will be tapered to follow the inward inclination of the side walls 10 and by this arrangement, the flanges 16 on each back wall on the portion which extends below or beyond the bottom wall will telescope with the flanges of the back wall of the bin beneath it, as seen in Figs. 2 and 3, so that lateral movement of this end of the bin is prevented.

The inward upward inclination of the side walls will be sufficient for the telescoping parts of the flanges 16 of the back wall and the lugs 32 will be flush with the lower portion of the bin so that when the bins are stacked side by side they may be placed close together without any substantial crevices or spaces between them.

In order that the bins may be made to conform to the arc of a circle about the operator as a center, the bottom walls are somewhat wedge-shaped as seen best in Figs. 1 and 5; and the side walls 10 converge toward each other from back to front so that this relationship of the bins may be provided and yet a maximum capacity of a bin is had for the area which the assembly occupies.

By this arrangement I may assemble any number of unit bins side by side and in superimposed locked relation to any desired height whereby a large number of different articles to be assembled may be conveniently arranged about an operator with each bin so inclined that the bins will feed their contents forward into a convenient position at the mouth of the bin to be readily accessible to the operator for assembly, whereby the piecework of the operator may be speeded up and the efficiency of the worker increased.

The foregoing description is directed solely towards the construction illustrated, but I desire it to be understood that I reserve the privilege of resorting to all the mechanical changes to which the device is susceptible.

I claim:

1. In combination a plurality of unit bins, each comprising upstanding side walls inclined towards each other widthwise of the bin, a bottom wall along the lower edge of the side walls, a back end wall extending upwardly at right angles to the horizontal and having flanges at the side edges thereof and extending beyond the lower edge of said side walls and bottom wall to dispose the bottom wall in inclined sloping relation at an obtuse angle with the back end wall, with the upper edge of one bin being of a size to engage the bottom of the one above, with the portion of said end wall extending along the upper portion of the end wall of the unit bin beneath it, with the adjacent portion of the flange on each bin in overlapping relation, and means including said flanges to prevent lateral sliding of superimposed bins.

2. In combination a plurality of metal unit bins, each comprising upstanding side walls inclined towards each other widthwise of the bin, a bottom wall along the lower edge of the side walls, a back end wall extending upwardly at right angles to the horizontal and having side flanges thereon and extending beyond the lower edge of said side walls and bottom wall to dispose the bottom wall in inclined sloping relation at an obtuse angle with said back end wall, said flange receiving said side walls and secured thereto, the upper edge of one bin being of a size to engage the bottom of the one above, the portion of said end wall projecting beyond the bottom wall being of a width to extend along the upper portion of the end wall of the unit bin beneath it with adjacent portions of the flange of each bin in overlapping relation, and means including said flanges to prevent lateral sliding of the superimposed bins, the inclination of the bottom wall being sufficient to cause movement of the contents of the bin to move forward in the bin and the forward edge of the bottom wall being inclined upwardly to retard movement of the contents of the bin in its forward movement.

3. In combination, a plurality of unit bins, each comprising upstanding converging side walls, a back end wall extending beyond the lower edge of said side walls and at right angles to the horizontal and having flanges between which the side walls are received and secured thereto, a bottom wall inclined at an obtuse angle from said back end wall and secured along the lower edge of said side walls and to said end wall at a location upwardly from the edge of said end wall for engaging at one area a support on the upper edge of a unit bin beneath it and leaving an open mouth at the front end of the unit bin, said bottom wall being oppositely and upwardly inclined at its mouth, the lower portion of the back end wall extending along the upper portion of the end wall beneath with the adjacent flange portion of each bin in overlapping relation to prevent relative lateral movement of the end walls, and lugs on the sides of the unit bin extending below the bottom wall to engage along the side walls of the bin beneath it to prevent lateral movement of said bin.

4. In combination a plurality of metal unit bins, means on each bin for telescoping a portion of another bin when placed thereon in superimposed relation, each bin having a rear wall and a bottom wall inclined at an obtuse angle with the rear end wall, said inclination being such that the contents of said bin will move toward the front end of said bin, said bottom wall being directed upwardly at its mouth to retard the movement of the contents of the bin, and side walls extending upwardly from the edges of the bottom wall and forwardly from the rear wall having a mouth for the reception and discharge of goods and with the upper edges of the said side walls being folded outwardly and downwardly to engage the outer surface of said side walls providing a smooth upper edge, said bin having its rear wall extended downwardly beyond the bottom wall in overlapping relation with the rear wall of the bin beneath and means including flanges on said rear wall to engage the walls of the bin beneath to prevent lateral sliding of superimposed bins.

THOMAS SHAW.