

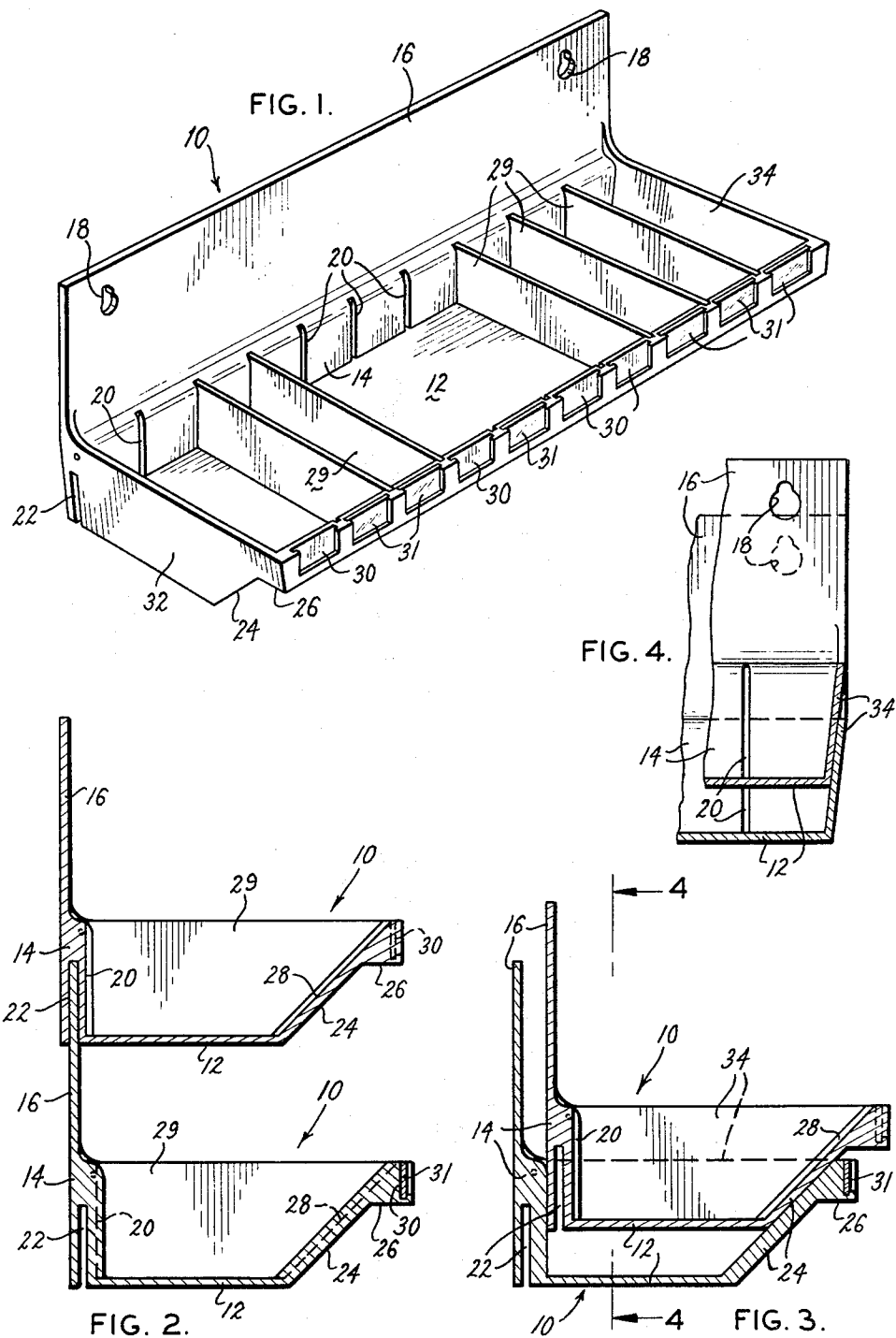
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3,207,321

BINS

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3,207,321
BINS

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This invention relates to improvements in bins. More particularly, this invention relates to improvements in bins which can be used to hold small parts.

It is, therefore, an object of the present invention to provide an improved bin which can be used to hold small parts.

This invention is an improvement upon the invention disclosed in my Patent No. 2,974,808 for Bins which was granted March 14, 1961.

The bin provided by the present invention has a rear wall with an upward extension thereon and with a slot therein which opens to the bottom thereof. The slot in the rear wall of any given bin can be telescoped downwardly over the top edge of the upward extension of a next lower bin of similar form. The telescoping of that slot over that top edge will hold those bins in vertically stacked array. The slot in the rear wall of each bin is disposed forwardly of the upward extension of that rear wall; and this is important because it disposes the center of gravity of any upper bin a short distance rearwardly of the center of gravity of the next lower bin. As a result, it is possible to assemble a number of bins in vertically stacked array without having those bins tend to tilt forwardly and fall over. It is, therefore, an object of the present invention to provide a bin which has a rear wall with an upward extension thereon and with a slot therein which opens to the bottom thereof and which is disposed forwardly of that upward extension.

The bin provided by the present invention has an inclined front wall and inclined side walls; and each of those walls inclines upwardly and outwardly from the bottom of that bin. Those inclined walls coact with the vertically directed rear wall of the bin to enable that bin to remain level and to be solidly nested within another bin of similar form. As a result, several bins can be nested together for storage and shipment without tilting or shifting relative to each other. It is, therefore, an object of the present invention to provide a bin with front and side walls that incline upwardly and outwardly and with a vertically directed rear wall.

Other and further objects and advantages of the present invention should become apparent from an examination of the drawing and accompanying description.

In the drawing and accompanying description a preferred embodiment of the present invention is shown and described but it is to be understood that the drawing and accompanying description are for the purpose of illustration only and do not limit the invention and that the invention will be defined by the appended claims.

In the drawing,

FIG. 1 is a perspective view of one form of bin that is made in accordance with the principles and teachings of the present invention,

FIG. 2 is a transverse sectional view through a plurality of bins of the type shown in FIG. 1 as those bins are assembled in vertically stacked array,

FIG. 3 is a transverse sectional view through a plurality of bins of the type shown in FIG. 1 as those bins are nested together, and

FIG. 4 is a sectional view through the bins of FIG. 3; and it is taken along the plane indicated by the line 4—4 in FIG. 3.

Referring to the drawing in detail, the numeral 10 generally denotes one form of bin that is made in accordance with the principles and teachings of the present invention.

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That bin has a bottom 12 which is flat and which will normally be horizontally directed. A rear wall 14 extends upwardly at right angles from the rear edge of the bottom 12; and that rear wall is thick, as shown particularly by FIGS. 2 and 3. A thin upward extension 16 is provided on the rear wall 14; and the rear face of that upward extension is coplanar with the rear face of the rear wall 14. A slot 22, which is slightly wider than the upward extension 16 is thick, is formed in the rear wall 14; and that slot opens to the bottom of that rear wall. As a result, the slot 22 can accommodate the top edge and the upper portion of the upward extension 16 of a next lower bin 10, whenever those bins are arranged in vertically stacked array—all as shown by FIG. 2.

The upward extension 16 has two keyhole-shaped openings 18 therein. Those openings are adjacent the opposite ends of that upward extension; and they are adjacent the top edge of that upward extension. Those openings are not essential; but they are desirable because they make it possible for the bin 10 to be held by pins or hooks which project horizontally outwardly from a wall or support.

The rear wall 14 also has a number of vertically directed notches 20 therein; and those notches open to the front face of that rear wall. The notches 20 are shallow, as indicated particularly by FIGS. 2 and 3. Those notches are straight; and they extend from the upper edge of the rear wall 14 down to the upper face of the bottom 12.

The numeral 24 denotes the front wall of the bin 10; and that wall inclines forwardly and upwardly from the front edge of the bottom 12. A horizontally directed offset 26 is provided on the under face of the front wall 24 adjacent the upper edge of that front wall. That offset enables the upper portion of the front wall 24 to be vertically directed. Generally rectangular slots 30 are formed in the upper portion of the front wall 24; and those slots can accommodate small cards or tags 31 on which identifying numbers, prices, names, or other indicia can be inscribed or printed.

Notches 28 are formed in the front wall 24; and those notches open to the inner face of that front wall. The notches 28 are shallow, as indicated particularly by FIGS. 2 and 3. Those notches are straight; and they extend from the upper edge of the front wall 24 down to the upper face of the bottom 12. The notches 28 in the inner face of the front wall 24 are in register with the notches 20 in the front face of the rear wall 14. Each pair of notches 20 and 28 can accommodate a partition or divider 29 of the type disclosed in my said patent. By appropriately disposed partitions or dividers 29 so they are held by the notches 20 and 28 the bin 10 can be subdivided into the desired number of compartments in which small parts can be kept; all as explained in my said patent.

The numeral 32 denotes the left-hand side wall of the bin 10; and the numeral 34 denotes the right-hand side wall of that bin. Those side walls incline outwardly and upwardly from the sides of the bottom 12 of that bin.

As shown particularly by FIGS. 3 and 4 the inclined front wall 24 and the inclined side walls 32 and 34 coact with the rear wall 14 to permit the bin 10 to be nested within a next lower bin. Further as shown by FIG. 4, that vertically directed rear wall coacts with that front wall and with those side walls to hold the bottom 12 of the nested bin 10 parallel to the bottom 12 of the next lower bin 10. As a result, the bins 10 nest compactly and neatly for storage and shipment and will not tilt or shift relative to each other.

As indicated particularly by FIG. 2, the slot 22 of any given bin 10 can be telescoped downwardly over the top edge and the upper portion of the upward extension 16 of a next lower bin, whenever those bins are to be ar-

ranged in vertically stacked array. The engagement between the slot 22 of a given bin 10 and the upper portion of the upward extension 16 of a next lower bin 10 will be sufficiently intimate to avoid rocking or tilting of that given bin relative to that next lower bin. The displacement of the slot 22 of that given bin forwardly of the upward extension 16 of that given bin will displace the center of gravity of that given bin a short distance rearwardly of the center of gravity of the next lower bin, whenever those bins are in vertically stacked array. That displacement is indicated by FIG. 2; and it is desirable because it enables a number of bins 10 to be arranged in vertically stacked array without tending to become overbalanced and to tilt forwardly.

When the bins 10 are in vertically stacked array, parts can be readily introduced into the various compartments thereof and can also be readily removed from those compartments. Furthermore, the vertically stacked array of bins can easily be lifted and moved as a unit, and it will be stable and self supporting.

Whenever it is desirable to store or to ship the bins 10, they can be nested together as shown particularly by FIGS. 3 and 4. Whenever they are so nested, those bins will occupy a small space, will be stable, and will not tilt or shift relative to each other.

Whereas the drawing and accompanying description have shown and described a preferred embodiment of the present invention it should be apparent to those skilled in the art that various changes may be made in the form of the invention without affecting the scope thereof.

What I claim is:

1. A bin which can be arranged atop another bin in vertically stacked array or which can be nested within said other bin and which comprises:

- (a) a bottom,
- (b) a rear wall that extends upwardly from said bottom at right angles to said bottom,
- (c) an upward extension on said rear wall which has the rear face thereof coplanar with the rear face of said rear wall,
- (d) said rear wall being thicker than said upward extension, whereby the front face of said rear wall is disposed forwardly of the front face of said upward extension,
- (e) a slot in said rear wall that opens to the bottom of said rear wall,
- (f) said slot being disposed forwardly of said upward extension,
- (g) a front wall that inclines upwardly and forwardly from the front edge of said bottom,
- (h) a side wall that inclines upwardly and outwardly from one side of said bottom, and
- (i) a second side wall that inclines upwardly and outwardly from the other side of said bottom,
- (j) said slot being adapted to telescope downwardly over the top edge and the upper portion of the upward extension of a next lower bin to hold said bins in intimate engagement in vertically stacked array, and also to displace the center of gravity of the upper bin rearwardly relative to the center of gravity of said next lower bin,
- (k) the inclined front and side walls and said vertically directed rear wall of said bin coacting with the inclined front and side walls and with the vertically directed rear wall of a lower bin to hold said bins nested with their bottoms parallel and to prevent tilting and shifting of said bins relative to each other,
- (l) said rear wall and said side walls having substantially the same heights.

2. A bin which can be arranged atop another bin in vertically stacked array or which can be nested within said other bin and which comprises:

- (a) a bottom,
- (b) a rear wall that extends upwardly from said bottom at right angles to said bottom,

- (c) an upward extension on said rear wall,
 - (d) said rear wall being thicker than said upward extension, whereby the front face of said rear wall is disposed forwardly of the front face of said upward extension,
 - (e) a slot in said rear wall that opens to the bottom of said rear wall,
 - (f) said slot being disposed forwardly of said upward extension,
 - (g) a front wall that inclines upwardly and forwardly from the front edge of said bottom,
 - (h) a side wall that inclines upwardly and outwardly from one side of said bottom, and
 - (i) a second side wall that inclines upwardly and outwardly from the other side of said bottom,
 - (j) said slot being adapted to telescope downwardly over the top edge and the upper portion of the upward extension of a next lower bin to hold said bins in intimate engagement in vertically stacked array, and also to displace the center of gravity of the upper bin rearwardly relative to the center of gravity of said next lower bin,
 - (k) the inclined front and side walls and said vertically directed rear wall of said bin coacting with the inclined front and side walls and with the vertically directed rear wall of a lower bin to hold said bins nested with their bottoms parallel and to prevent tilting and shifting of said bins relative to each other.
3. A bin which can be arranged atop another bin in vertically stacked array or which can be nested within said other bin and which comprises:

- (a) a bottom,
- (b) a rear wall that extends upwardly from said bottom,
- (c) an upward extension on said rear wall,
- (d) said rear wall being thicker than said upward extension,
- (e) a slot in said rear wall that opens to the bottom of said rear wall,
- (f) said slot being disposed forwardly of said upward extension,
- (g) a front wall that extends upwardly and outwardly from the front edge of said bottom,
- (h) a side wall that extends upwardly and outwardly from one side of said bottom, and
- (i) a second side wall that extends upwardly and outwardly from the other side of said bottom,
- (j) said slot being adapted to telescope downwardly over the top edge and the upper portion of the upward extension of a next lower bin to hold said bins in intimate engagement in vertically stacked array, and also to displace the center of gravity of the upper bin rearwardly relative to the center of gravity of said next lower bin,
- (k) the front and side walls and said rear wall of said bin coacting with the front and side walls and with the rear wall of a lower bin to hold said bins nested and to prevent tilting and shifting of said bins relative to each other.

4. A bin which can be arranged atop another bin in vertically stacked array or which can be nested within said other bin and which comprises:

- (a) a bottom,
- (b) a rear wall that extends upwardly from said bottom,
- (c) an upward extension on said rear wall,
- (d) a slot in said rear wall that opens to the bottom of said rear wall,
- (e) said slot being disposed forwardly of said upward extension,
- (f) a front wall that extends upwardly and outwardly from the front edge of said bottom,
- (g) a side wall that extends upwardly and outwardly from one side of said bottom, and
- (h) a second side wall that extends upwardly and outwardly from the other side of said bottom,

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- (i) said slot being adapted to telescope downwardly over the top edge and the upper portion of the upward extension of a next lower bin to hold said bins in intimate engagement in vertically stacked array, and also to displace the center of gravity of the upper bin rearwardly relative to the center of gravity of said next lower bin. 5
5. A bin which can be arranged atop another bin in vertically stacked array or which can be nested within said other bin and which comprises: 10
- (a) a bottom,
- (b) a rear wall that extends upwardly from said bottom,
- (c) an upward extension on said rear wall, 15
- (d) a slot in said rear wall that opens to the bottom of said rear wall,
- (e) said slot being disposed forwardly of said upward extension,
- (f) a front wall that extends upwardly and outwardly from the front edge of said bottom, 20
- (g) a side wall that extends upwardly and outwardly from one side of said bottom, and

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- (h) a second side wall that extends upwardly and outwardly from the other side of said bottom,
- (i) said slot being adapted to telescope downwardly over the top edge and the upper portion of the upward extension of a next lower bin to hold said bins in intimate engagement in vertically stacked array, and also to displace the center of gravity of the upper bin rearwardly relative to the center of gravity of said next lower bin,
- (j) said rear wall and said upward extension thereon having the front faces thereof disposed in horizontally displaced vertically directed planes.

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