Aug. 24, 1943. P. ROSENBERG 2,327,742

BIN

Filed Jan. 12, 1942

Fig. 1.

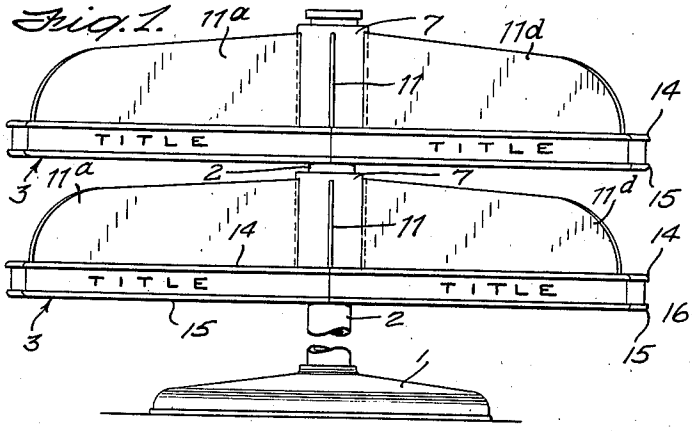


Fig. 4.

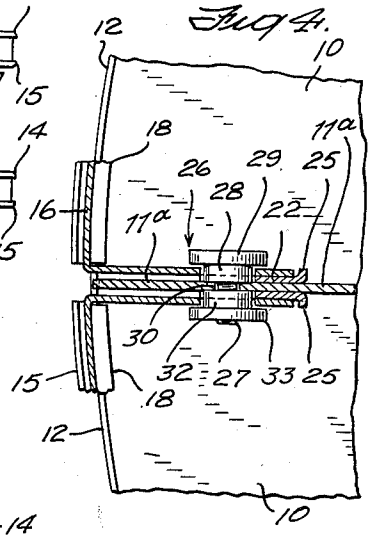


Fig. 2.

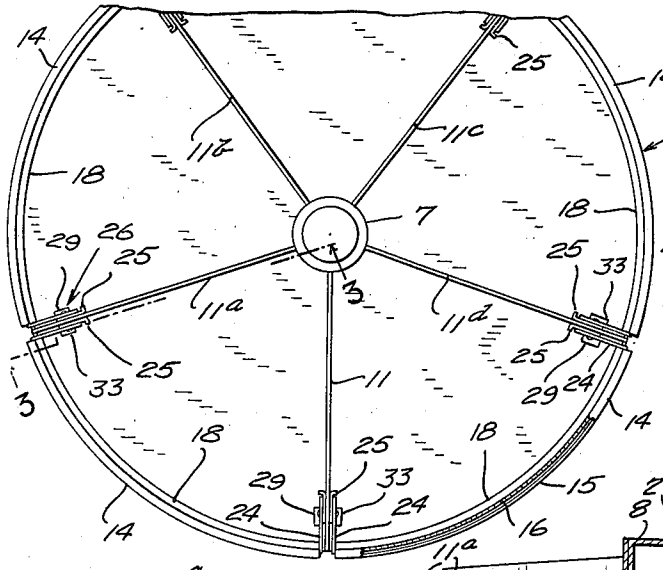


Fig. 5.

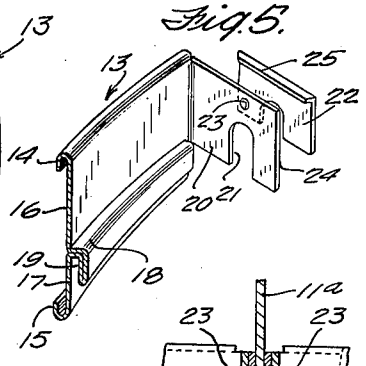


Fig. 3.

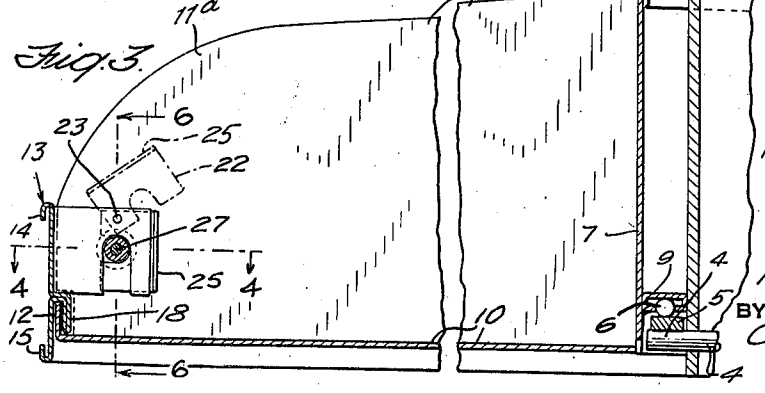
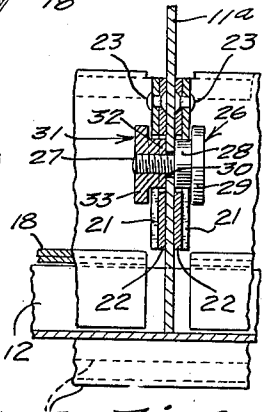


Fig. 6.



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BIN

Philip Rosenberg, New York, N. Y.

Application January 12, 1942, Serial No. 426,403

6 Claims. (Cl. 211—131)

This invention relates to bins, more particularly to bins of the rotary or revolving type.

Bins of the kind referred to commonly include an upright central shaft and a series of bin sections mounted at different levels on the shaft, each with capacity for rotation relative to the shaft and independently of the others.

Each bin section generally comprises a sleeve rotatably mounted on the shaft, a platform or floor member having an upstanding circumferential flange, and a series of vertical, radially disposed dividers permanently connected to the sleeve and to the platform to support the platform from the sleeve, and to divide the platform into sectors.

It is desirable that the user of the bin have the continuing option of using a sector as an open bin compartment or for holding a drawer cabinet section. When the sector is used as a bin compartment, it is necessary that the compartment be provided with an outer boundary wall which is desirably adapted also to serve as an index card holder, but when the sector is to be made to contain a cabinet section, the outer boundary wall should be removed since it is not then needed and would be in the way.

It is an object of the present invention to provide a removable wall segment adapted to be fitted upon the circumferential or peripheral flange segment of a sector and formed continuously at its outer side with opposed card holding channels.

It is a further object of the invention to provide wall segments, each adapted to be fitted upon the circumferential or peripheral flange segment of a sector and to be attached to the dividers which bound the sector, and each with capacity for removal without disturbing the attachment of other similar wall segments in other sectors.

The invention is not necessarily limited to rotary bins nor to circular bins, but may be used to advantage in any bin structure in which adjacent bin compartments radiate from a common axis.

Other objects and advantages will hereinafter appear.

In the drawing forming part of this specification

Fig. 1 is a view in elevation of a rotary bin embodying the invention, the structure being broken away intermediate its ends for compactness of illustration;

Fig. 2 is a fragmentary plan view, partly broken away, of the bin illustrated in Fig. 1;

Fig. 3 is a fragmentary sectional view taken upon the line 3—3 of Fig. 2, looking in the direction of the arrows, the view being on a larger scale than Figs. 1 and 2, and the structure being broken away intermediate its ends for compactness of illustration;

Fig. 4 is an enlarged, fragmentary, detail, sectional view, taken upon the line 4—4 of Fig. 3, looking in the direction of the arrows;

Fig. 5 is a sectional, detail, perspective view showing one end of a wall segment; and

Fig. 6 is a fragmentary, vertical, sectional view taken upon the line 6—6 of Fig. 3, looking in the direction of the arrows.

The illustrative bin comprises a base 1 which supports an upstanding central shaft 2. Bin sections 3 are mounted at different levels upon the shaft 2 each with capacity for rotation relative to the shaft and independently of the others. Only two bin sections are illustrated, but it is apparent, of course, that any desired number of sections may be mounted upon a single shaft.

The mounting of a bin section 3 is best illustrated in Fig. 3. A pin 4 extends diametrically through the shaft 2 and projects beyond the shaft at opposite sides. A ring 5 rests on the ends of the bin 4 and supports a ball bearing 6. A sleeve 7 has welded to its inner surface upper and lower flanged rings 8 and 9. The ring 9 is supported upon the ball bearing 6.

A platform or floor member 10 is supported from the sleeve 7 by a series of vertical, radially extending dividers 11, 11*a*, etc., each divider being suitably secured along its inner vertical edge to the sleeve 7 as by welding, and each being suitably secured along its lower horizontal edge to the platform 10 as by welding. The several dividers illustrated are designated, respectively, 11, 11*a*, 11*b*, 11*c* and 11*d* for differentiation. The dividers separate the bin section into a series of bin compartments, the dividers forming vertical radial walls for the compartments, and the platform 10 forming a common floor member for all the compartments. The platform 10 is formed with a circumferential upstanding lip or flange 12.

The sectors are all duplicates of one another and, therefore, a description of the sector bounded by the dividers 11 and 11*a* will suffice for all. A peripheral wall segment 13 (best illustrated in Fig. 5) is adapted to be fitted upon the lip or flange 12 of the floor member 10 between the dividers 11 and 11*a*. This wall seg-

ment is desirably a formed, arcuate sheet metal member having the cross-sectional shape illustrated in Fig. 5.

The segment includes upper and lower edge portions 14 and 15 which are infolded to form opposed card receiving channels, vertical body portions 16 and 17 adjacent the respective edge portions which are disposed in coplanar relation, and an intermediate body portion 18 which is folded upon itself to form a two-ply section, the two-ply section being extended rearward and downward to provide a channel 19 for embracing the flange 12. The segment is also provided with inturned ears 20 at its opposite ends for attachment to the dividers 11 and 11*a*. The segment may be formed of light gauge sheet metal and yet be of adequate strength and rigidity to meet every practical requirement, the cross-sectional shape illustrated, together with the longitudinal curvature, serving to afford a high degree of rigidity in relation to the thickness of the metal employed. The folded, two-ply body portion and the infolded edge portions contribute substantially to this result.

Each ear 20 is formed with a downwardly extending, downwardly opening slot 21 for embracing a projection on the adjacent divider which will be described presently. Each ear also has pivotally attached to it a latch 22, the pivotal mounting being effected through a rivet 23 above the inner or upper end of the slot 21. The rivet 23, while permitting the latch to be rotated, maintains a firm frictional pressure between the latch 22 and the ear 20. The latch 22 is formed with a slot 24 which is adapted to be turned into embracing relation to the same projection which is embraced by the slot 21. When the latch has been thus turned into latching position, the slots 21 and 24 face substantially at right-angles to one another. The latch 22 is formed with a short flange 25 for facilitating operation of the latch to and from latching position.

The projections on the dividers are best illustrated in Figs. 4 and 6. A bolt 26 includes a threaded stem 27, a boss 28 larger than the stem, and a head 29 larger than the boss. The threaded stem is passed through an opening 30 formed in the divider near the outer end thereof. A nut 31, comprising a boss 32 and a head 33, is threaded onto the stem 27 of the bolt 26. The notch 21 of an ear 20 and the notch 24 of the associated latch 22 embrace in one instance the boss 28 of the bolt 26, and in the other instance the boss 32 of the nut 31. The latch 22 is illustrated in each instance as mounted upon the supporting ear 20 to lie between the ear and the adjacent divider, but it may be mounted on the opposite side of the ear 20. In any case the flange 25 is disposed to lie substantially in the plane of the ear 20, so that the flange never juts out into the usable bin space and does not tend to promote accidental unlatching of the ear.

With the construction described, it is to be noted that a wall segment 13 may be put in place or removed without disturbing the bolt 26 and the nut 31 or the corresponding wall segment of an adjacent sector. The wall segment is first fitted onto the flange or lip 12 of the platform 10, being gently tapped into place with the notches 21 of the ears 20 embracing the projections of adjacent dividers. The latches 22 are then gently tapped to their latching positions and the assembly is complete. Should it become necessary to remove a wall segment, a suitable tool may be inserted beneath the flange 25 of a latch 22 and manipulated to operate the latch to a position like that illustrated in Fig. 5. When both latches of a wall segment have been thus released, the segment may be readily separated from the platform 10 and the dividers.

It is to be noticed that the wall segment provides continuous, opposed card receiving channels, and that the outer faces of the body portions 16 and 17 of the segment are continuously smooth. Thus, cards may be inserted in various portions of the channels and shifted as desired. The importance of this is that very frequently a sector such as 11—11*a* is subdivided by removable dividers (not shown) into a series of compartments. With the wall segment structure described a card may be inserted in front of each of these subdivisions, and when the removable dividers are rearranged, the cards may be changed or rearranged correspondingly.

I have described what I believe to be the best embodiment of my invention. I do not wish, however, to be confined to the embodiment shown, but what I desire to cover by Letters Patent is set forth in the appended claims.

I claim:

1. A bin including, in combination, a bin floor member having an upstanding peripherally extending flange, a series of vertically disposed dividers that extend toward the center of the floor member for separating the bin into a plurality of sector-like compartments, means providing projections at opposite sides of each divider near the outer end thereof, wall members each forming the outer boundary of one of the sector-like compartments, each such wall member being coextensive in length with the outer boundary of one of the compartments, and formed to fit upon the peripherally extending flange of the floor member, each such wall member including at each end thereof an inturned ear having a downwardly opening slot for receiving a portion of the projection at one side of an adjacent divider, and a slotted latch pivotally mounted on the ear and rotatable into embracing relation to the projection embraced by the ear with the latch slot extending substantially at right angles to the ear slot.

2. A bin including, in combination, a bin floor member having an upstanding peripherally extending flange, a series of vertically disposed dividers that extend toward the center of the floor member for separating the bin into a plurality of sector-like compartments, means providing headed projections at opposite sides of each divider near the outer end thereof, wall members each forming the outer boundary of one of the sector-like compartments, each such wall member being coextensive in length with the outer boundary of one of the compartments, and formed to fit upon the peripherally extending flange of the floor member, each such wall member including at each end thereof an inturned ear having a downwardly opening slot for receiving a portion of the headed projection at one side of an adjacent divider between the head of the projection and the divider, a slotted latch pivotally mounted on each ear and rotatable into embracing relation to the projection embraced by the ear with the latch slot extending substantially at right angles to the ear slot, and a rivet pivotally supporting each latch on the associated ear and pressing the latch against the ear with firm frictional pressure.

3. A bin as set forth in claim 1 in which the means for providing headed projections at op-

posite sides of each divider comprises a bolt having a threaded stem passed through the divider, a hub in contact with one face of the divider and a head, and a nut threaded on the stem and having a hub in contact with one face of the divider and a head adjacent the hub.

4. A circular bin including, in combination, a base disc having an upstanding circumferentially extending flange, a series of vertically disposed, radially extending dividers connected to the base disc for separating the bin into a plurality of sector-like compartments, means providing projections at opposite sides of each divider near the outer end thereof, curved sheet metal segments each having a rigid rearwardly displaced, uninterrupted lip coextensive in length with the segment for defining with the body portion of the segment a curved flange-embracing channel for receiving and frictionally holding the circumferential flange substantially to prevent all movement of the segment relative to the flange save in an upward direction, each segment forming the outer wall of one of the sector-like compartments, and each segment including an inturned ear at each end thereof, and latch means on each ear cooperative with a divider projection to secure the ear against upward movement relative to the divider.

5. A circular bin including, in combination, a base disc having an upstanding circumferential flange, a series of vertically disposed, radially extending dividers for separating the bin into a plurality of sector-like compartments, curved, sheet metal, segments each forming the outer wall of one of the compartments, each segment including vertical upper and lower body portions disposed in coplanar relation, an intermediate body portion folded upon itself to form a two-ply section, said two-ply section being folded rearward and downward to define with the lower body portion a flange-embracing channel, and ears on opposite ends of the segment and means cooperating with the channel defining portions of the segment for securing each ear in fixed position to an adjacent divider.

6. A device for use in a bin which includes a floor member having an upstanding circumferential flange, and radial dividers each having headed projections secured thereto, said device consisting of a segment adapted to be interfitted with the floor flange of the bin and to be attached at its ends to adjacent dividers thereof, said segment consisting of a curved, sheet metal member including upper and lower edge portions infolded to provide reinforcement, vertical upper and lower body portions adjacent the respective edge portions disposed in coplanar relation, and an intermediate body portion folded upon itself to form a rigid two-ply section, said two-ply section being extended rearward and downward to form a continuous rigid lip for defining with the lower body portion a flange-embracing channel, and said segment having inturned slotted ears at opposite ends thereof constructed for attachment to the dividers through the medium of the headed projections.

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