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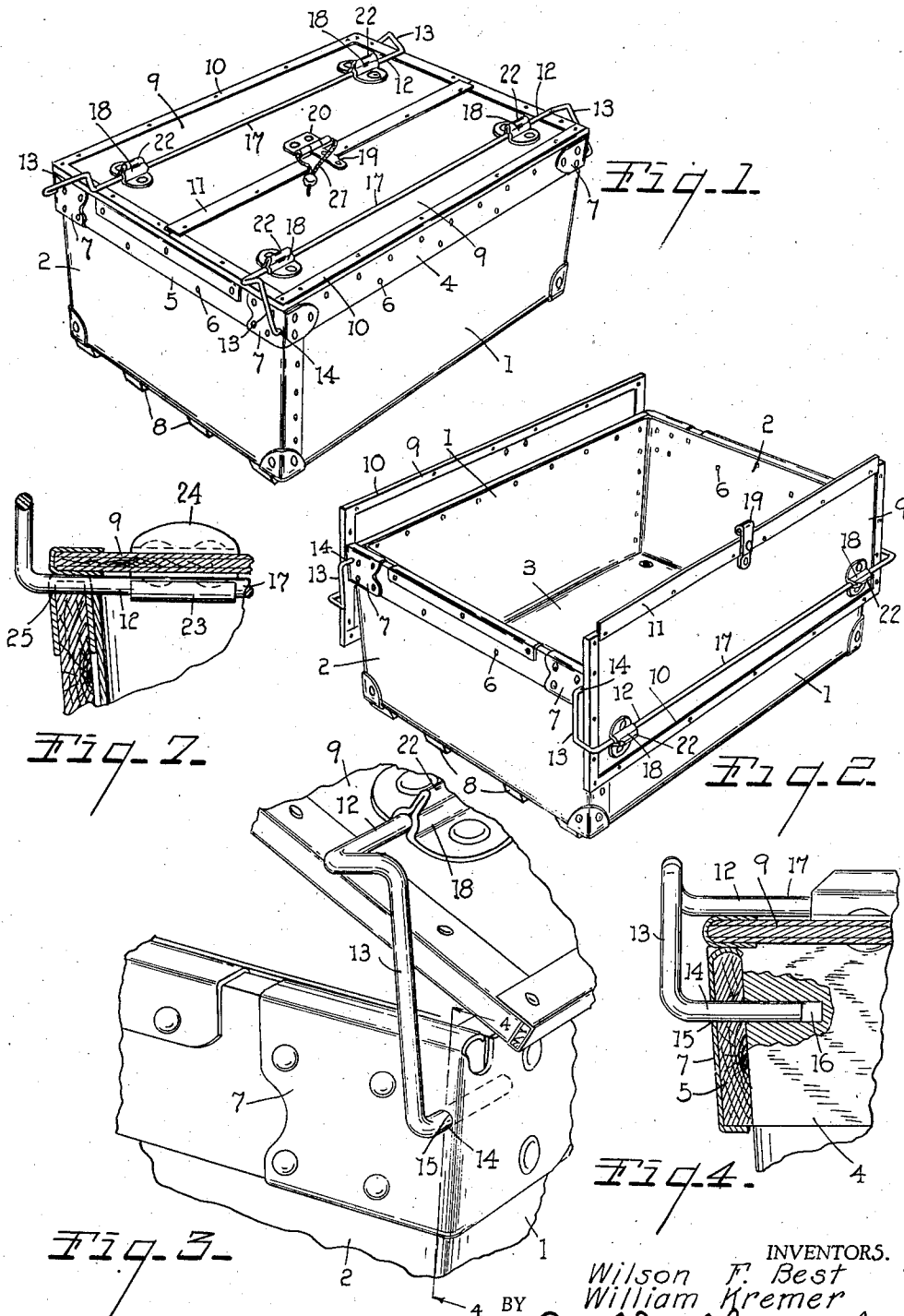
W. F. BEST ET AL

2,112,451

STACKING AND NESTING BOX OR RECEPTACLE

Filed Aug. 23, 1937

2 Sheets-Sheet 1



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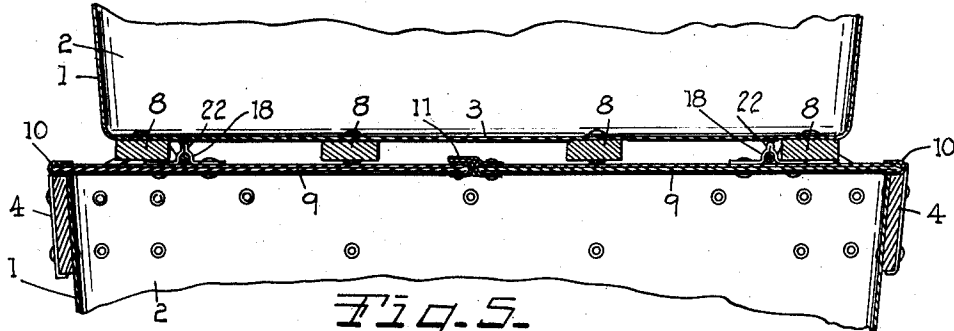
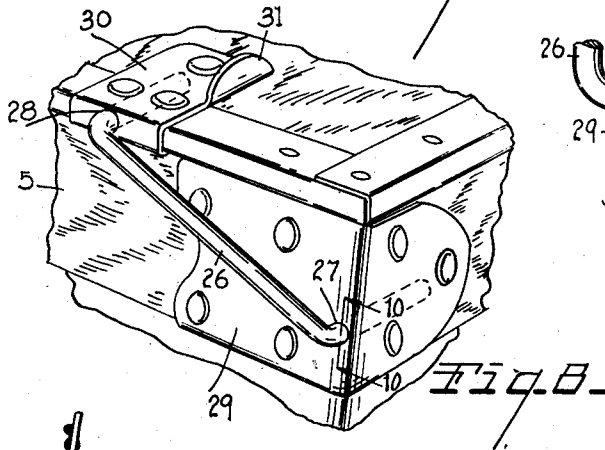
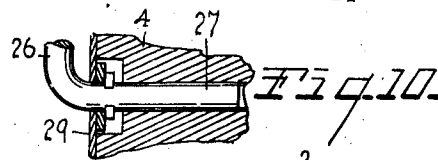
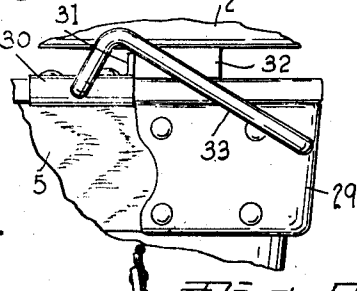
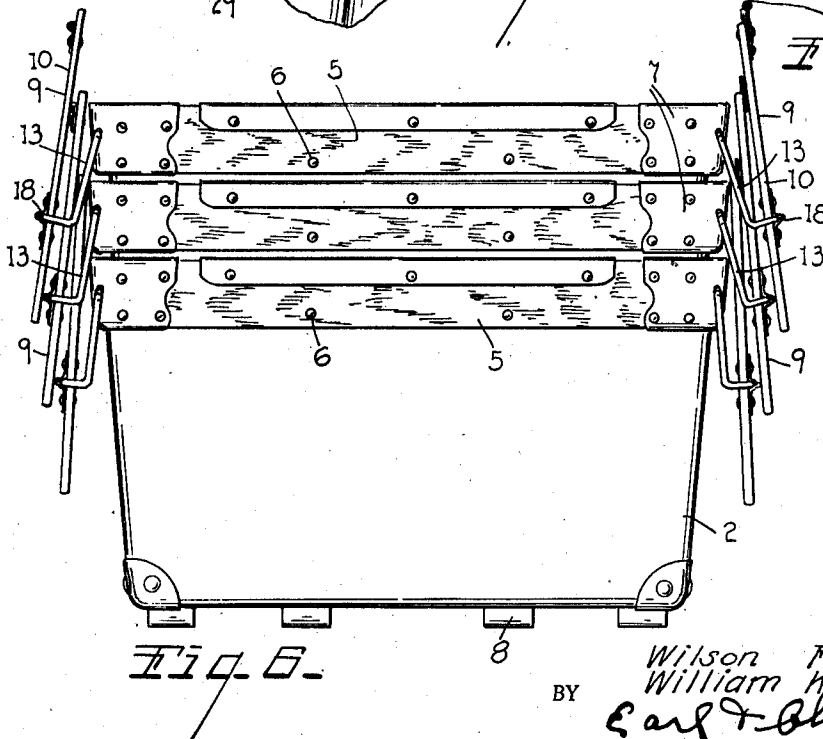
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STACKING AND NESTING BOX OR RECEPTACLE

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2 Sheets-Sheet 2



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STACKING AND NESTING BOX OR
RECEPTACLEWilson F. Best and William Kremer, Grand
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17 Claims. (Cl. 229-44)

The main objects of this invention are:

First, to provide a covered stacking or nesting box which when the covers are open permits compact nesting and when the covers are closed permits effective stacking.

Second, to provide a receptacle having these advantages in which when the covers are open they are so positioned as not to obstruct the placing of articles in or removal from the receptacle.

Third, to provide a structure embodying these advantages which is light in weight and at the same time strong and durable.

Fourth, to provide a covered receptacle adapted for nesting and stacking with other similar receptacles which is very easy to manipulate in the matter of opening and closing the covers, the stacking of a group of receptacles and the nesting of a group of receptacles.

Fifth, to provide a structure of this character which is quite simple and economical in its parts.

Objects relating to details and economies of the invention will appear from the description to follow. The invention is defined and pointed out in the claims.

Preferred embodiments of the invention are illustrated in the accompanying drawings, in which:

Fig. 1 is a perspective view of a structure embodying the features of our invention with the covers closed.

Fig. 2 is a perspective view with the covers open.

Fig. 3 is an enlarged fragmentary perspective view illustrating one of the covers in partially open position.

Fig. 4 is an enlarged fragmentary view partially in section on line 4-4 of Fig. 3.

Fig. 5 is a fragmentary transverse section of a pair of receptacles in stacked relation.

Fig. 6 is an end elevation of a group of receptacles in nested relation.

Fig. 7 is a fragmentary view mainly in section of a modified form or embodiment of our invention.

Fig. 8 is a fragmentary perspective view of another modified form of the hinge member and stacking lug.

Fig. 9 is a fragmentary end elevation of another modification or embodiment of the invention showing a pair of receptacles in stacking relation.

Fig. 10 is a fragmentary view partially in section on line 10-10 of Fig. 9.

In the embodiment of the invention as illus-

trated, the side walls 1, 1, end walls 2, 2 and bottom 3 are formed of fiberboard. In the structure illustrated, the walls are inclined outwardly or the box is tapered to permit nesting. The rim side and end pieces 4 and 5 are arranged on the outer sides of the walls with their upper edges substantially flush therewith, and the bottoms fixedly secured together by rivets indicated conventionally at 6. The boxes are further reinforced by the angled corner brackets 7. Bottom slots 8 are provided to reinforce the bottom and provide runners and wear pieces.

The cover comprises a pair of cover members designated generally by the numeral 9, these cover members in the embodiment illustrated being formed of panels of veneer with metal edge bindings 10 folded over and secured to the edges of the panel, these edge bindings being of channel cross-section to receive the edges of the panel.

The inner edge binding of one of the cover members is provided with an outwardly offset flange 11 which overlaps the other cover member when the covers are closed, as shown in Figs. 1 and 5, and closes the joint between the cover members. It also serves as a weight-sustaining member when a load is upon the closed cover, such for example as a superimposed box or a series of boxes.

The cover members are of such dimensions as when closed they rest upon the edges of the receptacle so that any load upon the cover members is sustained by the receptacle directly and not by the hinged members or the hinge connections.

The cover members are hinged to the receptacle so that they may be swung down to a substantially vertical collapsed position at the side of the receptacle when open as shown in Fig. 2 in which position they leave the box fully open for the insertion or removal of its contents, and when the covers are closed the receptacle is completely closed or covered.

In the preferred embodiment of our invention as shown in Figs. 1 to 5 inclusive, the hinge members designated generally by the numeral 12 are of ball-like form and are provided with angled arms 13 terminating in inturned pintles 14. These pintles are engaged in holes 15 provided therefor in the corner brackets and project into recesses 16 in the side rails which are aligned with the pintle holes. The cross-pieces 17 of these ball-like hinge members are disposed across the tops of the cover members and secured thereto by the clip-like hinge plates or knuckle members 18, the point of attachment being substan-

tially spaced from the edges of the cover members. The pintles are close to the sides so that with this arrangement, hinge arms of substantial length are provided which permits the cover members being swung down to a substantially vertical collapsed position with the major portions of the cover members below the top of the receptacle.

The cover members of a group or a plurality of nested boxes as shown in Fig. 6 are supported in telescoping overlapping relation. The covers may be readily manipulated from their open to closed position.

For shipping and delivery purposes, it is frequently desirable to provide seals for the boxes and this in the embodiment illustrated comprises a pair of coacting members 19 and 20 having eyes adapted to receive the seal 21. Other forms of latches may be provided if desired.

To facilitate the stacking of a series or group of these covered receptacles with the covers closed, I provide pivot plates 18 with upwardly projecting lugs 22 with which the outer bottom slats or runners 8 engage. These are extensions of the plates so that the superimposed boxes are easily positioned and are not likely to slip off even during transportation where there is considerable swaying or rocking or jolting of the vehicle. To prevent the superimposed boxes slipping endwise, the angles of the hinge arms are arranged to project above the plane of the covers, as is clearly illustrated in Figs. 1 and 4.

In the modification shown in Fig. 7, the cross piece 17 is arranged on the under side of the cover members and in this embodiment the hinge plates 23 are arranged on the under side while the positioning lugs 24 are arranged on the upper side. To receive the cross-piece of the hinge members, the edges of the end walls are notched at 25 so that even though they are on the under side of the covers, the covers do not rock thereon.

In the embodiment shown in Fig. 8, the hinge arms 26 are provided with pintles 27 and 28 at the ends thereof, the pintle 27 being engaged in the corner iron 29 while the pintle 28 is engaged in a hinge plate 30 secured over the edge of the cover member so that the pintle or pivot 28 is in the plane of the cover member instead of being above or below it. The hinge plate 30 is provided with an upwardly projecting positioning lug 31 with which the runner or bottom cleat may be engaged as indicated at 32 in Fig. 9.

In the embodiment shown in Fig. 9, the hinge arm 33 is angled and projects above the plane of the cover members to serve as an end stop or positioning means for a superimposed receptacle.

Our improved nesting receptacle has the advantage of being quickly closed or opened. When open, free access to the inside is afforded. A considerable number of receptacles may be compactly nested with relatively little addition to the transverse dimensions of the box. The closed receptacles may be stacked and are provided with means for retaining them in stacked relation and insuring proper positioning of the superimposed receptacles so that there is little likelihood of the stacks toppling or the stacked receptacles becoming displaced.

We have illustrated and described our improvements in embodiments which we consider very practical. We have not attempted to illustrate other embodiments which we contemplate as it is believed that this disclosure will enable those skilled in the art to embody or adapt our improvements as may be desired.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent, is:

1. The combination with a tapered receptacle comprising side and end walls of fiberboard, side and end rim pieces disposed on the outer sides of the side and end walls and secured thereto, angled corner brackets secured to said side and end rim pieces, the end lapping arms of the corner irons having pintle holes therein adjacent the angles thereof, the side rim pieces having recesses aligned with the pintle holes, complementary cover members comprising panels of fibrous material with surrounding metal edge bindings, the inner edge binding of one of the members having an outwardly offset joint flange overlapping the other cover member when the cover is closed, the cover members when closed resting upon the upper edges of the side and end rim pieces, bail-like hinge members having angled arms with inturned pintles at their ends engaged in said pintle holes of said corner brackets and projecting into said rim recesses, the cross portions of said hinge members being disposed across the tops of the cover members, and clip-like knuckle members engaging said cross portions of said hinge members for pivotally connecting the cover members thereto, said knuckle members having upwardly projecting positioning lugs for a superimposed box, the receptacles being provided with bottom cleats coacting with said knuckle members for laterally positioning a superimposed receptacle, the angles of the hinge members projecting above the plane of the top members when the cover is closed and constituting retaining members for a superimposed box, the cover members being supported by the hinge members so that they may be collapsed at the sides of the receptacle when opened and supported in telescoping overlapping relation with cover members of other receptacles when a plurality of the receptacles are nested.

2. The combination with a tapered receptacle comprising side and end walls of fiberboard, side and end rim pieces disposed on the outer sides of the side and end walls and secured thereto, angled corner brackets secured to said side and end rim pieces, the end lapping arms of the corner brackets having pintle holes therein adjacent the angles thereof, the side rim pieces having recesses aligned with the pintle holes, complementary cover members comprising panels of fibrous material with surrounding metal edge bindings, the inner edge binding of one of the members having an outwardly offset joint flange overlapping the other cover member when the cover is closed, the cover members when closed resting upon the upper edges of the side and end rim pieces, bail-like hinge members having arms with inturned pintles at their ends engaged in said pintle holes of said corner brackets and projecting into said rim recesses, the cross portions of said hinge members being disposed across the tops of the cover members, and knuckle members engaging said cross portions of said hinge members for pivotally connecting the cover members thereto, the cover members being supported by the hinge members so that they may be collapsed at the sides of the receptacle when opened and supported in telescoping overlapping relation with cover members of other receptacles when a plurality of the receptacles are nested.

3. The combination with a tapered receptacle comprising side and end walls of fiberboard, side and end rim pieces disposed on the outer sides

of the side and end walls and secured thereto, angled corner brackets secured to said side and end rim pieces, complementary cover members comprising panels of fibrous material with surrounding metal edge bindings, the cover members when closed resting upon the upper edges of the side and end rim pieces, ball-like hinge members having angled arms with inturned pintles at their ends engaged with said corner brackets, the cross portions of said hinge members being disposed across the tops of the cover members, and clip-like knuckle members engaging said cross portions of said hinge members for pivotally connecting the cover members thereto, said knuckle members having upwardly projecting positioning lugs for a superimposed box, the receptacles being provided with bottom cleats coacting with said knuckle members for laterally positioning a superimposed receptacle, the angles of the hinge members projecting above the plane of the top members when the cover is closed and constituting retaining members for a superimposed box, the cover members being supported by the hinge members so that they may be collapsed at the sides of the receptacle when opened and supported in telescoping overlapping relation with cover members of other receptacles when a plurality of the receptacles are nested.

4. The combination with a tapered receptacle comprising side and end walls of fiberboard, side and end rim pieces disposed on the outer sides of the side and end walls and secured thereto, angled corner brackets secured to said side and end rim pieces, complementary cover members comprising panels of fibrous material with surrounding metal edge bindings, the cover members when closed resting upon the upper edges of the side and end rim pieces, ball-like hinge members having arms with inturned pintles at their ends engaged with said corner brackets, the cross portions of said hinge members being disposed across the tops of the cover members, and knuckle members engaging said cross portions of said hinge members for pivotally connecting the cover members thereto, the cross portions of said hinge members being in substantially spaced relation to the edges of the cover members which lie parallel thereto, the cover members being supported by the hinge members so that they may be swung on said hinge members to a collapsed position at the sides of the receptacle when opened and supported in telescoping overlapping relation with cover members of other receptacles when a plurality of the receptacles are nested.

5. The combination with a receptacle shaped for nesting with other similar receptacles, of cover members, bail-like hinge members having angled arms pivoted on said receptacles, the cross portions of said hinge members being disposed across the cover members, and knuckle members engaging said cross portions of said hinge members for pivotally connecting the cover members thereto, the cross portions of said hinge members being in substantially spaced relation to the edges of the cover members which lie parallel thereto, said knuckle member having positioning lugs for a superimposed box, the receptacles being provided with bottom cleats coacting with said knuckle members for positioning a superimposed receptacle, the angles of the hinge members projecting above the plane of the top members when the cover is closed and constituting positioning members for a superimposed box, the cover members being supported by the hinge members so that they can be swung on said hinge members

to a collapsed position at the sides of the receptacle when opened and supported in telescoping overlapping relation with cover members of other receptacles when a plurality of the receptacles are nested.

6. The combination with a receptacle shaped for nesting with other similar receptacles, of cover members, bail-like hinge members having their arms pivoted on said receptacle, the cross portions of said hinge members being disposed across the cover members, and knuckle members engaging said cross portions of said hinge members for pivotally connecting the cover members thereto, the cross portions of said hinge members being in substantially spaced relation to the edges of the cover members which lie parallel thereto, the cover members being supported by the hinge members so that they can be swung on said hinge members to a collapsed position at the sides of the receptacle when opened and supported in telescoping overlapping relation with cover members of other receptacles when a plurality of the receptacles are nested.

7. The combination with a receptacle shaped for nesting with other similar receptacles, and provided with angled corner brackets, cover members, the cover members when closed resting upon the upper edges of the side and end rim pieces, hinge members having angled arms with inturned pintles at their ends pivoted in said corner brackets, and knuckle members pivotally connecting said hinge members to the cover members at points spaced from the edges thereof, said knuckle members constituting positioning means for a superimposed box, the angles of the hinge members projecting above the plane of the top members when the cover is closed and constituting positioning members for a superimposed box, the cover members being supported by the hinge members so that they may be collapsed at the sides of the receptacle when opened and supported in telescoping overlapping relation with cover members of other receptacles when a plurality of the receptacles are nested.

8. The combination with a receptacle shaped for nesting with other similar receptacles, and provided with angled corner brackets, cover members, the cover members when closed resting upon the upper edges of the side and end rim pieces, hinge members having arms with inturned pintles at their ends pivoted in said corner brackets, and knuckle members pivotally connecting said hinge members to the cover members at points spaced from the edges thereof, the cover members being supported by the hinge members so that they may be collapsed at the sides of the receptacle when opened and supported in telescoping overlapping relation with cover members of other receptacles when a plurality of the receptacles are nested.

9. The combination with a receptacle, of cover members, hinge arms pivotally mounted on said receptacle in opposed pairs and pivotally connected to the cover members by pivot members, said pivot members having upwardly projecting positioning lugs for a superimposed box, the hinge arms being conformed to project above the plane of the cover members when the covers are closed to constitute positioning members, the hinge members being of such length as to permit the cover members being swung when opened to a position at the sides of the receptacle.

10. The combination with a receptacle, of cover members, and hinge arms pivotally mounted on said receptacle in opposed pairs and pivotally

connected to the cover members, the hinge arms being conformed to project above the plane of the cover members when the covers are closed to constitute positioning members, the hinge arms being of such length as to permit the cover members being swung when opened to a position at the sides of the receptacle.

11. The combination with a receptacle, of cover members, and hinge arms pivotally mounted on said receptacle in opposed pairs and pivotally connected to the cover members by pivot members, said pivot members having upwardly projecting positioning lugs for a superimposed box, the hinge arms being of such length as to permit the cover members being swung when opened to a position at the sides of the receptacle.

12. The combination with a receptacle shaped for nesting with other similar receptacles, of cover members adapted when closed to rest upon the upper edges of the receptacle, and hinge arms pivotally mounted on said receptacle and pivotally connected to said cover members at points substantially spaced from the edges thereof which are in parallel relation to the pivots of the hinge members, the cover members being provided with positioning means for a superimposed box, the cover members being supported by the hinge arms so that they may be swung on said arms to a collapsed position at the sides of the receptacle when opened and supported in telescoping overlapping relation with the cover members of other receptacles of a group.

13. The combination with a receptacle shaped for nesting with other similar receptacles, of cover members adapted when closed to rest upon the upper edges of the receptacle, and hinge arms pivotally mounted on said receptacle and pivotally connected to said cover members at points substantially spaced from the edges thereof which are in parallel relation to the pivots of the hinge members, the cover members being supported by the hinge arms so that they may be swung on said arms to a collapsed position at the sides of

the receptacle when opened and supported in telescoping overlapping relation with the cover members of other receptacles of a group.

14. The combination with a receptacle shaped for nesting with other similar receptacles, of complementary cover members adapted when closed to rest upon the upper edges of the receptacle, and hinge arms pivotally mounted on said receptacle adjacent the corners thereof and pivotally connected to the cover members at points substantially spaced from the edges thereof whereby the cover members may be collapsed when opened at the sides of the receptacle and supported in telescoping overlapping relation to the cover members of other receptacles of a nested group.

15. The combination with a receptacle adapted for nesting with other similar receptacles, of cover members, and hinge arms pivotally mounted on said receptacle in opposed pairs and pivotally connected to the tops of the cover members, the hinge arms being of such length as to permit the cover members being swung when opened to a position at the side of the receptacle.

16. The combination with a receptacle, of complementary cover members, and opposed pairs of hinge arms pivotally mounted on said receptacle and pivotally connected to the cover members at points spaced from the edges thereof so that the cover members may be swung to a vertical position at the sides of the receptacle, the major portion of the cover members being below the top of the receptacle.

17. The combination with a receptacle, of cover members, and hinge arms pivotally mounted on said receptacle and pivotally connected to the cover members at points substantially spaced from the edges thereof which are in parallel relation to the pivots of the hinge arms whereby the cover members may be collapsed when opened at the sides of the receptacle.

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