Aug. 13, 1946. L. H. WILLIAMS 2,405,627

COLLAPSIBLE RECEPTACLE

Filed Nov. 20, 1944

Fig. 1.

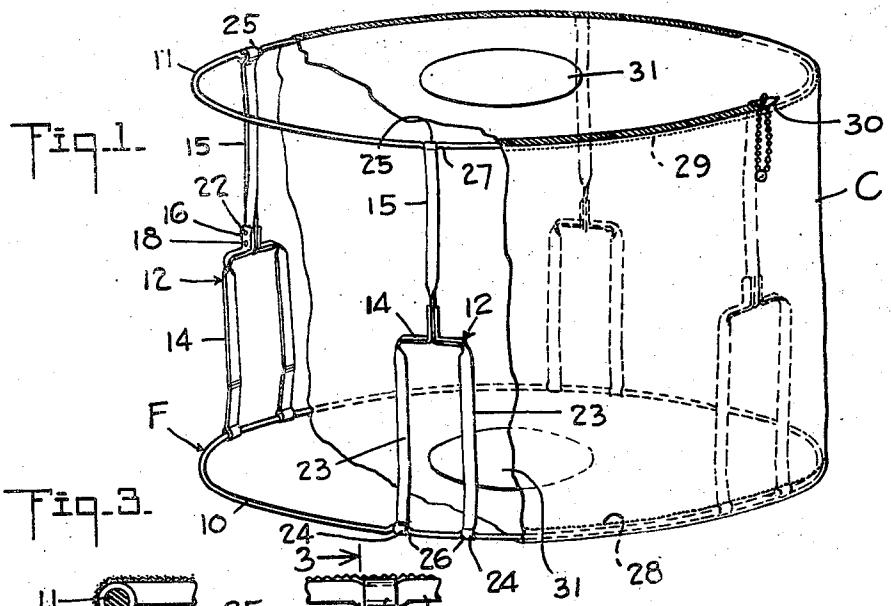


Fig. 3.

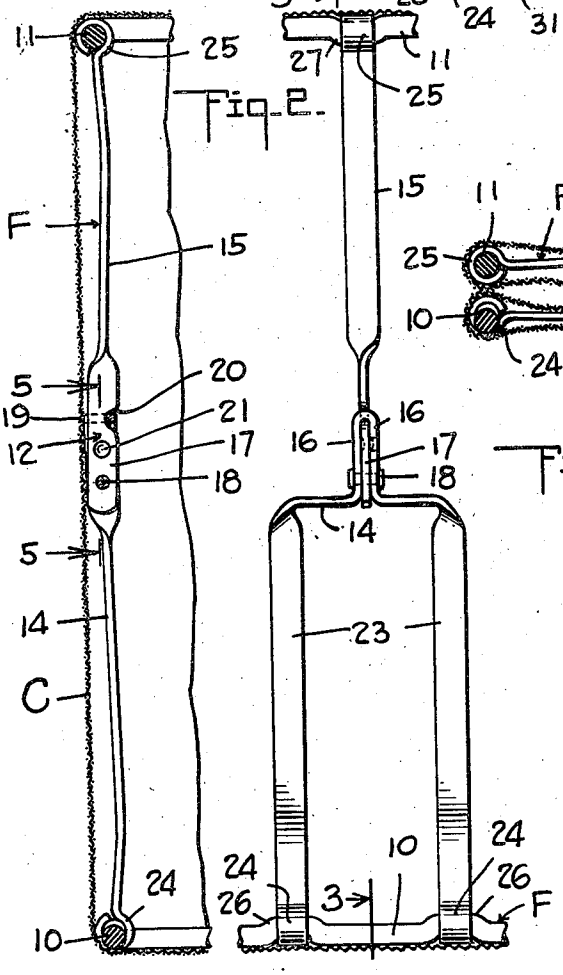


Fig. 2.

Fig. 4.

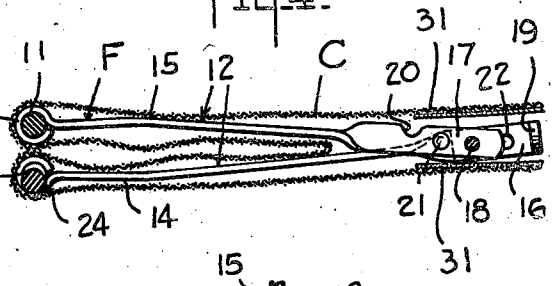
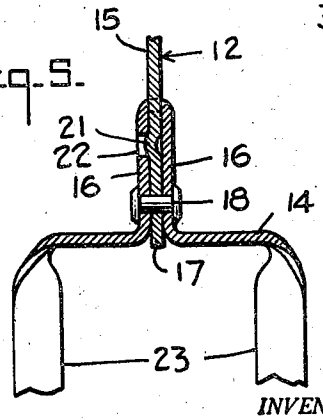


Fig. 5.



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COLLAPSIBLE RECEPTACLE

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4 Claims. (Cl. 150—49)

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This invention relates to receptacles generally, and more particularly to those of the collapsible or foldable type.

An object of the present invention is to provide a receptacle adapted to accommodate a wide variety of articles by being readily constructed in different shapes and dimensions; which includes a foldable frame and collapsible walls to define a strong and durable enclosure to safely protect its contents; and whose frame is composed of spaced boundary members connected at intervals by foldable connector members made of pivotally connected sections of novel construction, to provide when extended, rigid supports insuring rigidity of the frame, with said sections being firmly latched in extended position, yet being easily foldable to bring the boundary frame members in close relationship to form a flat, compact parcel for storage or shipment.

Another object of the invention is to provide a collapsible receptacle of the above described character whose foldable frame can be easily made in various shapes and proportions by varying the configurations and sizes of the boundary members and the lengths of the connecting members, with more or less of the latter employed in accordance with the size and structural strength requirements of the receptacle, all while enabling quantity production of the frame to be effected at small cost to provide a receptacle which can be sold in any price class depending on the quality of the covering and fastenings therefor which are applied to the frame.

With these and other objects in view, the invention resides in the combinations, arrangements and functional relationships of elements as set forth in the following specification and particularly pointed out in the appended claims.

In the accompanying drawing,

Figure 1 is a perspective view of one form of collapsible receptacle embodying this invention, with a portion of the covering broken away to expose the frame;

Figure 2 is an enlarged view in side elevation, showing in its extended position, a typical foldable connector member embodied in the foldable frame of the receptacle;

Figure 3 is a sectional view taken on the line 3—3 of Figure 2;

Figure 4 is a view similar to Figure 3 and showing the connector member in folded position; and

Figure 5 is a fragmentary detail sectional view taken on the line 5—5 of Figure 3.

Referring specifically to the drawing, the invention in its illustrated embodiment comprises

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a frame F and a flexible covering C therefor. The frame F is composed of two identical boundary members 10 and 11 of annular or other desired configuration, these members being continuous and preferably constructed of wire of such gage as to provide the necessary rigidity. At equally spaced intervals, the boundary members 10 and 11 are connected by connector members 12, all of identical construction so that a detailed description of one will suffice for all.

Each connector member 12 is preferably of flat strip metal stock to provide two sections 14 and 15. The section 14 is bent upon itself to provide closely spaced bearing plates 16 between which is received one end 17 of the other section 15. A pin 18 passes through registering openings in the plates 16 and said one end 17 of the sections to pivotally connect them for adjustment to occupy the extended position shown in Figures 1, 2, 3 and 5, or the folded position shown in Figure 4.

In order for the bearing plates 16 of the section 14 to laterally support the section 15 at the pivotal connection between the sections, same are provided with notches 19 and 20 respectively, receiving portions of the other section so that the pivoted end 17 of the section 15 is fully received between the bearing plates 16 in the extended position of the sections. The sections are releasably retained or latched in extended position by means of a teat 21 on the pivoted end 17 of the section 15 which snaps into a recess or opening 22 in one of the bearing plates 16 by slightly springing the plates.

From the bearing plates 16 the section 14 is right angularly bent in opposite directions and then twisted in parallelism to provide relatively widely spaced portions 23, the free ends of which are formed to provide sleeves 24 receiving the boundary frame member 10 to pivotally connect the section 14 thereto, whereas the section 15 is twisted and provided at its free end with a sleeve 25 receiving the boundary member 11 to pivotally connect the section 15 thereto. It will be noted that the points of pivotal connection of the sections 14 and 15 to the respective boundary members 10 and 11 are constructed to laterally offset the latter from the plane thereof as indicated at 26 and 27, towards the sides of the boundary members which confront each other when such members are supported in receptacle-forming position, all to the end of bringing the outer portions of the sleeves 24 and 25 flush with the outer sides of the boundary members to provide a smooth surface for the covering C, as well as

prevent displacement of the sections along the lengths of the respective boundary members.

The covering C, which may be of cloth, plastic, or other suitable material, can be sewed or otherwise secured to the boundary members 10 and 11 as indicated at 28 and 29, with that wall of the covering spanning the member 11 being openable by the provision of a separable fastening means such as a slide fastener 30, for example, to thus provide access to the interior of the receptacle. The central portion of such wall and of the opposite wall can be provided with reinforcing shields 31 of suitable material to protect the covering against wear by the connector members when the receptacle is collapsed.

In the use of the receptacle, the frame F is maintained extended by the latching teats 21, aided by the toggle effect of the relationship of the axes of the sleeves 24 and 25 to the axes of the pins 18 which are slightly to the outer sides of the sleeve axes, and thus require slight stretching of that portion of the covering C between the boundary members by inwardly directed pressure against the sections in order to "break" the toggle and move the sections to fully folded position shown in Figure 4.

In their extended position, the connector members 12 rigidly support the boundary members, as the relatively widely spaced portions 23 of the sections 14, and the flat cross sectional shapes of the sections 14 and 15 combine to strongly brace the connector members in a direction circumferentially of the boundary members. Furthermore, the bearing plates 16 between the sections 14 and 15 provide a rigid pivotal connection reinforcing the sections laterally, to the end of providing an extremely rigid frame when extended. In the fully collapsed position of the frame, its boundary members are practically contiguous so as to provide a compact, flat parcel.

I claim:

1. A collapsible receptacle comprising: a foldable frame including two continuous boundary members and connecting members at intervals between the boundary members; each of said connecting members being composed of two sections of flat strip metal, with one section bent upon itself medially of its ends to provide closely spaced bearing plates between which the inner end of the other section is received; a pin passing through said bearing plates and inner end of said other section to pivotally connect the sections; the outer end of said other section being curled to define a sleeve receiving one of said boundary members to pivotally connect said other section thereto; said one of the sections projecting laterally in opposed directions from said bearing plates, and then in parallelism to provide two relatively widely spaced bracing portions whose ends are curled to receive the other boundary member so as to pivotally connect said portions thereto; means for releasably retaining the sections in extended position; and a flexible covering for the frame.

2. A collapsible receptacle comprising: a foldable frame including two continuous boundary members and connector members at intervals between the boundary members; each of said connector members being composed of two sections of flat strip metal, with one section bent upon itself medially of its ends to provide closely spaced bearing plates; the inner ends of said sections being notched to interfit sufficiently for the inner end of the other section to be received between said bearing plates; a pin passing through said bearing plates and inner end of said other section to pivotally connect the sections; the outer end of said other section being curled to define a sleeve receiving one of said boundary members to pivotally connect said other section thereto; said one of the sections projecting laterally in opposed directions from said bearing plates, and then in parallelism to provide two relatively widely spaced bracing portions whose outer ends are curled to receive the other boundary member so as to pivotally connect said portions thereto; the inner end of said other section and one of said bearing plates having a co-acting latching teat and recess in which said teat is adapted to be received, to releasably retain the sections in extended position; and a flexible covering for the frame.

3. In a collapsible receptacle, a foldable frame including two continuous boundary members and connecting members at intervals between the boundary members; each of said connecting members being composed of two sections of flat strip metal, with one section bent upon itself medially between its ends to provide closely spaced bearing plates between which the inner end of the other section is received; a pin passing through said bearing plates and inner end of said other section to pivotally connect the sections; the outer end of said other section being curled to define a sleeve receiving one of said boundary members to pivotally connect said other section thereto; said one of the sections projecting laterally from said bearing plates in two relatively widely spaced bracing portions whose ends are curled to receive the other boundary member so as to pivotally connect said portions thereto; and means for releasably retaining the sections in extended position.

4. In a collapsible receptacle, a foldable frame including two continuous boundary members and connecting members at intervals between the boundary members; each of said connecting members being composed of two sections of flat strip metal, with one section bent upon itself medially of its ends to provide closely spaced bearing plates; the inner ends of said sections being notched to interfit sufficiently for the inner end of the other section to be received between said bearing plates; a pin passing through said bearing plates and inner end of said other section to pivotally connect the sections; the outer end of said other section being curled to define a sleeve receiving one of said boundary members to pivotally connect said other section thereto; said one of the sections projecting laterally from said bearing plates in two relatively widely spaced bracing portions whose outer ends are curled to receive the other boundary member so as to pivotally connect said portions thereto; the inner end of said other section and one of said bearing plates having a co-acting latching teat and recess in which said teat is received to releasably retain the sections in extended position.

LOUISE H. WILLIAMS.