Feb. 8, 1949. V. P. SCHAUS 2,461,482

COLLAPSIBLE WHEELED CONTAINER

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Fig. 1

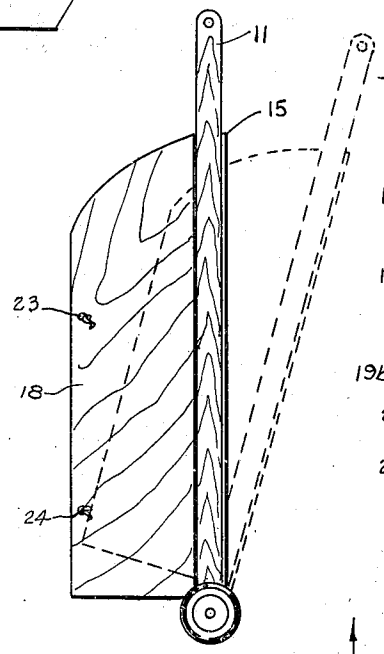


Fig. 2

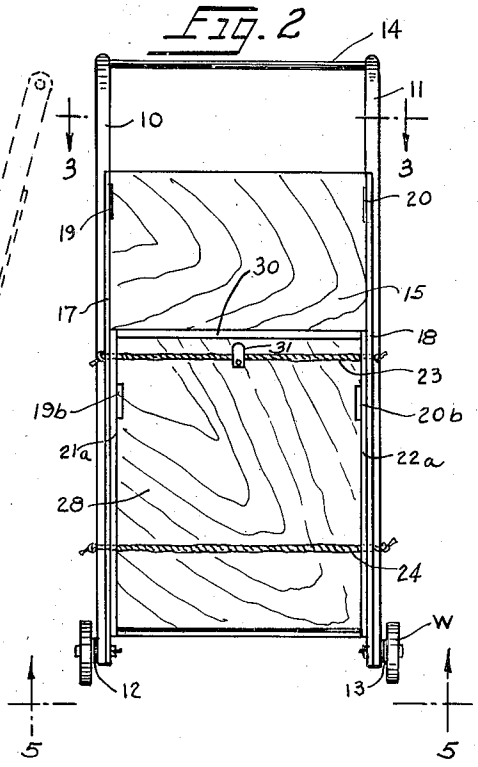
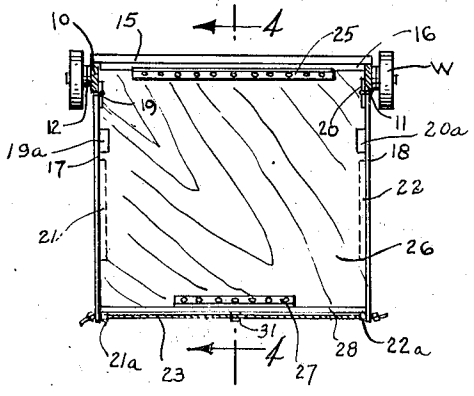


Fig. 3



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Fig. 4

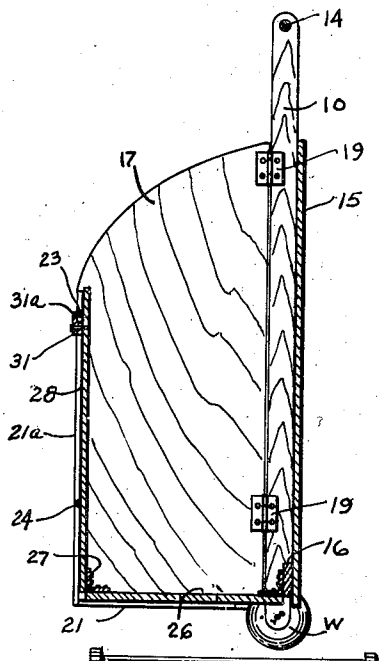


Fig. 5

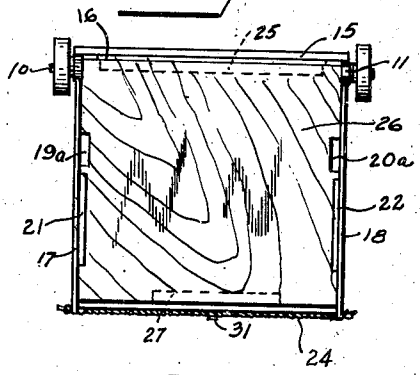


Fig. 6

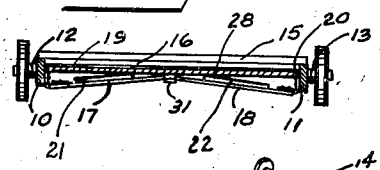


Fig. 7

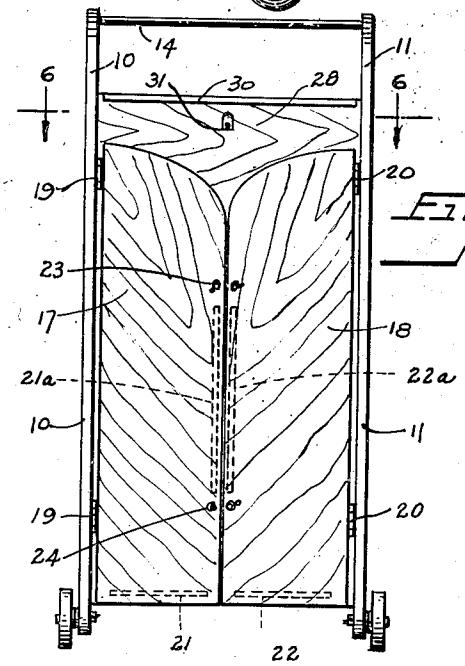
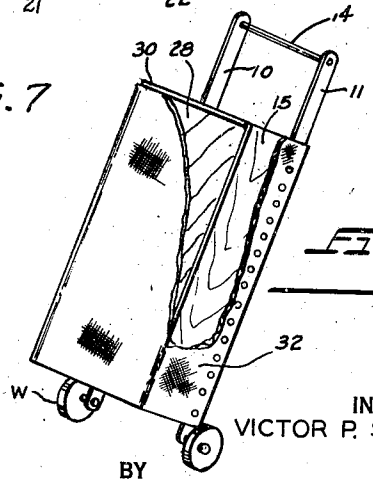


Fig. 8



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COLLAPSIBLE WHEELED CONTAINER

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3 Claims. (Cl. 280—36)

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This invention relates to a folding mobile container.

The device disclosed herein is adapted for a number of varied uses, one of which, for example, is for collecting and carrying groceries and the like in, and to and from, the self-service stores and super-markets where the purchaser collects the various products he desires and brings them to a central point where they are checked and paid for.

One of the objects of this invention is to provide a simple, practical and effective container of the kind described.

Another object of the invention is to provide an article of the above mentioned kind which is collapsible and may be folded and stored away in a minimum of space, and may be readily unfolded for use.

Another object of the invention is to provide a device of the above-mentioned kind which will be light in weight and may be pushed by the user, around a store floor for example, or on the sidewalk.

Another object of the invention is to provide a carrier which although foldable will be dependable and securely held in open position.

Other objects will be in part obvious or in part pointed out hereinafter.

The invention accordingly consists in the features of construction, combinations of elements, arrangements of parts, and in the several steps and relation and order of each of said steps to one or more of the others thereof, all as will be pointed out in the following description, and the scope of the application of which will be indicated in the following claims.

The invention will best be understood if the following description is read in connection with the drawings, in which,

Figure 1 is a side elevational view of an embodiment of my invention;

Figure 2 is a front elevation of the embodiment of the invention shown in Figure 1, in unfolded condition ready for use;

Figure 3 is a horizontal section taken on the line 3—3 of Figure 2;

Figure 4 is a vertical section taken on the line 4—4 of Figure 3;

Figure 5 is a bottom view of the embodiment of the invention shown in Figure 2;

Figure 6 is a horizontal section taken on the line 6—6 of Figure 7;

Figure 7 is a front elevation showing the container in folded position; and

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Figure 8 is a view in perspective, partly broken away, of another embodiment of the invention.

Like numerals refer to like parts throughout the specification and drawings.

The embodiment of the invention disclosed herein comprises the frame or support members 10 and 11, having at their lower ends respectively wheels w which are rotatably mounted on axles 12 and 13 supported by said members 10 and 11 respectively adjacent their lower extremities. The members 10 and 11 are interconnected at their tops by a cross bar 14 which serves as a convenient handle for the complete structure. Between members 10 and 11 a rear panel 15 is supported, and on the inside of said panel adjacent its lower end a cross strip 16 may be provided to support hinge means to be described.

Hingedly related to the members 10 and 11 respectively (Figures 1 to 7 inclusive) are the side panels 17 and 18. Side panel 17 is secured to support 10 by hinge means 19 positioned so that when in unfolded position panel 17 can project forwardly from member 10, and substantially within the plane of member 10, and when in folded position side panel 17 overlies the back panel 15, in a plane substantially parallel to the plane of back panel 15 but spaced somewhat forwardly therefrom, said space being occupied, when the assembly is collapsed, by combined bottom and front panel means to be described. Similarly side panel 18 is connected to support member 11 by hinge means 20 so that, when in unfolded position side panel 18 can extend forwardly from member 11, and substantially within the plane of member 11, and when in folded position side panel 18 overlies the back panel 15, in a plane substantially parallel with the plane of back 15, which plane is also substantially the plane of side panel 17 when it is in folded position. The side panels 17 and 18 may if desired be made to overlap when in folded position but preferably they are proportioned so that their outer edges will abut and engage frictionally thus yieldingly interengaging the side panels when they are in folded position in the same plane, and providing a self contained lock against the undesired unfolding of the side panels when folded into a single plane, or slightly beyond.

Adjacent their bottom and outer edges the side panels 17 and 18 are provided respectively with the marginal flanges 21 and 21a, and 22 and 22a, which serve as stop means for positioning the front panel and bottom panel to be described, and cooperating stop means are provided for the side panels 17 and 18, to limit the extent to which they

unfold so that flanges 21 and 21a, and 22 and 22a will be in position to be engaged by the bottom and front panels. As shown in Figures 1 to 7 inclusive the free margins of side panels 17 and 18 are interconnected by flexible cross members or ropes 23 and 24 respectively, adapted to limit the unfolding of said side panels preferably so that they will be substantially parallel when fully opened.

Hingedly related to back panel 15, as by hinge 25, one leaf of which may conveniently be mounted on the cross strip 16 on the inside of back panel 15 adjacent its lower margin, is a bottom panel 26 which along the inner margin of its upper face is connected to hinge means 25, and which along its opposite margin is connected, by hinge 27, to a front panel member 28 so disposed that bottom panel 26 and front panel 28 are movable from a position in which they lie in the same plane and are substantially continuous to a position in which they are angularly related. Panels 26 and 28 may thus be moved from an end to end position in which they are folded into a unitary plane overlying the back panel 15 and substantially parallel therewith, to an open or unfolded position in which bottom panel 26 is angularly related to back panel 15 at an angle on the order of 90°, and front panel 28 is angularly related to bottom panel 26 by an angle on the order of 90°, members 28 and 15 then extending in substantially parallel planes spaced apart by panel 26.

It will be noted that, in the embodiment of the invention shown in Figures 1 to 7 inclusive, when the combined bottom and front panels are moved from their elongated folded position, substantially parallel to back panel 15, to their unfolded position, they will force apart or unfold the side panels 17 and 18 respectively, and bottom panel 26 will engage and rest upon the marginal flanges 21 and 22 projecting inwardly along the bottom margins of said side panels 17 and 18 respectively as described above, and at the same time front panel 28 will move against and be retained by the vertically extending marginal flanges 21a and 22a of the side panels 17 and 18 respectively. Bottom panel 26 is cut out along its lateral margins as illustrated at 19a and 20a respectively in Figure 3 to provide clearance for lower hinges 19 and 20 respectively, and similarly front panel 28 is cut out along its lateral margins as illustrated at 19b and 20b respectively in Figure 2, to provide clearance for upper hinges 19 and 20 respectively.

For convenience in raising and lowering the front panel 28 and its hingedly related bottom panel 26, to collapse or unfold the closure assembly, a cross member or flange 30 may be provided on the front surface of front panel 28 adjacent its top margin, and beneath cross member 30 a catch 31 may be provided to engage one of the flexible cross members or cords 23 and 24 and thus serve to positively retain the front panel in its unfolded position, preventing accidental folding of the assembly. As better illustrated in Figure 4 the catch 31 may comprise simply a block secured on the front panel 28 and having an upwardly extending portion or flange 31a spaced outwardly from the front surface of front panel 28 so that the cross cord 23 may be hooked over the flange 31a.

Of course all the panels do not have to be made of the same material and in Figure 8 I have shown a foldable container having side panels of flexible material preferably provided by a continuous piece of flexible material extending across the front of the container. The flexible strip 32 is secured at its ends respectively to the outer faces of support members 12 and 13, and it is made full enough to permit bottom member 26 and front member 28 to be completely unfolded. Thus the unfolding of members 26 and 28, from a unitary plane substantially parallel to back 15, serves to open, and give shape to, the flexible material 32 which, together with rigid back 15, rigid bottom 26 and rigid front 28, forms a closure having flexible side panels.

It will thus be seen that there has been provided by this invention an article in which the various objects hereinabove set forth together with many thoroughly practical advantages are successfully achieved. As various possible embodiments might be made of the mechanical features of the above invention and as the art herein described might be varied in various parts, all without departing from the scope of the invention, it is to be understood that all matter hereinbefore set forth or shown in the accompanying drawing is to be interpreted as illustrative and not in a limiting sense.

What I claim is:

1. A device of the kind described comprising a pair of support members interconnected at the top by a bar adapted to serve as a handle each support member carrying an axle, and wheels supported on said axles respectively, a back panel for a closure mounted between said support members, a cross piece extending across the front of said panel in a plane parallel and adjacent to said back panel, and a two-part panel member hingedly supported at its lower end on said cross piece, the two parts of said member being hingedly connected and consisting of a relatively short bottom portion adjacent said back panel and a longer front portion hingedly related to said shorter portion along its edge remote from its connection to said back panel, a pair of side panel members hingedly secured to said support members respectively said members being of a width substantially equal to the length of the shorter portion of said two-part member, said two-part portion being adapted when in folded, inoperative position to lie in a unitary plane parallel and adjacent to said back panel and when unfolded to coact with said back and side panels to form a closure, said side panels being movable from a folded position in which they overlie said folded two-part member to a position in which they form the sides of said closure, and means carried by said side members for engaging the said portions of said two-part member respectively to control the position thereof when the device is unfolded, thus forming a closure the side members of which are automatically moved to open operative position by the unfolding of said two-part portion.

2. The device claimed in claim 1 in which the said side members are interconnected by a flexible connecter extending over the inner surface of said side member and the portion of said two-part member which in the unfolded position of the device is the front panel has on its outer surface a catch adapted to receive said flexible connecter intermediate its ends thereby limiting the unfolding movement of said side members.

3. In a carrier of the class described the combination of a closure and support means therefor including, a high back panel, an axle supported below said back panel, wheel means carried by said axle, and handle means, said closure

comprising, a bottom panel member hingedly related along its rear margin to said back panel member and a front panel hingedly related to said bottom panel along the latter's front margin, said bottom and front panels being movable together from an unfolded position in which they are angularly related into a folded position in which said bottom and front panels are in abutting relation overlying and substantially parallel to said back panel, and side panels hingedly related to said back and adapted when the device is folded to lie in a common plane parallel to said back with their adjacent edges in abutting relation thus providing an interlock, and when the device is unfolded to extend from said back panel to said front panel thus completing, and forming the side walls of, a closure open at the top when unfolded and which may be folded without affecting the mobile character of the device.

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