June 30, 1953 M. G. BURROWS 2,643,788

COLLAPSIBLE CONTAINER

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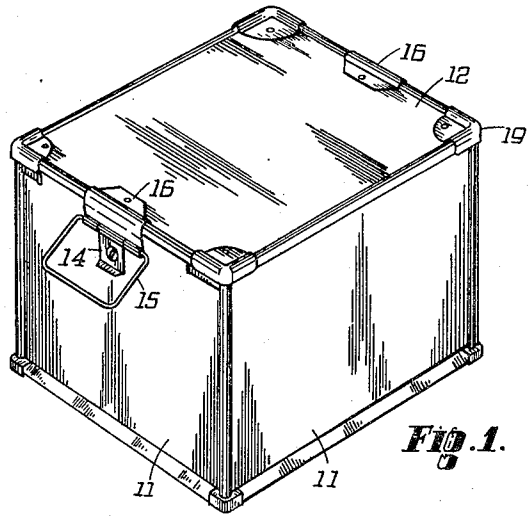


Fig. 1.

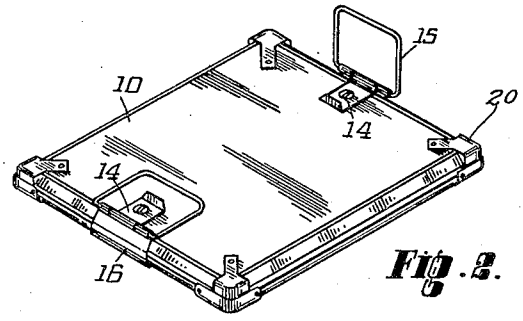


Fig. 2.

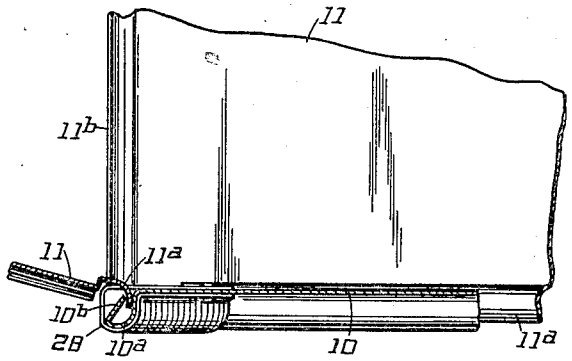


Fig. 3.

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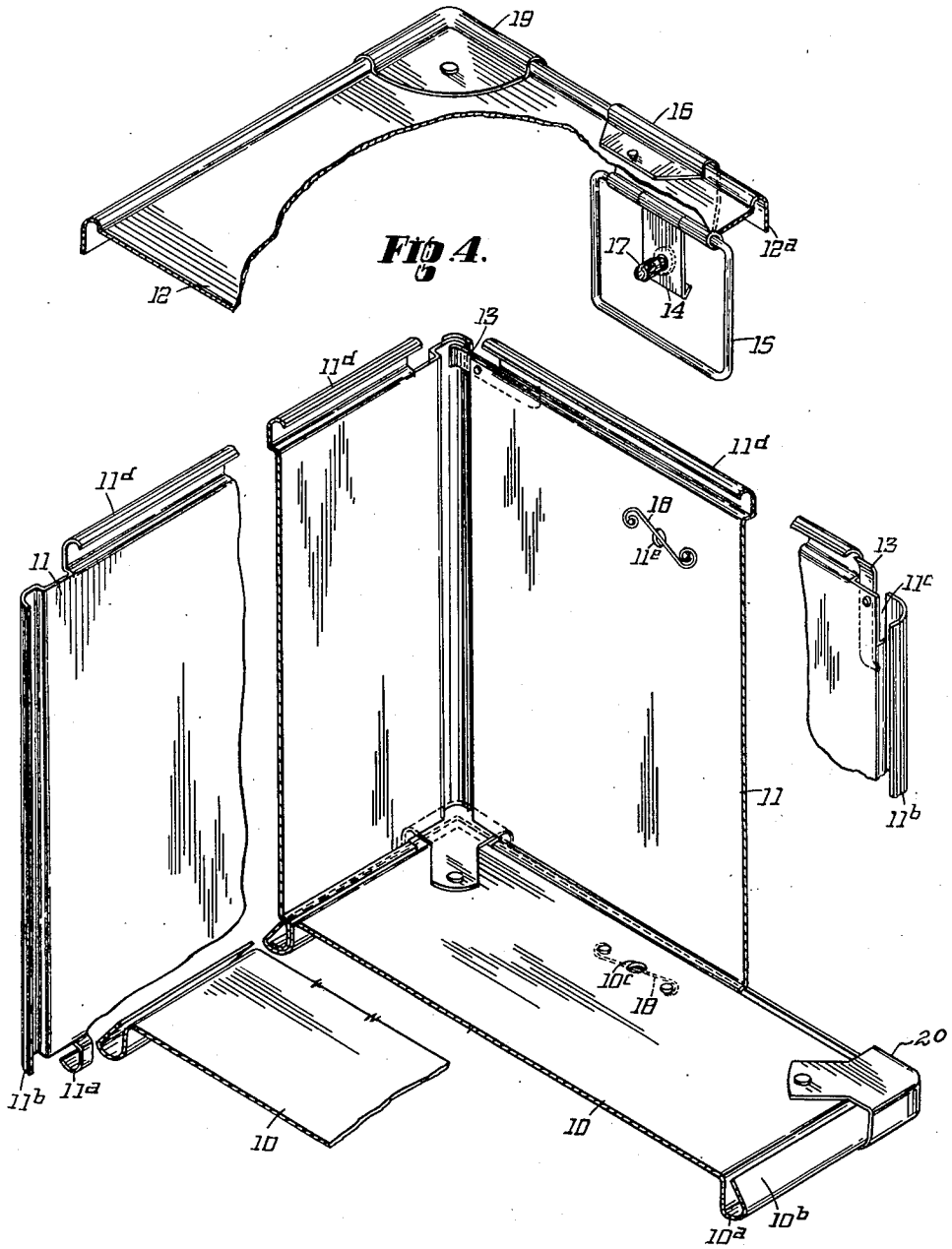


Fig 4.

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Patented June 30, 1953

2,643,788

UNITED STATES PATENT OFFICE

2,643,788

COLLAPSIBLE CONTAINER

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Application March 16, 1951, Serial No. 215,894
In Great Britain November 2, 1949

1 Claim. (Cl. 220—4)

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The present invention relates to collapsible containers.

According to the present invention, a collapsible container comprises, in combination, a base element resting upon channel members dependent from and disposed below the edges of said base element and provided with flanges forming the outer sides of said channel members, side walls having outwardly concave dependent hooks at the lower edges and open outwardly convex curved flanges at the upper and side edges thereof, said hooks being insertable in said channel members so that, in the upright position of the side walls, the ends of said hooks abut said flanges to prevent the side walls from falling past the said upright position in an inward direction, and lugs pivoted to each of one pair of opposite side walls to maintain said side walls upright in the assembled position.

The channel members at the edges of the raised base element, are preferably of sector-like cross section having a slit aperture at the truncated apex of the said sector.

The hooks at the lower edge of each side wall are outwardly concave and are of a length equal to or substantially equal to the length of the said lower edge.

The flanges on the edges of the side walls are curved flanges of generally outwardly convex curvature whereby in the assembled position of the container the flanges of adjacent side edges overlap one another.

In such a construction the means interlocking adjacent side walls may suitably comprise lugs pivoted to one of a pair of adjacent side walls and each displaceable through a slot in said one side wall to firmly clamp the side edge of the other side wall against the side edge of the said one side wall.

The container may include a lid having a dependent flange of inverted J section which, in the assembled position of the container, interconnects adjacent side walls and seats snugly thereon.

A flap may be pivotally connected to the lid and carry a part of a locking device which cooperates with a complementary part of the locking device on a side wall when the container is in the assembled position to lock the lid, and cooperates with an alternative complementary part of the locking device on the base element when the container is in the collapsed and packed position to retain the side walls between the lid and base element. The said part of the locking device may comprise a captive bolt the shank

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of which is spirally slotted and the said complementary part of the locking device may comprise a wire engageable by said slotted shank when the bolt is rotated. The flap may be mounted on a bar carried by the lid and shaped as a handle for the container.

The base element is preferably provided with corner pieces serving as reinforcement members and feet upon which the base element may rest.

The present invention will be more particularly described with reference to the accompanying drawings in which:

Fig. 1 is a perspective view of a preferred form of collapsible container, according to the present invention, in the assembled position,

Fig. 2 is a perspective view of the container in the collapsed and packed position,

Fig. 3 is a sectional detail showing part of the base element and two adjacent side walls, one only of the side walls being in the assembled position, and

Fig. 4 is an exploded fragmentary perspective view of the container in the assembled position.

In the drawings, a base element 10, four side walls 11 and a lid 12 are formed of sheet metal. Channel members 10*a* at the edges of the base element constitute a dependent peripheral gutter or moat around the base element which is adapted to receive hooks 11*a* formed by curving the lower edges of the side walls 11. The said gutter is of generally sector-like cross section, the apex of the section being truncated to provide a slip aperture. The portions 10*b* of the gutter act as retaining members for the hooks 11*a* and abut the ends of the hooks to prevent the side walls falling past the upright position in one direction only whereby during assembly of the container pressure in one direction only on the side walls is required to maintain the side walls upright.

The side edges of the side walls 11 comprise curved flanges 11*b* of limited curvature up to 90° whereby in the assembled position of the container the side edges of adjacent side walls overlap one another to provide the container with corners of double thickness. The side edges of two opposite walls conveniently overlap the side edges of the other two opposite walls whereby the said other two opposite walls are prevented from falling outwardly by the first mentioned two opposite walls.

A pair of opposite side walls 11 are each provided with two lugs 13 forming means to retain the side walls upright when the container is in the assembled position. Each lug is pivoted to

one of a pair of adjacent side walls and displaceable through a slot 11*c* in a flange 11*b* to clamp firmly the side edge of the adjacent side wall against the side edge of the said one side wall.

The lid 12 is provided with dependent flanges 12*a* of inverted J section which, in the assembled position of the container, fit snugly over complementary outwardly convex curved flanges 11*d* of inverted J section at the upper edges of the side walls.

A pair of flaps 14 are each mounted on a bar 15 carried by a plate 16 fitted to the lid. The container is provided with a locking device to lock the lid to the side walls when the container is in the assembled position and to lock the side walls between the lid and base element when the container is in the collapsed and packed position. Any suitable locking device may be used. In the container illustrated in the drawings, each flap carries a captive bolt 17 forming part of a locking device. The shank of the bolt 17 is spirally slotted. Complementary parts of the locking devices comprise wires 18 mounted on the inner faces of the side walls and outer face of the base element and extending across apertures 11*e*, 10*c* in the side walls and base element whereby the wires are engageable in the slotted portion of the shanks of the bolts 17.

The base element 10 is provided with corner pieces 20 serving as reinforcement members and feet upon which the base element may rest.

The lid 12 is provided with corner pieces 19 serving as reinforcement members.

To assemble the container, the side walls are outwardly inclined to the base element and the hooks 11*a* inserted into the gutter 10*a*. The side walls are then raised to a position at right angles to the base element such that the portions 10*b* of the gutter abut the ends of the hooks. The side walls are thus locked to the base element in planes at right angles to the base element. The lugs 13 may then be pivoted to retain the side walls upright.

It will be seen that the dependent flange 12*a* of the lid is so shaped as to seat snugly upon the curved flanges 11*d* at the upper edges of the side walls. Such an arrangement acts to locate firmly the side walls to the lid when the container is in the assembled position, the lid preventing the side walls from being pushed inwardly.

A container according to the invention may be adapted to serve various purposes. It may be adapted to form, for example, a temporary cupboard, a side wall of the container comprising a door for the cupboard. Again, it may be adapted, for example, to serve as a pallet for use with stillage trucks.

I claim:

A collapsible container comprising, in combination, a base element having a contiguous gutter disposed around its periphery of generally sector-like cross section but truncated adjacent its apex to provide a slit aperture, said gutter depending from said base element so as to support said base element in a raised position, side walls having outwardly concave dependent hooks at the lower edges, open outwardly convex curved flanges of inverted J section at the upper edges thereof, open outwardly convex curved flanges of substantially 90° curvature at the side edges thereof, said hooks being insertable within the said slit aperture at the truncated apex of the peripheral gutter so that, in the upright position of the side walls, the ends of said hooks abut the inside of said gutter to prevent the side walls from falling past the said upright position in an inward direction, lugs pivoted to each of one pair of opposing side walls to maintain said side walls upright in the assembled position, and a lid having a downwardly projecting peripheral flange of inverted J section adapted to engage snugly with and seat upon the complementary open outwardly convex curved flange of inverted J section extending along the upper edge of each side wall.

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