Sept. 20, 1971 H. T. LORENTZ, JR 3,605,139

COLLAPSIBLE PLAYPEN

Filed March 5, 1969 2 Sheets-Sheet 1

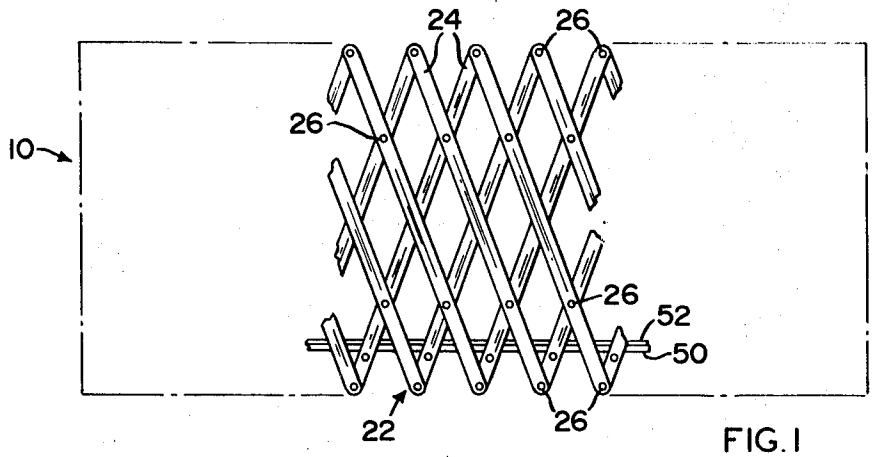


FIG. 1

FIG. 3A

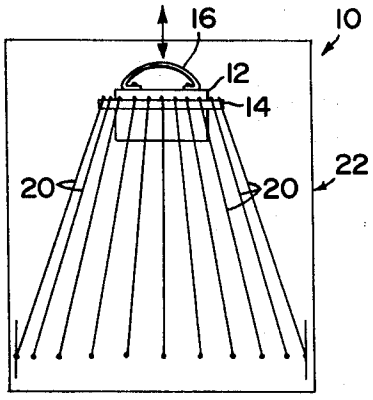


FIG. 2

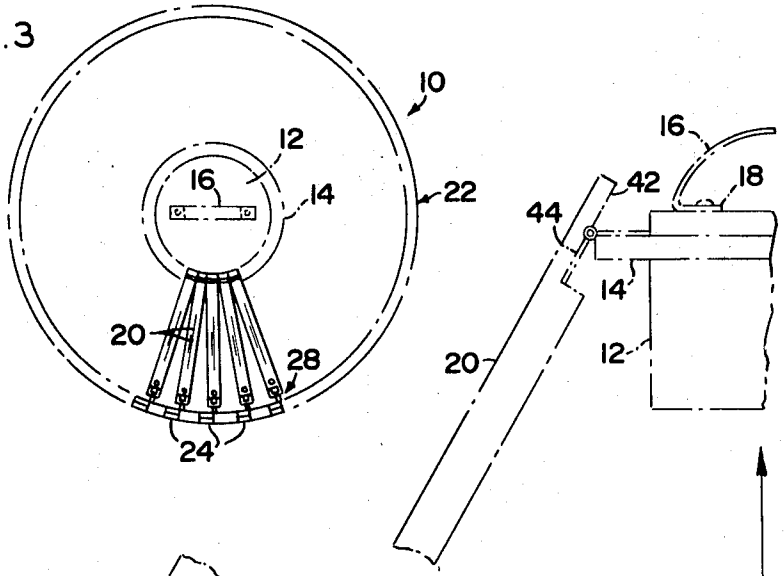
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FIG. 3



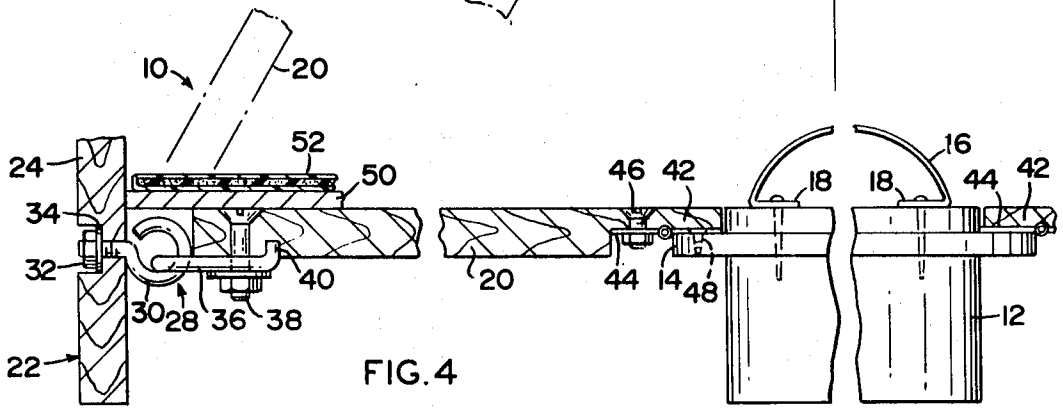


FIG. 4

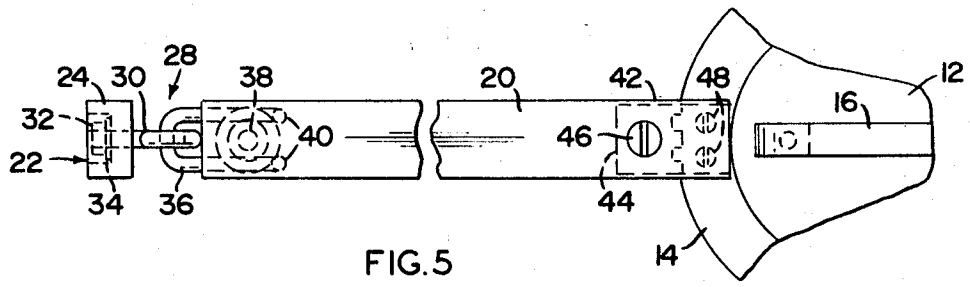


FIG. 5

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United States Patent Office 3,605,139
Patented Sept. 20, 1971

3,605,139

COLLAPSIBLE PLAYPEN

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Filed Mar. 3, 1969, Ser. No. 803,929
Int. Cl. E03d *13/00*
U.S. Cl. 5—99R 2 Claims

ABSTRACT OF THE DISCLOSURE

The container includes center support, an annular lazy tong enclosure unit positioned on a vertical axis and expandable and collapsible circumferentially, a plurality of support slats attached to the center support, and hinge means pivotally securing the outer ends of the slats to a lower portion of the annular enclosure unit.

The present invention relates to collapsible containers, and particularly to a relatively lightweight sturdy container adapted for use as a playpen, as a leaf storage and accumulating unit, or for other uses, as desired.

Heretofore there have been many different types of containers provided, but there always is a need for an improved collapsible container adapted to receive any of a number of relatively lightweight, but bulky loads therein. Certain previous somewhat collapsible structures or units are provided in U.S. Pats. Nos. 2,501,359 and 2,563,446.

In general, the present invention, as one embodiment thereof, relates to a container including a center support, a vertically positioned annular lazy tong enclosure unit, a plurality of substantially radially extending support slats pivotally attached at their inner ends to the center support, and hinge means pivotally securing the outer ends of the slats to the annular unit adjacent the lower end thereof whereby the enclosure unit can be collapsed by lifting the center support upwardly.

In the accompanying drawings:

FIG. 1 is a side elevation of a collapsible container of the invention with a portion of the structure thereof being indicated diagrammatically;

FIG. 2 is a fragmentary top plan view of the collapsible container of FIG. 1 with a portion of the container being broken away and other portions being shown diagrammatically;

FIG. 3 is a plan view of the structure of FIG. 1 as collapsed with repetitive portions of the structure being indicated diagrammatically;

FIG. 3*a* is a fragmentary, diagrammatic side elevation of the collapsible container of FIG. 1 when in its collapsed position, and with a portion of the annular lazy tong unit omitted;

FIG. 4 is a fragmentary, enlarged, partially broken away vertical cross section of one portion of the container of FIG. 1; and

FIG. 5 is a plan view of the fragment of the structure of the invention as shown in FIG. 4.

When referring to corresponding members shown in the drawings and referred to in the specification, corresponding numerals are used to facilitate comparison therebetween.

Reference now is particularly made to the details of the structure shown in the drawings, and a collapsible container of the invention is indicated as a whole by the numeral **10**. This container **10** includes a suitable center support **12** which can be made from any suitable material, such as a tubular article, or a cylindrical block of wood or other means, as desired. The center support **12** preferably has a shoulder or annular flange **14** provided thereon adjacent its upper end, which flange may be

formed as a unit with the center support or be otherwise attached thereto as desired. It should also be noted that some conventional, or suitable handle means **16** is secured to the upper surface of this center support **12** and such handle may comprise, for example, a collapsible plastic or leather strap secured at its inwardly turned ends **18** to the top surface of the center support **12**. The handle **16** can usually collapse down and lie against the top surface of the center support **12** or be pivotally secured to such center support to be swung over to inoperative position superimposed on a portion of the top of the center support **12**.

So as to provide some suitable support means in the collapsible container **10**, normally a plurality of support slats **20** are provided in the collapsible container and extend substantially radially from the center support **12**. The container **10** also includes an annular lazy tong enclosure unit **22** which is positioned on a vertical axis in the container **10**. Such annular unit **22** is formed, as indicated in FIG. 1 of the drawings, from a plurality of bars or elongate members **24** which are pivotally secured to associated elongate members whereby a circumferentially expandable and collapsible annular lazy tong enclosure unit **22** is provided from a plurality of the bars **24** which are pivotally secured to each other in accordance with conventional practice, as by a plurality of rivets, pins or equivalent members indicated at **26**. Thus, the plurality of elongate members **24**, when operatively associated with each other, form the tubular or annular unit **22** which unit can be increased or decreased in diameter by controlled pivotal movement of the relative elongate members **22** in their operative relationships with each other, as indicated in the drawings.

The general assembly of the collapsible container **10** is completed by suitable hinge means **28** which are used to secure the outer ends of the slats **22** operatively to the lower ends of some of the elongate members **24** forming the annular member or unit **22**. Hence, FIG. 4 of the drawings particularly shows that the hinge means **24** may comprise an eye **30** which is bolted or otherwise secured to one of the elongate members **24** adjacent the lower end thereof as by a nut **32** and usually a lock washer or equivalent member **34**. Another portion of the hinge means **28** is shown as including a substantially U-shaped link **36** which is suitably operatively secured to the lower surface of the individual slats **20** as by a suitable bolt **38**, or equivalent means so as to position the link **36** to extend radially beyond the individual slat **20** by which it is positioned. If desired, the U-shaped links **36** may have upwardly extending ends **40** seated in suitable recesses formed in the slats **20** to position such link **36** to extend in a general radial direction in the container **10**.

The radially inner ends of the slats **20** are operatively secured to the center support **12** by conventional means, in this instance including the formation of a rabbetted end **42** on the radially inner end of each of the slats **20** and by securing a suitable strap type hinge or equivalent member **44** to the lower surface of such end portion **42** as by a bolt **46** or similar member. The opposite strap of the hinge **44** is secured by a screw **48** or similar means to a top portion of the flange **14** on the center support **12** whereby the radially inner end of each of the slats **20** is physically supported on the flange **14** but yet is pivotally secured thereto whereby the slat is adapted to pivot downwardly from such center support **12** when the center support is moved vertically upwardly.

It will be realized that when the handle **16** is used to raise the center support **12**, the annular unit **22** will be collapsed in a circumferential direction and will take substantially the shape shown in FIGS. 3 and 3*a* when the various bars or elongate members **24** are brought into

relatively closely spaced relationship with each other by collapsing movement of the lazy tong structure provided in such annular unit. However, such annular unit can be expanded to form the relatively large diameter structure shown in FIGS. 1 and 2.

It will be realized that any desired type of support means can be associated with the collapsible container **10**. Hence, in some instances, the container may be used with the plurality of slats **20** being the sole support means provided, and wherein usually the radially inner ends of such slats are substantially abutted against each other around the periphery of the flange **14**, as indicated in FIG. 3, as well as in FIG. 2. However, if desired, a flexible sheet unit of some type could be operatively attached to the slats **20**, or such cover means, such as a fabric sheet, could be attached to the radially inner ends of the slats **22** and have its radially outer edge suitably secured to individual members **24** in the annular unit **22**. Likewise, if desired, one or more segments of a support sheet **50** formed from hardboard, stiff plastic materials, or other desired substance, could be positioned on these support slats **20** and then just be removed therefrom when one wishes to move the collapsible container **10** to an inoperative position. Naturally, if desired, some type of a cushion means, indicated at **52**, may be secured to or be carried by this floor or cover member **50** to provide a cushioning action thereon.

It should be realized that any conventional support means, such as casters can be secured to the bottom of the center support **12** and extend below the lower edges of the annular unit **22** when it is desired to wheel or push the container **10** around on the ground. However, usually the lower ends of the annular unit **22** would terminate in a horizontal plane with the lower surface of this center support **12** for convenient support of the container **10** on a flat support surface.

For convenience in illustration, repetitive portions of the annular unit **22** have been indicated diagrammatically in the drawings, or have been omitted for purposes of clarity.

Naturally, when forming the annular unit **22**, conventional washers or the like can be associated between the individual bars **24** to facilitate pivotal movement therebetween.

Obviously, the container of the invention can be made of any desired size, but it is thought for most uses it would be desirable to make the annular unit **22** of about 48 inches in maximum diameter when fully expanded, and to make the individual bars or elongate members **24** forming the annular member be about 30 inches long and with the slats being about 16 to 18 inches long and with the center support being about 5 to 16 inches in diameter.

The container can be made from relatively lightweight but sturdy materials and can be painted, varnished or finished in any desired manner, but any materials may be used in making the container. The unit can be easily transported or stored when in its collapsed condition, but yet can be moved out to operative position by expanding the lazy tong annular unit to establish an operative, sizable container. This container is useful as a playpen for

babies and small children, and it can be used for receiving other articles therein or for storing or transporting bulky materials, such as leaves, grass clippings, or any other materials, as desired.

Obviously, roller supports can be attached to the lower ends of the annular unit **22** as well as to the center support **12**. The center support **12** may pivotally engage and/or support the slats **20** in any desired manner.

If desired, the eyes **30**, when used, may replace a rivet or the like used to secure two bars **24** together.

From the foregoing, it is believed that a novel and improved container which can be readily collapsed has been provided and that the objects of the invention have been achieved.

While one complete embodiment of the invention has been disclosed herein, it will be appreciated that modification of this particular embodiment of the invention may be resorted to without departing from the scope of the invention as defined in the appended claims.

What is claimed is:

1. In a collapsible container,

a center support having a flat top surface,

an annular lazy tong unit positioned on a vertical axis and expandable and collapsible in a circumferential direction, said annular unit including a number of elongate members pivotally connected together to form a tubular shape,

a plurality of substantially radially extending support slats pivotally attached at their inner ends to said center support and positioned with their top surfaces in the plane of said center support top surface,

hinge means pivotally securing the outer ends of said slats to some members of said unit adjacent the lower end thereof, and

hinge means provided to secure said slats to said center support, said center support having an annular flange thereon below its top surface, said slats bear on said flange at the inner ends of said slats, and said second-named hinge means engage the bottom surface of said slats whereby only upward movement of said center support is possible.

2. A container as in claim **1** where a handle means is attached to an upper portion of said center support and said container can be expanded and collapsed by moving said center support vertically to change the relationship of said members forming said annular unit.

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U.S. Cl. X.R.

150—49