Nov. 24, 1953 C. C. AVERILL 2,660,328

COLLAPSIBLE STACKING RECEPTACLE

Filed Sept. 29, 1952 2 Sheets-Sheet 1

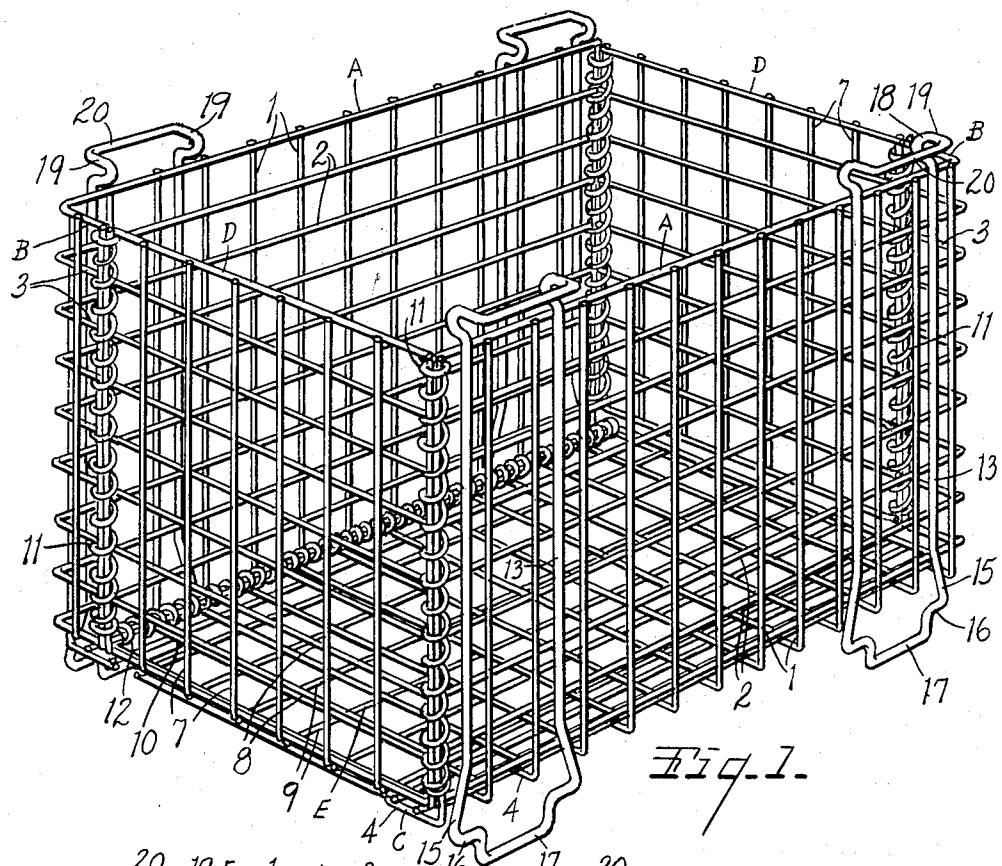


Fig. 1.

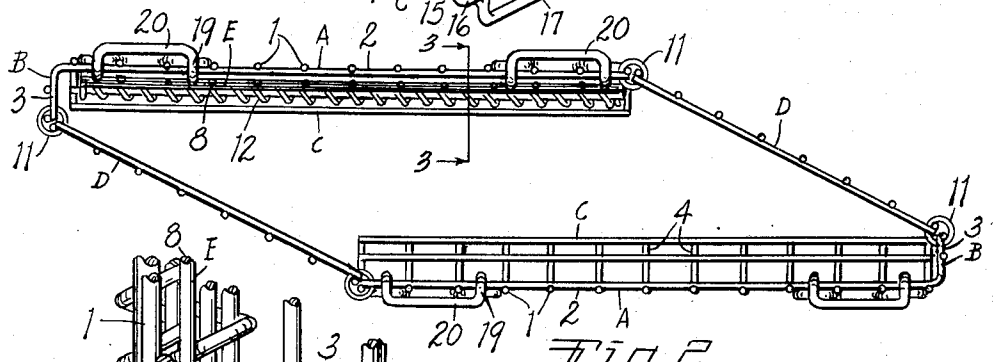


Fig. 2.

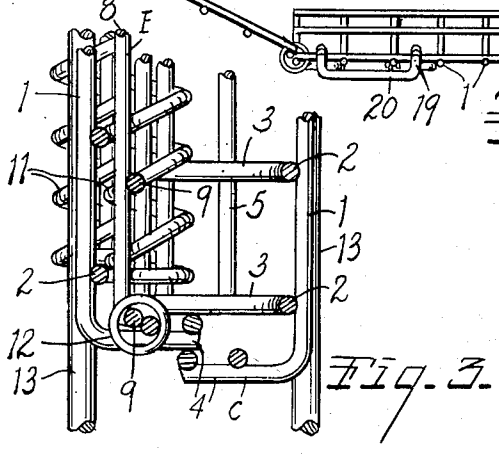


Fig. 3.

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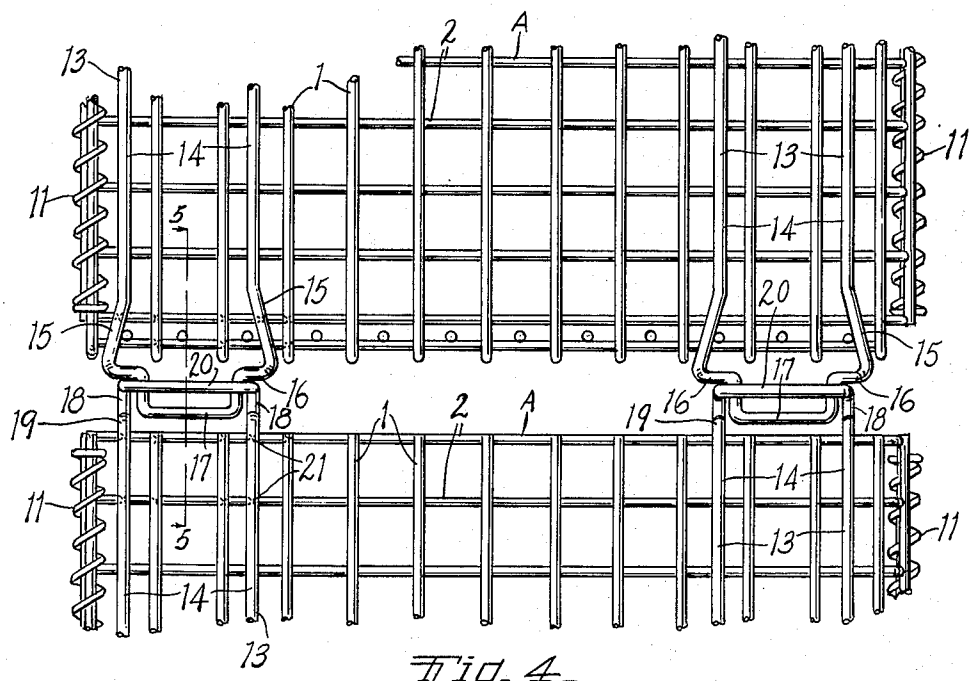


Fig. 4.

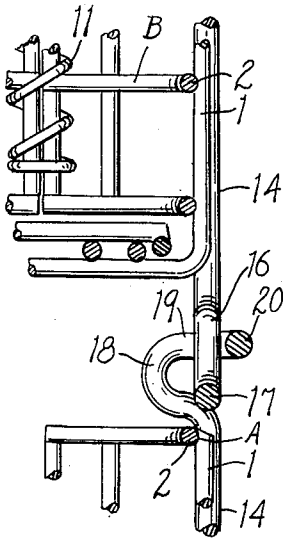


Fig. 5.

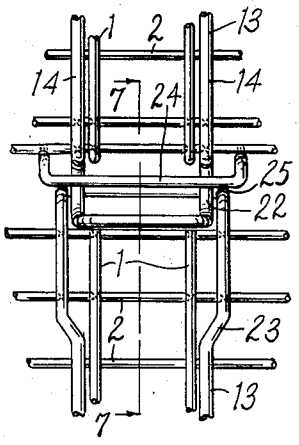


Fig. 6.

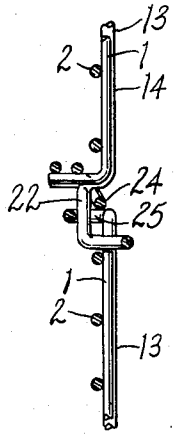


Fig. 7.

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COLLAPSIBLE STACKING RECEPTACLE

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Application September 29, 1952, Serial No. 312,109

6 Claims. (Cl. 220—6)

1

This invention relates to improvements in collapsible stacking receptacles.

The main objects of this invention are:

First, to provide a stacking receptacle formed entirely of wire or light rod stock, one which may be compactly collapsed, and at the same time when erected is strong and rigid and capable of withstanding heavy loads when the receptacles are stacked.

Second, to provide a collapsible stacking receptacle embodying these advantages which may be economically produced and may be handled by lifting trucks.

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.

A preferred embodiment of the invention is illustrated in the accompanying drawing, in which:

Fig. 1 is a top perspective view of a preferred embodiment of my invention in erected form.

Fig. 2 is a plan view of the receptacle partially collapsed.

Fig. 3 is an enlarged fragmentary view in vertical section on a line corresponding to line 3—3 of Fig. 2.

Fig. 4 is a fragmentary side elevational view illustrating a pair of the receptacles in stacked relation.

Fig. 5 is an enlarged fragmentary view in section on a line corresponding to line 5—5 of Fig. 4.

Fig. 6 is a fragmentary side elevational view of a modified form or embodiment of my invention, a pair of receptacles being shown in stacked relation.

Fig. 7 is a fragmentary view in section on a line corresponding to line 7—7 of Fig. 6.

In the embodiment of my invention illustrated the sidewalls designated generally as A—A are formed of a vertical series of spaced parallel slats 1 and a horizontal series of spaced parallel slats 2 disposed in crossed relation and welded together at their crossing points. The horizontal slats have laterally turned end portions 3 at their diagonally opposite ends, there being a plurality of vertical slats 1 secured to these laterally turned ends and coacting therewith to constitute end wall portions B integral with the side walls. The lower ends of the vertical slats of the side walls have inturned extensions 4 connected by a plurality of horizontal slats 5 and constituting bottom supports designated generally by the numerals C—C.

The end walls, designated generally by the numerals D—D are formed of vertical slats 7 and horizontal slats 8 fixedly connected at their crossing points as by welding. The bottom, designated generally by the numeral E is formed of longitudinal slats 9 and transverse slats 10 fixedly connected at their crossing points. The end walls are hingedly or swingably connected at one vertical edge to the adjacent vertical end wall members, and at their other vertical edge to the adjacent edges of the side walls.

The hinges are desirably helically coiled members 11 which are spiralled about adjacent vertical slats as illustrated.

The bottom is hingedly connected to one of the longitudinal slats of one of the bottom support members by means of a helically coiled hinge member 12. This connection permits the bottom being swung to erected supported relation on the bottom support members, or swung to a collapsed position against the inner side of the side wall to which it is hingedly connected as shown in Fig. 2.

This arrangement of walls and bottom is that shown in my companion application, the claims thereto being presented in that application. I have used the term "side and end walls" as a matter of convenience in describing, and it will be understood that the proportions of the walls may be as desired and the receptacles are frequently square.

The stacking members 13 of my present invention are formed of heavy wire or rod stock and comprise spaced parallel side members 14, the upper ends of which extend above the walls, and the lower ends of which extend below the bottom, and constitute legs and are conformed to constitute stacking lugs. The lower ends of the side members 14 are diverged laterally at 15 and merge into the inward offsets 16, which constitutes shoulders for the stacking lug portions 17 which extend downwardly from the shoulders 16. The side members 13 have inward loop-like offsets 18 above the walls constituting rests 19 for the stacking lug shoulders 16. The top crosspiece connects the upper arms of the offsets and in effect coact therewith to provide sockets for the stacking lugs 17. When the erected receptacles are superimposed the loads of the upper receptacle are carried entirely by the uprights which are desirably welded to each of the horizontal slats as indicated at 21 at the left of Fig. 4.

The crosspieces 20 of the uprights also constitute handles for the receptacles. When desired the loaded receptacles may be handled by lift

trucks and lift trucks are desirable for use in stacking. The legs support the bottom so that the forks of the trucks may be inserted below the bottom. It is desirable that the forks should be inserted far enough so that they engage both bottom members C.

In the embodiment of my invention shown in Figs. 6 and 7 the lower ends of the uprights have inward offsets 22, while the upper ends of the upright side members 13 are laterally offset at 23 to space them so that the legs or stacking lug portions 22 may be received between them as is shown in Figs. 6 and 7. The legs or lugs are provided with a U-shaped stop member 24 which rests upon the inturned ends 25 at the upper ends of the uprights, the top crosspieces of the uprights then being on the inner side of the stacking lugs. The stacking uprights are effective in bracing and reinforcing the walls to which they are connected, and they carry the load of superimposed receptacles so that the grid-like walls are not distorted or subjected to loads other than contained within the individual receptacle.

I have not attempted to illustrate or describe other adaptations or embodiments which I contemplate, as I believe this disclosure will enable those skilled in the art to embody or adapt my invention as may be desired.

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

1. In a collapsible stacking receptacle the combination of opposed pairs of walls comprising spaced parallel horizontal and vertical slats fixedly connected at their crossing points, adjacent ends of the walls being hingedly connected, a bottom comprising crossed slats fixedly connected at their crossing points hingedly connected to one wall of an opposed pair to be collapsed upwardly against the inner side thereof when the receptacle is collapsed, the other wall of the pair having a support for the bottom when the receptacle is in erected position, and combined reinforcing uprights and stacking members formed of rod stock and comprising spaced side members and top and bottom crosspieces integral therewith, the side members being fixedly secured to the horizontal slats of the opposed walls with the upper ends of the uprights projecting above the walls and their lower ends projecting below the walls, said side members having laterally downwardly diverging portions adjacent their lower ends merging into inward offsets constituting stacking lug shoulders spaced upwardly relative to the lower ends of the uprights which constitute stacking lugs, the upper ends of the side members having inwardly offset loops positioned above the tops of the walls with the upper crosspieces outwardly spaced relative to the walls to receive the stacking lugs of a superimposed receptacle with the top crosspieces on the outer sides thereof.

2. In a collapsible stacking receptacle the combination of opposed pairs of walls comprising spaced parallel horizontal and vertical slats fixedly connected at their crossing points, adjacent ends of the walls being hingedly connected, a bottom comprising crossed slats fixedly connected at their crossing points hingedly connected to one wall of an opposed pair to be collapsed upwardly against the inner side thereof when the receptacle is collapsed, the other wall of the pair having a support for the bottom when the receptacle is in erected position, and combined reinforcing uprights and stacking members formed of rod stock and comprising spaced side members and top and bottom crosspieces integral therewith, the side members being fixedly secured to the horizontal slats of the opposed walls with the upper ends of the uprights projecting above the walls and their lower ends projecting below the walls and offset to constitute stacking lug shoulders spaced upwardly relative to the lower ends of the uprights, the upper ends of the upright side members being offset above the walls to constitute rests for said shoulders with the upper crosspieces at the outer sides of the stacking lugs of a superimposed receptacle.

3. In a collapsible stacking receptacle the combination of opposed pairs of walls comprising spaced parallel horizontal and vertical slats fixedly connected at their crossing points, adjacent ends of the walls being hingedly connected, a bottom comprising crossed slats fixedly connected at their crossing points hingedly connected to one wall of an opposed pair to be collapsed upwardly against the inner side thereof when the receptacle is collapsed, the other wall of the pair having a support for the bottom when the receptacle is in erected position, and combined reinforcing upright and stacking members formed of rod stock and comprising spaced side members secured to the horizontal slats of the side walls, and integral crosspieces at the upper and lower ends of the uprights, the crosspieces at the lower end of the uprights having downward offsets therein providing shouldered stacking lugs, the upper ends of the uprights having inward offsets therein constituting rests for the shoulders of said stacking lug when the lugs are disposed on the inner side of said top crosspieces.

4. In a collapsible stacking receptacle the combination of walls hingedly connected at their adjacent vertical end edges for collapsing, a bottom hingedly connected to one side wall to swing upwardly to collapsed position at the side thereof, and uprights formed of rod stock and comprising spaced side members, and integral crosspieces at their upper and lower ends, said uprights being fixedly secured to opposed walls with the upper ends of the uprights projecting above the walls and their lower ends projecting below the walls to constitute legs and stacking lugs, said side members having laterally and downwardly diverging side portions adjacent their lower ends merging into inward offsets constituting stacking lug shoulders spaced upwardly relative to the lower ends of the uprights, the upper ends of the uprights having offsets therein constituting rests with which said shoulders coact when the stacking lugs of the superimposed receptacle are disposed on the inner sides of the top crosspieces.

5. In a collapsible stacking receptacle the combination of walls hingedly connected at their adjacent vertical end edges for collapsing, a bottom hingedly connected to one side wall to swing upwardly to collapsed position at the side thereof, and uprights comprising spaced side members, and connecting crosspieces at their upper and lower ends, said uprights being fixedly secured to opposed walls with the upper ends of the uprights projecting above the walls and the lower ends projecting below the walls and offset to constitute shouldered stacking lugs, the upper ends of uprights having offsets therein constituting rests with which the said stacking lug shoulders coact when the stacking lugs of a superimposed receptacle are disposed on the inner sides of the top crosspieces.

6. In a collapsible stacking receptacle the com-

bination of walls hingedly connected at their adjacent vertical end edges for collapsing, a bottom hingedly connected to one side wall to swing upwardly to collapsed position at the side thereof, and uprights comprising spaced side members, and connecting crosspieces at their upper and lower ends, said uprights being fixedly secured to opposed walls with the upper ends of the uprights projecting above the walls and the lower ends projecting below the walls and offset to constitute shouldered stacking lugs, the upper ends of uprights having offsets therein constituting rests with which the said stacking lug shoulders coact when the stacking lugs of a superimposed receptacle are disposed in retaining engagement with the upper ends of the uprights of the lower receptacle.

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No references cited.