

Aug. 19, 1941.

A. T. FAULKNER

2,252,964

GRATE OR RECEPTACLE

Filed Aug. 25, 1939

2 Sheets-Sheet 1

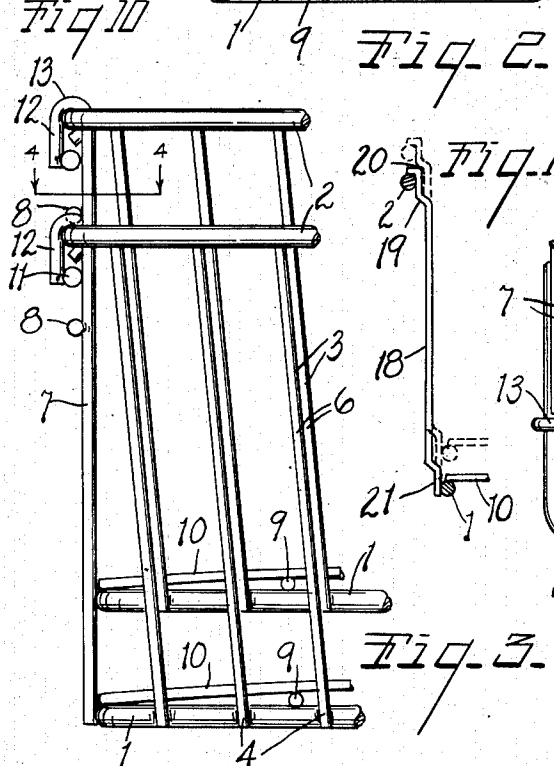
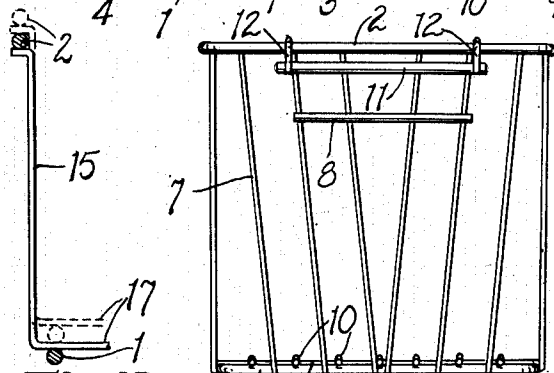
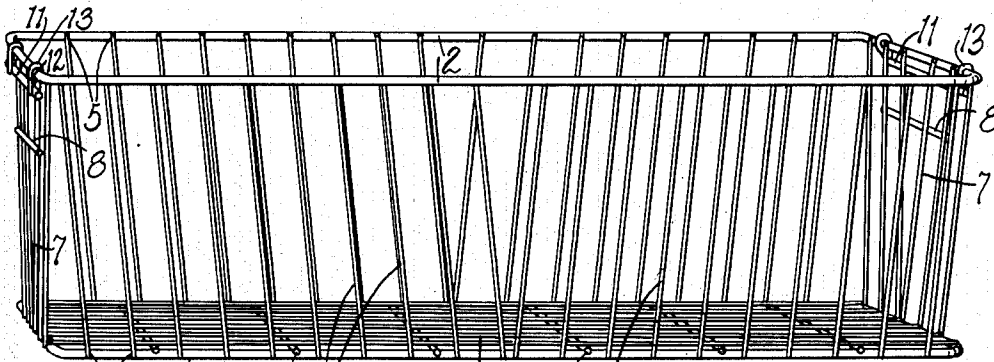


Fig. 1.

Fig. 2.

Fig. 3.

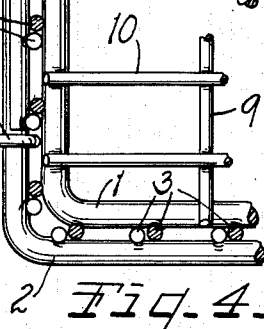
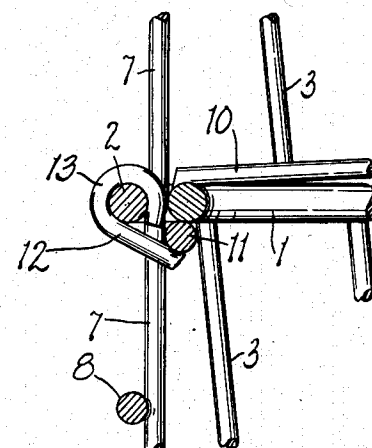


Fig. 4.

Fig. 5.

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CRATE OR RECEPTACLE

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2 Sheets-Sheet 2

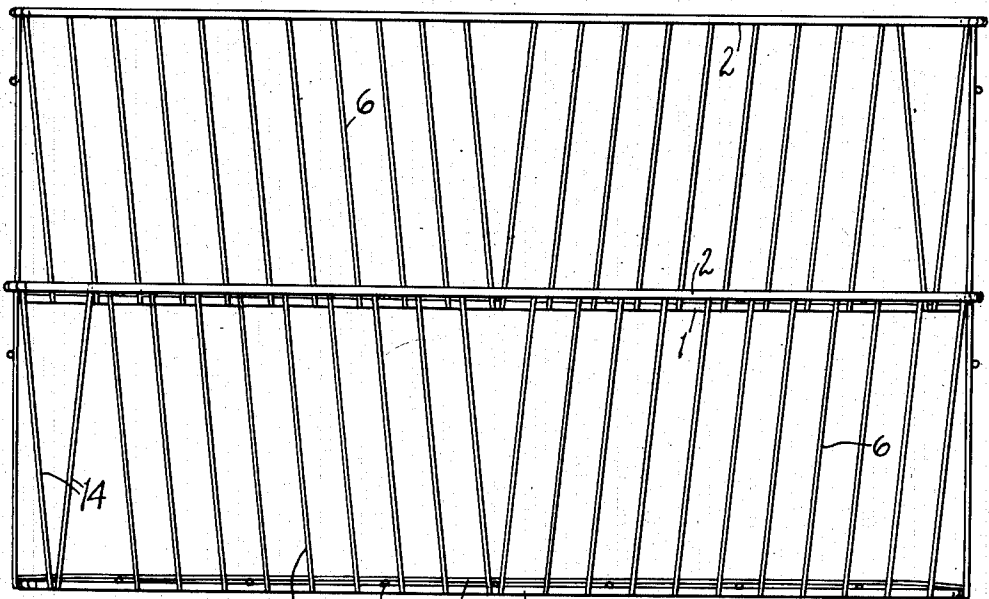


Fig. 6.

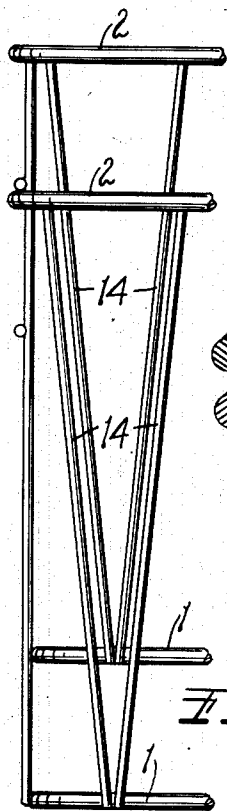


Fig. 7.

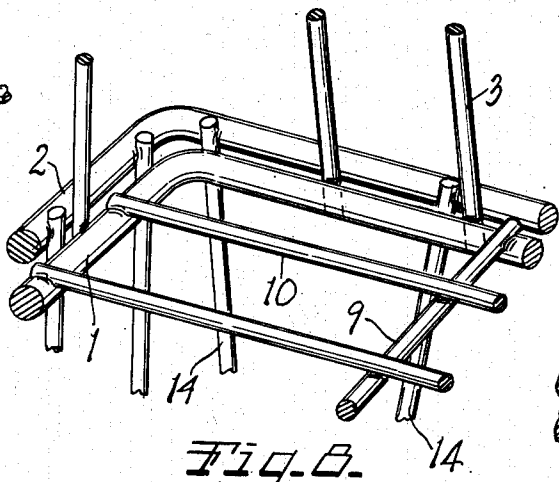


Fig. 8.

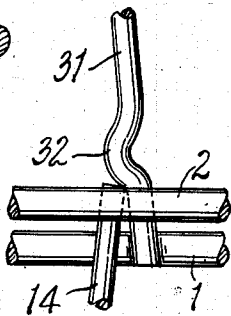


Fig. 9.

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CRATE OR RECEPTACLE

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13 Claims. (Cl. 220—97)

This invention relates to improvements in crates or receptacles.

The main objects of this invention are:

First, to provide a metal crate or receptacle which is non-tapered or has substantially vertical walls and at the same time one in which a plurality of similar crates may be effectively nested.

Second, to provide a structure of this character which may be formed of comparatively light material and at the same time is strong and rigid.

Third, to provide a structure of the type and having the advantages stated which may be nested or stacked as desired.

Fourth, to provide a structure having the advantages above pointed out which may be produced very economically.

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.

Preferred embodiments of the invention are illustrated in the accompanying drawings, in which:

Fig. 1 is a side perspective view of a crate or container embodying the features of my invention with the stacking irons or members swung to inoperative position.

Fig. 2 is an end elevation of the structure shown in Fig. 1.

Fig. 3 is a fragmentary side elevation showing a pair of the crates or receptacles in nested position.

Fig. 4 is a fragmentary view in section on line 4—4 of Fig. 3.

Fig. 5 is a fragmentary view partially in section showing a pair of the crates or receptacles in stacking position.

Fig. 6 is a fragmentary side elevation of a modified form or embodiment of my invention showing a pair of the crates in stacking position.

Fig. 7 is a fragmentary side elevation showing a pair of crates embodying the modification of Fig. 6 in nested position.

Fig. 8 is an enlarged perspective view showing details of the embodiment of the invention of Figs. 6 and 7 in stacking position.

Fig. 9 is a fragmentary side elevation showing modification of the embodiment of my invention shown in Figs. 6 to 8.

Fig. 10 is a fragmentary vertical section of a slightly modified form or embodiment of my invention.

Fig. 11 is a fragmentary vertical section of an-

other modified form or embodiment of my invention.

It has long been the practice to taper crates or receptacles in order to permit nesting thereof for storage or shipment. Such nested receptacles when in use and arranged side by side where stacked in a warehouse for storage or transportation result in a considerable loss of space owing to the spaces between the receptacles resulting from their taper. One of the primary objects of my invention is to provide crates or receptacles which are non-tapered or substantially so or have vertical sides as distinguished from outwardly inclined sides.

Referring to the drawings, the embodiment of my invention illustrated in Figs. 1 to 5 comprises a bottom border frame 1 and top border frame 2 formed of wire or relatively small gauge rod. I use the term wire as a matter of convenience.

The sides of the receptacle are formed of vertical slats 3 also preferably formed of wire and these are arranged with their lower ends 4 arranged on the outer side of the bottom border frame and their upper ends 5 arranged on the inner side of the top frame, the slats being secured by welding. The bottom border frame is of such dimensions relative to the top border frame that the bottom border frame may be passed through the top border frame.

In the preferred construction, the internal dimensions of the top border frame exceed the external dimensions of the bottom border frame by substantially the diameter of the thickness of the side wall slats. In a rectangular receptacle such as illustrated, the side and end wall slats are arranged in oppositely inclined parallel groups, the groups constituting the side walls being designated generally by the numeral 6, 6 while those of the end wall are designated generally by the numeral 7, 7, see Figs. 1 and 2.

With the slats arranged in this relation to the border frames and to each other, the receptacles may be telescoped or nested with corresponding slats lying in side by side relation as shown in Figs. 3 and 4. To prevent wedging, the stop members 8 are secured to the end wall slats adapted to engage the top border frame of the receptacle into which the receptacle carrying the stop is telescoped. The slats themselves would constitute stops as is evident from an inspection of Fig. 3 but they might be forced together to such an extent that the receptacles would not readily separate.

The arrangement of the slats in groups, the

slats of which are oppositely inclined, results in a bracing or trussing action thus providing a very strong receptacle even when formed of comparatively light stock.

In the embodiment illustrated, the bottom comprises the transverse members 9 and the longitudinal members 10 disposed with their ends upon and welded to the upper side of the bottom border member.

To enable stacking of the receptacles, I provide bar-like stacking irons or members 11 which are provided with arms 12 terminating in eyes 13 engaging the end members of the top border frame between adjacent slats and preferably spaced so that the slats serve to prevent longitudinal sliding movement of the stacking members. Thus positioned, the stacking members may be swung outwardly against the outer sides of the end slats or swung inwardly to erected position with the stacking member bars 11 resting against the slats between the arms 12. In this stacking position, the bottom border frame of a superimposed receptacle rests upon the stacking iron. If desired, the stop members 8 may be used as handles or grips although the receptacle may be conveniently grasped by the top frame.

The modification or embodiment of my invention shown in Fig. 6 is of the same structure as that described except that one pair or at least one group of slats 6, in the embodiment illustrated the slats 14, are arranged in a downwardly converging relation. This permits the nesting of the receptacles when the receptacles are arranged to bring a pair of downwardly converging slats into nesting relation, as shown in Fig. 7. However, when the receptacle is reversed to bring the pairs of downwardly converging slats out of nesting relation, one of the downwardly converging slats serves as a stop for one of the inclined slats of a group or a slat disposed in oppositely inclined relation to the one which constitutes the stop, see Fig. 8. This results in an effective stacking support for the receptacles.

In the modification shown in Fig. 9, the slat 31 corresponding to the slat 3 as shown in Fig. 8 is provided with an offset 32 which provides a stop coacting with the upper end of the slat 14 and more effectively prevents wedging the receptacles together.

In the embodiment of my invention shown in Fig. 10, the slats 15 are provided with laterally turned portions 16 at their upper ends which are secured to the underside of the top border frame 2. The slats 15 have integral bottom portions 17 which are secured to the upper sides of the bottom border frame 1 thus permitting inset positioning thereof and at the same time maintaining the wall slats in substantially vertical position except of course that they are inclined as described in the previously described embodiment to permit nesting.

In the embodiment shown in Fig. 11, the slats 18 have offset upper ends 19 terminating in laterally turned portions 20 secured to the upper side of the border frame. At their bottom ends, the slats 18 have inwardly offset portions 21 secured to the bottom border frame 1.

The advantage of these two constructions is that it permits the bottom border frame being of substantially less diameter than the top border frame and thus facilitates nesting while at

the same time permitting the slats being maintained in the vertical plane.

In all of these embodiments, the slats must lie side by side in the same vertical planes and the receptacles are straight-sided or substantially straight-sided and at the same time may be effectively nested.

I have illustrated my invention in very practical embodiments thereof. The structure illustrated is considerably elongated but it will be understood that the shape and dimensions are unimportant and while my invention is especially desirable for use in rectangular receptacles, inasmuch as one of the objects is to conserve space when the receptacles are in use and arranged side by side, it will be appreciated that the shape may be very greatly varied. I have not attempted to illustrate such variations as it is believed that the disclosure made will enable those skilled in the art to embody or adapt my improvements 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 rectangular non-tapered crate or receptacle, the combination of top and bottom border frames of wire, side and end wall slats of wire welded at their upper ends to the inner side of the top border frame and at their lower ends to the outer side of the bottom border frame, the top and bottom frames being of such relative dimensions that the bottom frame of one crate may be passed through the top frame of another crate with the slats of corresponding walls in substantially the same vertical plane, the side and end wall slats being disposed in oppositely inclined group relation from the centers of the sides and ends, said slats being spaced apart along the frames and the degree of inclination of the slats being such that the slats of one crate will telescope side by side with corresponding slats of another crate to permit substantial nesting, the degree of inclination being such, however, that the slats engage predetermined nesting points for limiting the nesting position of the crates, and a bottom grid comprising longitudinal and transverse members welded at their ends to the upper side of the bottom frame and to each other at their crossing points.

2. In a rectangular non-tapered crate or receptacle, the combination of top and bottom border frames of wire, side and end wall slats of wire welded at their upper ends to the inner side of the top border frame and at their lower ends to the outer side of the bottom border frame, the top and bottom frames being of such relative dimensions that the bottom frame of one crate may be passed through the top frame of another crate with the slats of corresponding walls in substantially the same vertical plane, the side and end wall slats being disposed in oppositely inclined group relation from the centers of the sides and ends, said slats being spaced apart along the frames and the degree of inclination of the slats being such that the slats of one crate will telescope side by side with corresponding slats of another crate to permit substantial nesting, and a bottom grid comprising longitudinal and transverse members welded at their ends to the upper side of the bottom frame and to each other at their crossing points.

3. In a rectangular non-tapered crate or receptacle, the combination of top and bottom frames of wire, side and end wall slats of wire secured at their upper ends to the top border

frame and at their lower ends to the bottom border frame, the top and bottom frames being of such relative dimensions that the bottom frame of one crate may be passed through the top frame of another crate with the wall slats in substantially the same vertical plane, the side and end wall slats being disposed in oppositely inclined group relation from the centers of the sides and ends, said slats being spaced apart along the frames and the degree of inclination of the slats being such that the slats of one crate will telescope side by side with corresponding slats of another crate to permit substantial nesting, the degree of inclination being such, however, that the slats engage predetermined nesting points for limiting the nesting position of the crates.

4. In a rectangular non-tapered crate or receptacle, the combination of top and bottom border frames of wire, side and end wall slats of wire spaced along said frames, the slats being secured at their upper ends on the inner side of the top border frame and at their lower ends on the outer side of the bottom border frame, the top and bottom frames being of such relative dimensions that the bottom frame of one crate may be passed through the top frame of another crate with the wall slats in substantially the same vertical plane, the side and end wall slats being disposed in oppositely inclined group relation from the centers of the sides and ends so that the slats of one crate will telescope side by side with corresponding slats of another crate to permit substantial nesting.

5. In a non-tapered crate or receptacle, the combination of top and bottom border frames of wire, a plurality of wall slats of wire secured at their upper ends to the top border frame and at their lower ends to the bottom border frame, the top and bottom frames being of such relative dimensions and the slats being spaced along the frames at such distances that the bottom frame of one crate may be passed through the top frame of another crate with corresponding wall slats side by side in a common vertical plane coincident with and following the outline of the crate, the slats in general extending vertically from the inner side of the top frame toward the outer side of the bottom frame and being disposed in inclined relation so that the slats of one crate will telescope side by side in said plane with corresponding slats of another crate to permit substantial nesting, and a bottom element welded upon the upper side of the bottom frame.

6. In a non-tapered crate or receptacle, the combination of top and bottom border frames of wire, and a plurality of wall slats of wire secured at their upper ends to the top border frame and at their lower ends to the bottom border frame, the top and bottom frames being of such relative dimensions and the slats being spaced along the frames at such distances that the bottom frame of one crate may be passed through the top frame of another crate with corresponding wall slats side by side in a common vertical plane coincident with and following the outline of the crate, the slats in general extending vertically from the inner side of the top frame toward the outer side of the bottom frame and being disposed in inclined relation so that the slats of one crate will telescope side by side in said plane with corresponding slats of another crate to permit substantial nesting.

7. A rectangular non-tapered crate or recep-

tacle comprising top and bottom border frames, and wall slats secured at their upper ends to the top frame and at their lower ends to the bottom frame, the top and bottom frames being of such relative dimensions and the slats being spaced along the frames at such distances that the bottom frame of one crate may be passed through the top frame of another crate, said slats being arranged in an inclined relation to the vertical so that the crates may be arranged one within another with the slats of the nested crates in side by side relation, a bottom carried by said bottom frame, and stacking members comprising bars having arms terminating in loops engaging the end members of the top border frame between adjacent slats so that the stacking members are swingable to a position at the outer side of the end slats of the frame or to a position within the end slats with the bar resting on the end slats between their said arms.

8. A crate or receptacle comprising top and bottom border frames, and wall slats secured at their upper ends to the top frame and at their lower ends to the bottom frame, the top and bottom frames being of such relative dimensions that the bottom frame of one crate may be passed through the top frame of another crate, said slats being spaced from one another along the frames and being disposed in a generally vertically extending surface tangent to the inner side of the top frame and the outer side of the bottom frame whereby the crates may be arranged one within another with the slats of the nested crates in side by side relation in said surface, and a bottom carried by said bottom frame.

9. A crate or receptacle comprising top and bottom border frames, and wall slats secured at their upper ends to the top frame and at their lower ends to the bottom frame, the top and bottom frames being of such relative dimensions that the bottom frame of one crate may be passed through the top frame of another crate, the internal dimensions of the top border frame exceeding the external dimensions of the bottom border frame by substantially the diameter of the side wall slats, said slats being spaced along said frames and disposed generally tangential to the inner side of the top frame and the outer side of the bottom frame so that the crates may be arranged one within another with slats of the nested crates in side by side generally co-planar relation, and a bottom carried by said bottom frame.

10. In a rectangular non-tapered crate or receptacle, the combination of top and bottom border frames, and side and end wall slats spaced along said frames and secured at their upper ends on the inner side of the top border frame and at their lower ends on the outer side of the bottom border frame, said frames being of such relative dimensions that the bottom frame of one crate may be passed through the top frame of another crate, with the slats of corresponding walls in substantially the same vertical plane, the side and end wall slats being disposed in oppositely inclined groups with the exception that one pair of slats of one group of each side are disposed in a downwardly converging relation so that when a pair of crates are presented to each other in one position they will telescope with the slats in side by side relation but when the crates are presented to one another in another position one of the slats of each pair of downwardly converging pairs of slats constitute stops coacting with an oppositely inclined slat of the

superimposed crate for supporting it in a stacking position, the end slats being provided at each end of the crate with stop members limiting the nesting movement of the crates.

11. In a rectangular non-tapered crate or receptacle, the combination of top and bottom border frames, and side and end wall slats spaced along said frames and secured at their upper ends to the top border frame and at their lower ends to the bottom border frame, said frames being of such relative dimensions that the bottom frame of one crate may be passed through the top frame of another crate, with the slats of corresponding walls in substantially the same vertical plane, the side and end wall slats being disposed in oppositely inclined groups with the exception that one pair of slats of one group of each side are disposed in a downwardly converging relation so that when a pair of crates are presented to each other in one position they will telescope with the slats in side by side relation but when the crates are presented to one another in another position one of the slats of each pair of downwardly converging pairs of slats constitute stops coacting with an oppositely inclined slat of the superimposed crate for supporting it in a stacking position.

12. A crate or receptacle comprising top and bottom border frames, and spaced wall slats secured at their upper ends to the top frame and at their lower ends to the bottom frame, the top and bottom frames being of such relative dimensions that the frame of one crate may be passed through the top frame of another, the internal dimensions of the top border frame exceeding the external dimensions of the bottom border frame by substantially the diameter of the side wall slats, said slats lying in vertical planes generally tangent to, rather than intersecting, the

peripheral outline of the crate and being arranged in an inclined relation to the vertical so that the crates may be arranged one within another with the slats in side by side relation, certain of the slats being arranged in downwardly converging pairs and others arranged in an inclined parallel relation whereby when the crates are presented to one another in one position they may be nested and when presented in another position one of the pair of downwardly converging slats will constitute a stop coacting with one of the parallel slats, such slats being provided with an offset constituting a stop.

13. A crate or receptacle comprising top and bottom border frames, and spaced wall slats secured at their upper ends to the top frame and at their lower ends to the bottom frame, the top and bottom frames being of such relative dimensions that the frame of one crate may be passed through the top frame of another, the internal dimensions of the top border frame exceeding the external dimensions of the bottom border frame by substantially the diameter of the side wall slats, said slats lying in vertical planes generally tangent to, rather than intersecting, the peripheral outline of the crate and being arranged in an inclined relation to the vertical so that the crates may be arranged one within another with the slats in side by side relation, certain of the slats being arranged in downwardly converging pairs and others arranged in an inclined parallel relation whereby when the crates are presented to one another in one position they may be nested and when presented in another position one of the pair of downwardly converging slats will constitute a stop coacting with one of the parallel slats.

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