March 16, 1948. D. H. BITNEY 2,438,030

TRANSPORTING AND STORAGE CRATE

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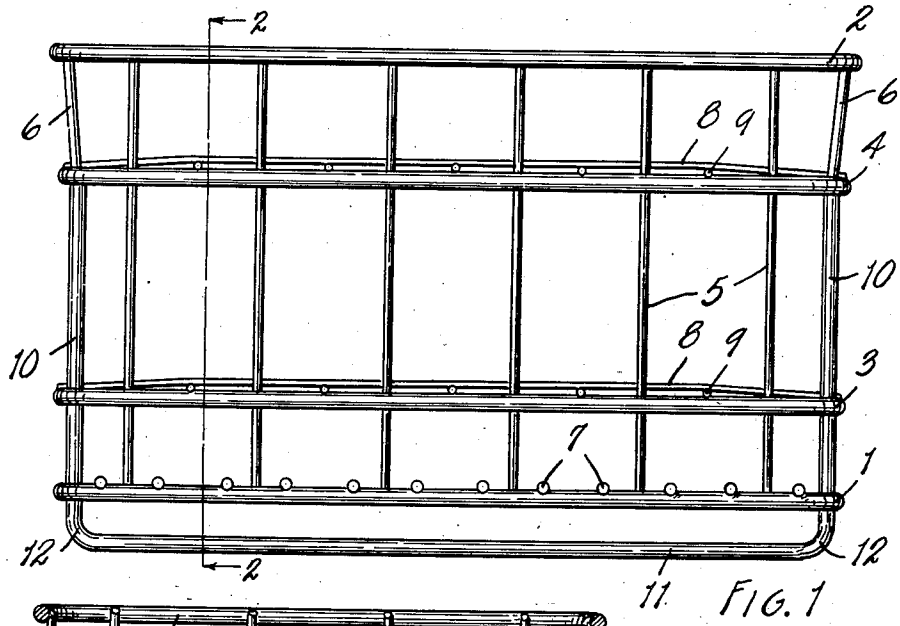


FIG. 1

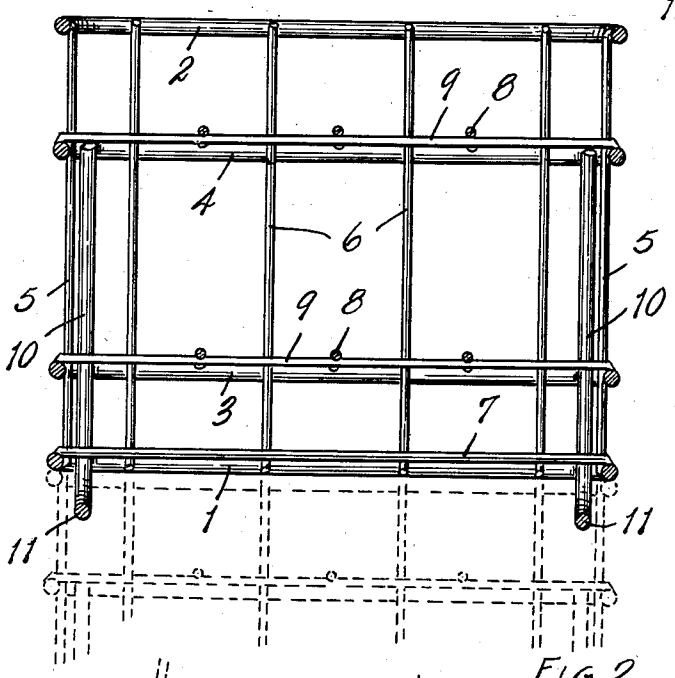


FIG. 2

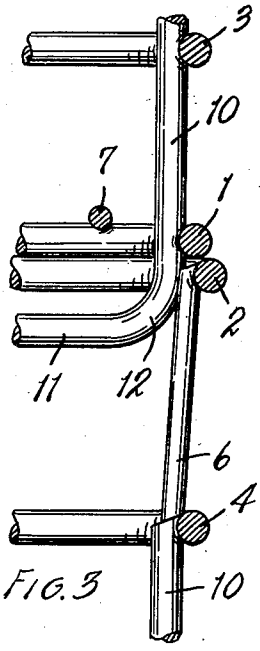


FIG. 3

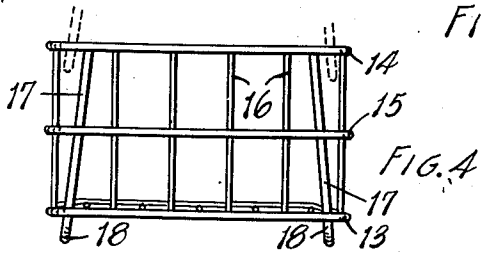


FIG. 4

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## TRANSPORTING AND STORAGE CRATE

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5 Claims. (Cl. 220—19)

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This invention relates to improvements in transporting and storage crates.

The main objects of this invention are:

First, to provide a crate which is adapted for a wide variety of uses in factories, for example, and which may be used as a "drag" crate—that is, one that can be hauled along on a floor or platform and which may be stacked, if desired, the supporting runners constituting stacking members.

Second, to provide a crate having these advantages which may be made of comparatively light stock and at the same time is strong and rigid.

Third, to provide a crate of this type having compartments adapted to receive a plurality of articles and support the same to permit their being individually removed and replaced as work is performed thereon.

Fourth, to provide a structure of this character which may be used for the delivery of goods—for example, milk.

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 drawing, in which:

Fig. 1 is a side elevation of a crate embodying my invention.

Fig. 2 is a transverse section on line 2—2 of Fig. 1, a second crate being indicated by dotted lines to illustrate the stacking relation.

Fig. 3 is an enlarged fragmentary section of a pair of stacked crates.

Fig. 4 is an end elevation of a slightly modified form or embodiment of my invention.

In the accompanying drawing I have illustrated an embodiment of my invention especially designed for use in factories where parts being manufactured are transported from one machine to another for successive operations thereon.

The embodiment illustrated comprises a bottom frame 1, top frame 2, and lower and upper intermediate frames 3 and 4. These frames are of generally rectangular shape, the frames 1, 3 and 4 being of the same size or dimension, the top frame 2 being somewhat longer than the other frames. These frames are formed of heavy wire or light rod stock and are commonly continuous—that is, the ends of the pieces constituting the frames are welded together to provide an endless element.

The frames are held in their vertically spaced relation and side and end walls provided by means of the rod-like side slats 5 and end slats

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6 which are disposed on the inner sides of the frame members and welded thereto.

The upper ends of the end slats 6 are bent outwardly at the point where they are joined to the frame member 4 to contact the inner side of the ends of the top frame member to which they are welded. Bottom slats 7 are welded to the upper sides of the side members of the bottom frame 1.

Cross partition members 8 and 9 are secured at their ends to the intermediate frame members 3 and 4 thus providing a series of compartments in which the parts to be stored or transported may be positioned. It will be understood that the size of the compartments may be varied according to the particular articles to be handled if the crate is designed or adapted to receive particular objects although experience has shown that a wide variety of objects may be placed in the crate.

The U-shaped combined runners and stacking members 10 are arranged with their arms or uprights 11 on the inner sides of the bottom and intermediate frame members and welded thereto. In Figs. 1, 2 and 3 these uprights or arms 11 terminate at the upper intermediate frame member. The members 10 are supported with their shoe or runner portions 11 substantially below the bottom frame member and to constitute runners for the crate or supports on which the crate may be dragged about.

The runner portions 11 are joined to the upright portions by the curves 12 which provide curved nose pieces at each end of the runners. These curved portions 12 also facilitate the entrance of the members 10 into the top frame member 2 or adjacent under-crate when the crates are arranged in stacked relation as shown in Figs. 2 and 3. The bottom frame member of the superimposed crate rests upon the top frame member of the undercrate so that the crates do not become wedged together, at the same time they are effectively held in stacked relation.

In the embodiment shown in Fig. 4, only three border frame members are present, these comprising the bottom frame member 13, top 14, and intermediate member 15. The side and end uprights 16 are welded to the inner sides thereof. The uprights 17 of the combined runner and stacking members 18 extend to the top frame member but they are inwardly inclined, as shown in Fig. 4, to provide space at the top of the crate to receive the projecting bottom portions of these combined runner and stacking members.

The crates are not only well adapted for use in factories for the handling of parts being proc-

essed or finished parts but my invention may be readily embodied in milk bottle crates.

I have illustrated and described my improvements in embodiments thereof which I have found highly practical. I have not attempted to illustrate or describe other embodiments or adaptations as it is believed that 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 crate, the combination of bottom, top and intermediate generally rectangular frame members, the bottom and intermediate frame members being of substantially the same dimensions, the top member being longer, side and end uprights welded to the inner sides of said frame members, and U-shaped combined runner and stacking members disposed with their arms within and welded to the ends of the bottom and intermediate frame members with their cross bar portions projecting below the bottom frame members and constituting runners and stacking members engageable within the top frame of a crate on which it is superimposed with the bottom frame member in supported engagement with the top frame member of the adjacent under-crate.

2. In a crate, the combination of bottom, top and intermediate generally rectangular frame members, side and end uprights, and U-shaped combined runner and stacking members disposed with their arms within and welded to the ends of the bottom and intermediate frame members in spaced relation to the sides of said frame members with their cross bar portions projecting below the bottom frame members and constituting runners and stacking members engageable within the top frame of a crate on which it is superimposed with the bottom frame member in supported engagement with the ends of the top frame member of the adjacent under-crate.

3. In a crate, the combination of top, bottom and intermediate frame members and uprights fixedly secured thereto, and U-shaped runners



having their arms disposed within and fixedly secured to the ends of the lower of said frame members supporting the runners substantially below the bottom frame member and terminating below said top frame member, the runners constituting stacking members nestingly engageable within the top frame member of an under-crate on which a crate is superimposed with the bottom frame member in supported engagement with the top frame member of the under-crate.

4. In a crate, the combination of top, bottom and intermediate frame members and uprights fixedly secured thereto, and runners having upwardly turned arms on each end thereof disposed within and fixedly secured to the sides of at least certain of said frame members supporting the runners substantially below the bottom frame member, the runners constituting stacking members engageable within the top frame member of an under-crate on which a crate is superimposed.

5. In a crate, the combination of vertically spaced frame members, uprights welded to the inner sides of the frame members, and runner members having upwardly projecting arms at the ends thereof, the bottom of the runners being joined to the arms thereof by curves, the runner arms being disposed within and welded to the ends of at least certain of the frame members at an angle to said uprights, the runners projecting from the bottom frame member to constitute stacking members engageable within the adjacent undercrate when the crates are stacked one upon another and offset horizontally from the runner arms of the under crate.

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