

April 17, 1928.

1,666,333

N. ISOYAMA

COLLAPSIBLE TRAY FOR EGG CRATES

Filed Aug. 11, 1926

Fig. 1

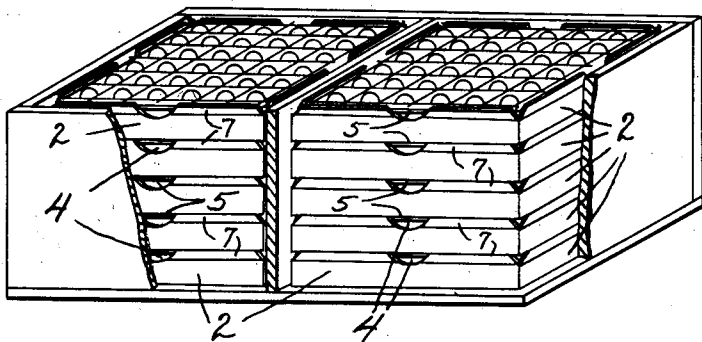


Fig. 2

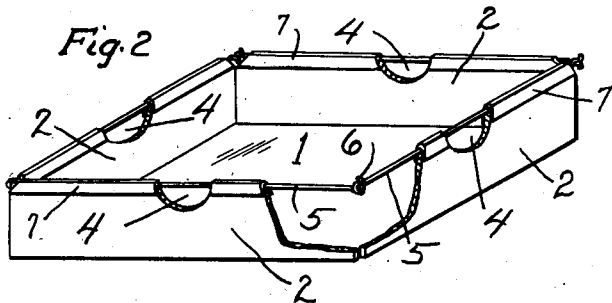


Fig. 3

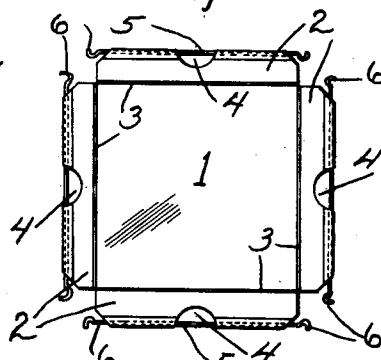


Fig. 4

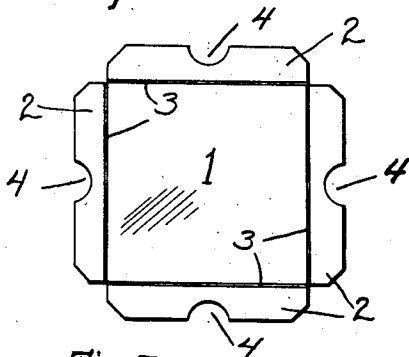


Fig. 5

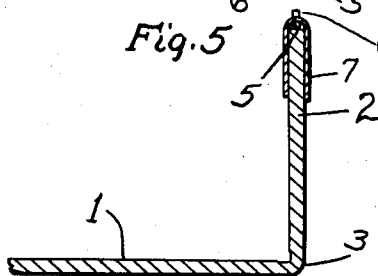


Fig. 7

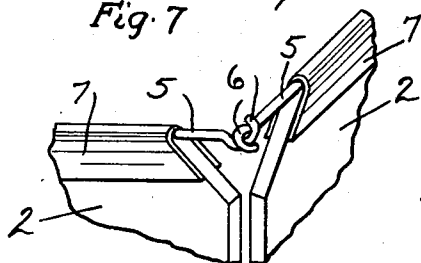
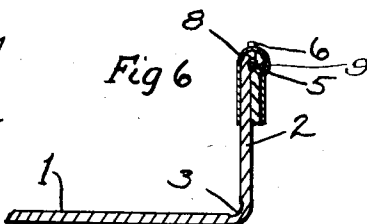


Fig. 6



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UNITED STATES PATENT OFFICE.

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COLLAPSIBLE TRAY FOR EGG CRATES.

Application filed August 11, 1926. Serial No. 128,546.

In the state of the art heretofore known it has been common to pack eggs for transportation and storage by supplying a box or case made of wood or other strong material, with collapsible frames of cardboard notched together so as to form a considerable number of compartments, each of which is adapted to contain an egg and in the process of filling a case it is customary to separate said frames by sheets of cardboard or other like material, and when a frame is seated on such a sheet of cardboard in the case, the eggs may be inserted endwise into the compartments one by one, and are held by the cardboard partitions and compartment walls, from being jostled against each other, and layers of such frames with their cardboard bottoms are placed in the case in this manner until the case is full, whereupon the case may be stored or transported either with or without putting a cover on the case.

When the case is open it is often necessary or desirable that a dealer or an inspector shall examine the contents of the case to determine whether all of the frames are full and it is also necessary for the dealer in selling a quantity of eggs less than what is contained in the case, to take the eggs out of the compartments one by one and place them in another container having like partitions and adapted to contain such smaller number of eggs as is commonly sold at retail, as for instance, one dozen or a half dozen.

Such cases and frames are also found useful in transporting fruits that are likely to be crushed, and this invention is intended to be applicable for trays of various kinds and for various purposes.

It is desirable that the trays for holding the larger frames filled with eggs shall be of light, thin and strong material; and an object of this invention is to provide a tray of this character of minimum thinness of walls combined with the required strength and provided with cheap and simple handles that are so strong that there will be no danger of their breaking or giving way to the injury of the contents of the tray.

The invention broadly comprises a tray having bottom and outside walls with notches at their top edges and wires fastened to the top edges of said walls, and extending over the notches to serve as handles by which the tray when filled with eggs can be lifted into and from the case or other large container.

It is also desirable to make provision

whereby the tray can be collapsed for storage and transportation in small space and with this in view, I provide a stamping of suitable cardboard preferably cellular cardboard, make such stamping with a central rectangular plate and rectangular side wall forming flaps hingedly connected to the edges respectively of the plate, and I secure to the outer edge of each of the flaps a wire, having hooks at its ends projecting from the ends of the flaps for the purpose of hooking together at the corners of the tray to hold the flaps up when the flaps are brought to upright position at right angles to the plate at one side thereof, and I provide oppositely arranged flaps with openings midway between their ends, which are bridged by their wires respectively, so that the wires form handles by which the trays may be handled

Said flaps may be variously constructed and the wires may be fastened to the portions thereof that are adapted to form the upper edges of the tray walls when the tray is set up as such.

Convenience of setting up the tray and collapsing it are objects of the invention.

Other objects, advantages and features of invention may appear from the accompanying drawing, the subjoined detailed description and the appended claims.

The accompanying drawing illustrates the invention.

Figure 1 is a perspective broken view of an egg case and trays embodying the invention and filled with eggs stored in its compartments.

Fig. 2 is an enlarged fragmental perspective view of a tray illustrating the invention omitting the egg frame.

Fig. 3 is a plan of the tray flattened out or collapsed.

Fig. 4 is a plan of the stamping prior to the application of the wire to the edges of the flaps.

Fig. 5 is an enlarged cross section of one of the flaps hinged to a fragment of the bottom plate.

Fig. 6 is a section of another form of flap construction.

Fig. 7 is a detail on enlarged scale of the corner fastening of two flaps, fragments of which are shown.

1 indicates a rectangular bottom plate to which the flaps 2 are hinged at 3 so that the flaps may all be spread out to a common plane with the bottom piece 1.

The bottom plate and its flaps are formed of one piece stamped out of cardboard, either plain or cellular, and creased or scored at the line of their junction with the plate.

4 indicates notches made in the edges of the flaps of the stamping, and 5 indicates the wires having hooks 6 at their ends projecting from the upper corners of the flaps when raised, and adapted to be hooked together to hold the flaps in upright position.

In the process of manufacturing the rectangular bottom plate and its four flaps will be stamped out in a single piece, the notches being cut out at the same stamping by a single die or if desired the stamping may be made by more than one operation with more than one die.

The wires in the form shown in Figs. 2 and 3 are placed against the edges of their flaps respectively and tapes 7 coated on one face with glue and creased longitudinally are applied over the wires, and the glue faces of the tape being first moistened are brought against the faces of the flaps; or vice versa, the faces of the flaps may be moistened and the glue faces of the tape brought against the same, thus fixing the wires to the edges of the flaps.

The tapes may be of any satisfactory strong material such as cheese cloth or any other fabric or strong foldable material which may be deemed suitable for the purpose.

The tape may be cut away or omitted at the notches or may be otherwise disposed of as desired to leave satisfactory finger holds at the notches.

In practical use the crate comprising the case, the trays and their contained egg frames affords a package of eggs much more convenient for examination and for handling the eggs than heretofore known; and to fill the case with eggs the trays will be set up and the corners of the flaps of each tray will be hooked together, thus holding the walls of the trays upright and the frame will be filled with the eggs or other articles to be stored or transported, and the trays will be placed one on top of another inside the case, thus forming a package the contents of which can be readily examined by simply taking hold of the wires of the trays successively and lifting the trays individually from the case; and when the contents of the trays are disposed of, the trays may be

flattened out and stored compactly one upon another in minimum space. The wires not only serving as handles but also as protection for the edges of the flaps in the forms shown in Figs. 1-5.

In the form shown in Fig. 6 the flaps 2 are made of extended height and are doubled over the wires at 8 at the height necessary to chamber the frames when the frames are in position to hold the eggs or other objects.

It is understood that the bend of the flaps may be reinforced by tape as at 9 to receive the wires.

I claim:

1. The collapsible tray set forth comprising a rectangular bottom plate, flaps hinged to the edges of said plate and adapted to be brought into upright position to form four sides of a tray, and wires extending along the edges of the flaps and fastened to said edges and projecting beyond the ends of the flaps and forming hooks for engagement with each other to hold the flaps in upright position, and adapted to be unhooked to allow the flaps to be flattened down into the plane of the bottom plate.

2. A collapsible tray comprising a rectangular bottom plate, four flaps hinged to the edges of said plate and constructed to form handles by which the bottom plate may be lifted, and wires extending along the edges of the flaps and adapted to be hooked together at the corners of said flaps to detachably fasten the flaps together to hold them in upright position, and to allow the flaps to be unfastened from each other to be flattened down into the plane of the bottom plate for storage or transportation.

3. A collapsible crate comprising a bottom plate and flaps oppositely arranged and hinged to said bottom plate; wire members detachably connected to each other at the edge portions of said flaps; a strip bent over each of the wire members and edges of the flaps and being cemented to the faces of the flaps to hold the wires in place on the edges thereof, and said flaps being provided with notches bridged by the wires, so that the wires may form handles by which the crates may be lifted by fingers thrust through the notches.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 4th day of August, 1926.

NAOKICHI ISOYAMA.