Feb. 13, 1934. C. L. MOORMAN 1,947,055

STARCH TRAY

Filed July 5, 1932

Fig. 1.

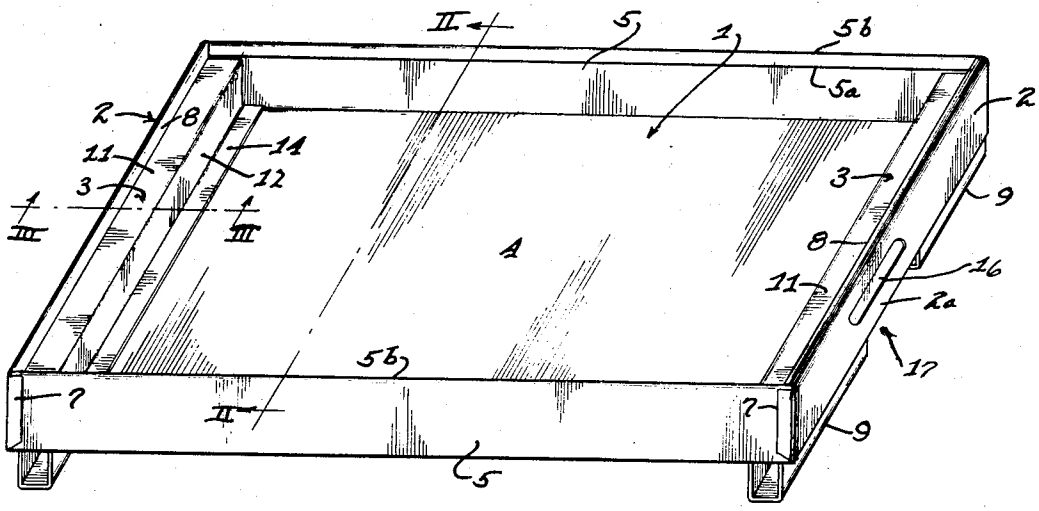


Fig. 5.

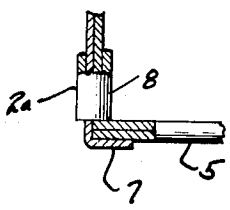


Fig. 2.

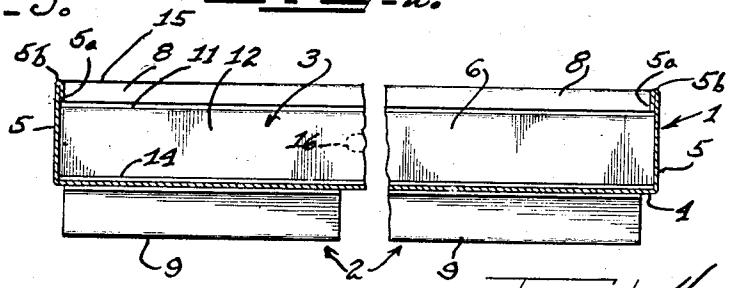


Fig. 4.

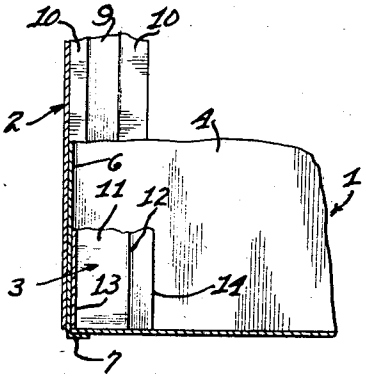
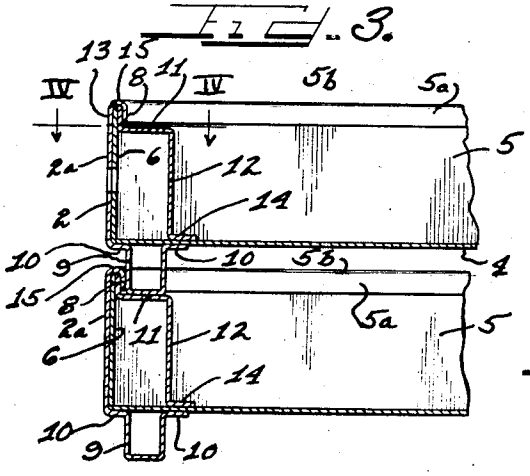


Fig. 3.



Inventor

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UNITED STATES PATENT OFFICE

1,947,055

STARCH TRAY

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7 Claims. (Cl. 220—97)

This invention has to do with trays commonly known as starch trays such as are used with molds for the making of candy and the like.

In the past, trays of this character have been made of wood or other fibrous material. It happens occasionally that regardless of the care exercised in the making of candy when employing wooden trays, a splinter will appear in the candy. This is due to the fact that oftentimes in cleaning the tray to remove all of the starch, a splinter of the tray will chip off or be scraped off and will mingle with the starch so that when the latter is placed in the tray for another candy making operation, the splinter will be positioned in or form part of the wall of one of the mold cavities and adhere to the molten material so that when the latter solidifies the splinter will be incorporated therein.

Another disadvantage of the wooden type of tray as heretofore used has been the lack of provision for proper circulation of air for cooling the pieces of candy which have been poured. Trays of the character referred to heretofore in vogue have been further unsatisfactory for the reason that after a short term of use, due to the handling to which the same have been subjected, cracks and the like have appeared in the wood, allowing some of the starch to leak out. Thus such trays require constant attention for repairs and the like.

The above and other disadvantages of trays of previous constructions are obviated by the provision of a tray of the character forming the subject matter of the present invention. This tray is made preferably of metal and comprises a box-like structure including a metallic member having a bottom and four preferably plain walls, shelves on preferably two opposite sides, and feet also preferably arranged at such sides, the feet projecting down from the box-like structure a distance in excess of the distance of the shelves from the top of said structure. With this construction, the feet of each tray are allowed to rest upon the shelves of the next lower tray, a space being provided between the bottom of the upper tray and the top of the lower tray to provide adequate circulation of air to cool the molten candy or the like. Suitable means also are preferably provided at said sides of the structure to serve as grips or handles.

Further objects and advantages of the present invention will appear as the description proceeds.

Figure 1 is an isometric view showing a starch tray constructed in accordance with the principles of the present invention.

Figure 2 is a fragmentary enlarged sectional view taken approximately in the plane of line II—II in Figure 1.

Figure 3 is an enlarged fragmentary sectional view taken approximately in the plane indicated by the line III—III of Figure 1 but showing a pair of trays, one nested in the other.

Figure 4 is a fragmentary enlarged sectional view taken approximately in the plane indicated by the line IV—IV in Figure 3, certain parts being broken away to more clearly disclose certain details.

Figure 5 is an enlarged fragmentary plan view of the upper edge of a corner of the tray with parts in section to better illustrate the specific construction.

Referring now more particularly to the drawing, it will be observed that the tray comprises five pieces consisting of a box-like member 1, two supporting members or legs 2, and two shelf members 3.

The box-like structure 1 has a floor 4 and walls 5 and 6, the latter provided with extensions 7 in the form of flaps which are bent against the end portions of the walls 5 exteriorly thereof and secured thereto by soldering, spot-welding or the like, so that the box member 1 is rendered leak proof.

Each leg member 2 is of a length substantially commensurate with one of the walls 3 and is of greater height than the wall 3 to provide a marginal portion 8 whose function will appear as the description proceeds. Each supporting member 2 is preferably substantially U-shaped in development, each of the branches or legs being transversely formed into a flanged channel shaped member constituting a foot 9, its flanges 10 lying preferably flush against the bottom 4 of the box-like structure 1. One of the flanges 10 connects the foot 9 to the wall 2*a* of the supporting member 2.

Each shelf member 3 is of a substantially flanged angle construction comprising a seat 11, an apron 12, an upwardly extending flange 13 adapted to fit against the interior of the wall 6 of the box-like structure 1, and a horizontal flange 14 which rests flush on the bottom 4 of the box 1. The shelf 3 is so formed that when positioned as shown in the drawing, its upper edge is substantially flush with the upper edge of the wall 6 of the box 1, as shown in Figure 3.

The tray is assembled as follows:

The box-like structure 1 has its marginal portions bent up to form the walls 5 and 6, and the flaps 7 are soldered or welded to the walls 5 as

shown in Figures 1 and 4. The walls 5 have return bent portions 5a as shown in Figures 1 and 2 to provide a smooth finished edge at 5b, thereby obviating the danger of injury to the hands in handling. The ends of the margins 5a terminate short of the walls 6 by substantially twice the thickness of the sheet metal employed in this construction, or, by the combined thickness of the flange 13 of the shelf 3 and the extension or marginal portion 8 of the wall 2a.

After completion of the box structure 1, the shelf members 3 are positioned as shown in the drawing, the ends of each of said members engaging the walls 5 as seen especially in Figures 1, 2 and 4. The flange 13 is spot welded or otherwise suitably secured to the upper marginal portion of the wall 6 of the box structure 1.

Lastly, the supporting members 2 are formed as shown, except that each extension designated 8 in the drawing is initially located in the plane of the wall 2a as shown at 8a in Figure 3, the wall 2a engaging the wall 6, and the flanges 10 of the feet 9 engaging the bottom surface of the floor 4 of the box-like structure 1, the marginal flange 10 being positioned in juxtaposition to the marginal flange 14 of the shelf member 3. The flanges 10 and 14 and intervening portions of the box floor 4 are secured together by spot-welding or the like, and the extension 8 is bent over the upper edge of the wall 6 and the adjacent portion of the flange 13 and downwardly over the latter so that said extension 8 terminates adjacent the seat 11.

The edge 15 thus formed is smooth and is preferably in the same plane with the edges 5b. To facilitate handling of the tray, a longitudinal opening 16 may be provided in the walls 2a of the supporting member 2. The space 17 between the feet 9 of each supporting member 2 is provided to receive a projecting bar of a conveyor whereby relative movement between the tray on the conveyor is prevented.

It will be noted that by the above described construction, a starch tray of sheet metal or similar material which will not leak may be constructed in accordance with the principles of the present invention. This tray may moreover be easily cleaned of all starch or other materials and may be washed with a disinfectant without leaving any traces of the latter when the tray is dried, in contradistinction to the tray of wood or other porous material.

It will moreover be noted that the arrangement of the feet 9 and seats 11 is such that any desired number of trays may be nested as shown in Figure 3, whereby the trays may be neatly arranged in such a manner as to allow free circulation of air through the molten candy or the like so that the same may be hardened without needless delay.

The tray is used in the art of candy making and the like in much the same manner in which flasks are employed in foundry work, the tray being substantially filled with powdered starch corresponding with the sand employed in foundry work for metal casting, and receives an impression from a pattern having projections corresponding to the shape of the pieces of candy to be made. The pattern is removed, leaving a number of holes, into which the hot candy or like syrup is poured. The trays are then arranged in nested relation as shown in Figure 3, and after the candy has hardened sufficiently, the entire contents of the tray, including both the starch and the candy are placed in a coarse screen, allowing the starch to pass therethrough but retaining the candy. Each tray is thereupon thoroughly washed so that all traces of starch are removed. The tray is then ready to be used again. Due to the absence of leakage of the starch from the tray, the process involved in the making of the candy is extremely neat. The absence of projecting parts is further advantageous since the likelihood of any part of the tray catching in clothing or the like is eliminated.

If desired, suitable rubber or like inserts (not shown) may be attached in the openings 16 for comfort in handling.

I am aware that many changes may be made and numerous details of construction may be varied through a wide range without departing from the principles of this invention, and I, therefore, do not purpose limiting the patent granted hereon otherwise than necessitated by the prior art.

I claim as my invention:

1. A starch tray comprising a box-like structure, two opposite sides of said structure being hollow, the outside wall of each side having an opening for receiving one's hand whereby the tray may be carried about without danger of disturbing the contents of the tray or of soiling the hands therewith.

2. A leak proof built-up tray construction comprising a box having at two opposite sides thereof and disposed therein a pair of shelves extending inwardly from the side walls, feet disposed adjacent said sides and located directly below the respective shelves and in spaced relation to the outer walls of the box, whereby a plurality of said trays may be nested together, with the feet of each tray resting on the shelves of the next lower tray.

3. A leak proof built-up tray construction comprising a box having at two opposite sides thereof and disposed therein a pair of shelves extending inwardly from the side walls, feet disposed adjacent said sides and located directly below the respective shelves and in spaced relation to the outer walls of the box, whereby a plurality of said trays may be nested together, with the feet of each tray resting on the shelves of the next lower tray, said feet projecting below the bottom of the box a distance in excess of the depth of said shelves, whereby when said trays are thus arranged, no obstruction is offered to the free circulation of air over the top of each tray.

4. A leak proof built-up tray construction comprising a box having at two opposite sides thereof and disposed therein a pair of shelves, feet disposed adjacent said sides and located directly below the respective shelves and in spaced relation to the outer walls of the box, whereby a plurality of said trays may be nested together, with the feet of each tray resting on the shelves of the next lower tray, each of said sides being hollow, the outer wall of each side being provided with an opening for receiving a hand, whereby the handling of the tray is facilitated, without danger of contact of the hand with the contents of the tray.

5. As an article of manufacture, a starch tray having a main open-topped cavity for receiving starch and provided with relatively small compartments at two opposite sides of the cavity, said compartments being closed to said cavity and having hand-receiving openings remote from said cavity.

6. As an article of manufacture, a starch tray having a main open-topped cavity for receiving starch and provided with compartments at two opposite sides of the cavity, said compartments

being closed to said cavity and having hand-receiving openings remote from said cavity, said tray having shelves spaced from the top thereof and having also feet projecting below the bottom thereof a distance in excess of the distance of the shelves from the top of the tray, whereby when a plurality of trays thus formed are arranged with the feet of each resting on the shelves of the next lower tray, the resulting space between the trays will permit circulation of air over the tops of the trays to cool the molds of candy or the like carried thereby.

7. As an article of manufacture, a non-fibrous starch tray having a main open-topped cavity for receiving starch and provided with relatively small compartments at two opposite sides of the cavity, said compartments being closed to said cavity and having hand-receiving openings remote from said cavity.

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