

Sept. 10, 1940.

J. H. DE MURGUIONDO

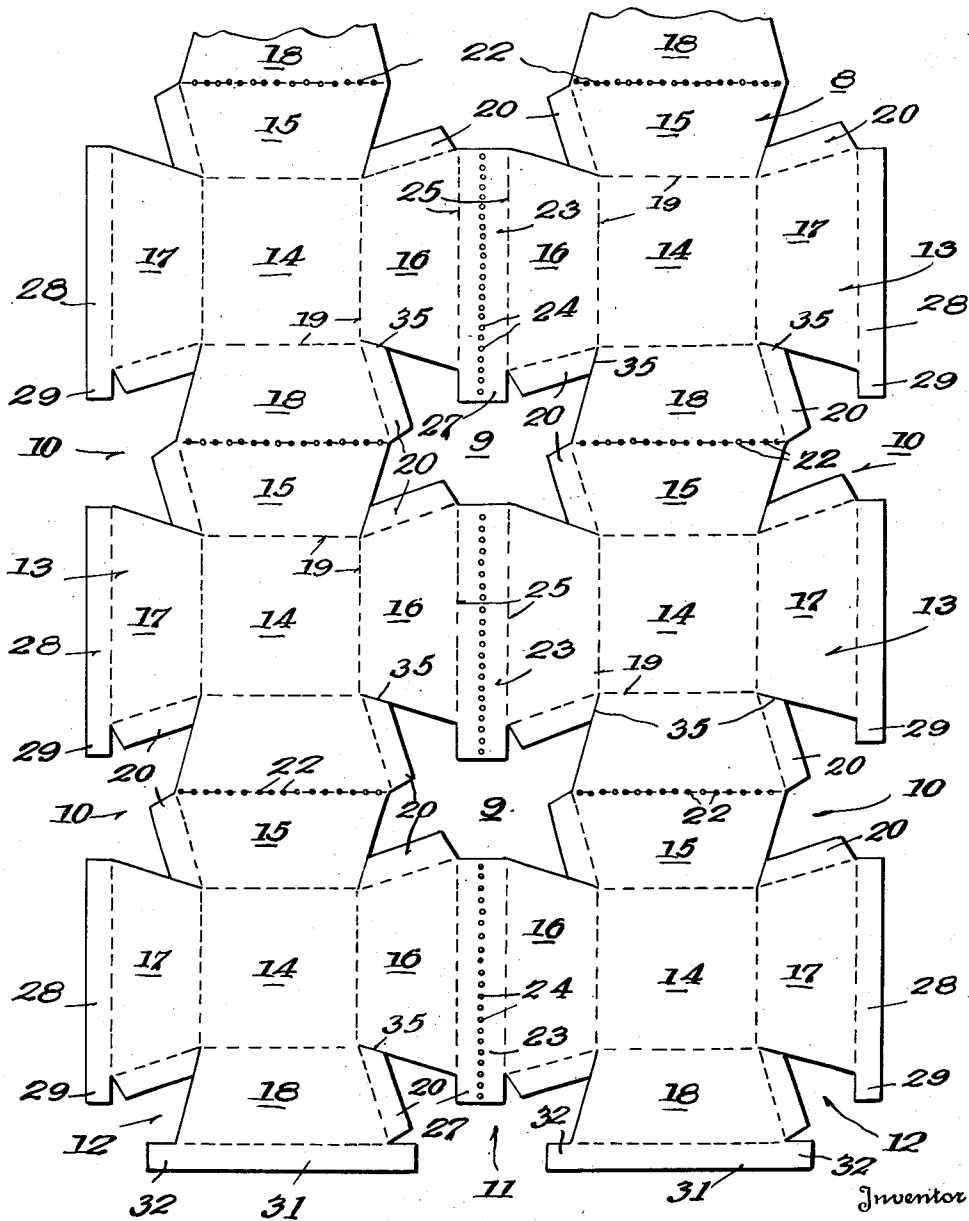
2,214,525

QUICK FREEZING ICE TRAY

Filed Jan. 24, 1940

2 Sheets-Sheet 1

Fig. 1



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2,214,525

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2 Sheets-Sheet 2

Fig. 2

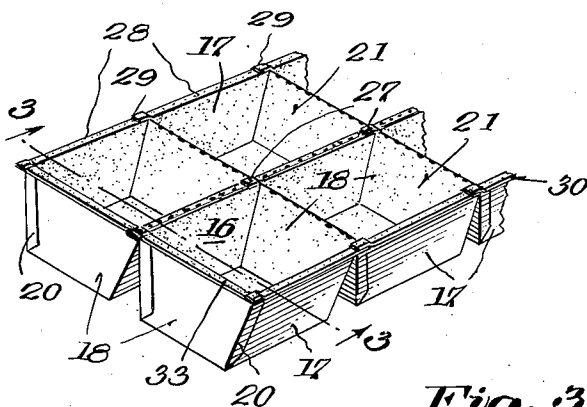


Fig. 3

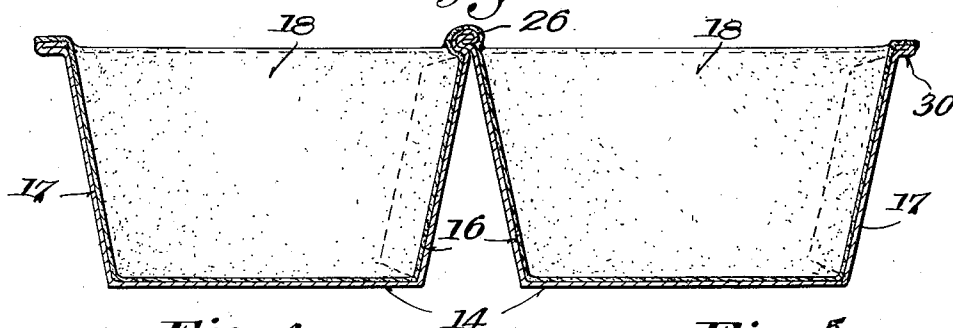


Fig. 4

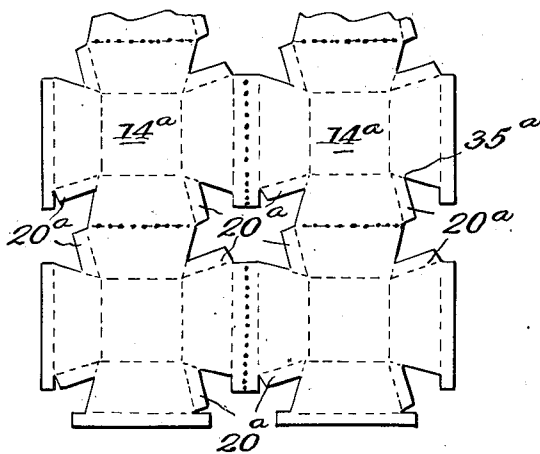


Fig. 6

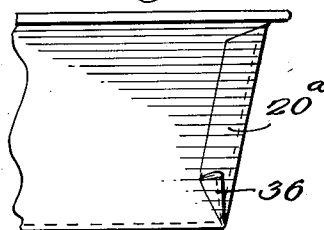


Fig. 7

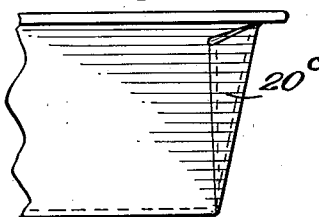
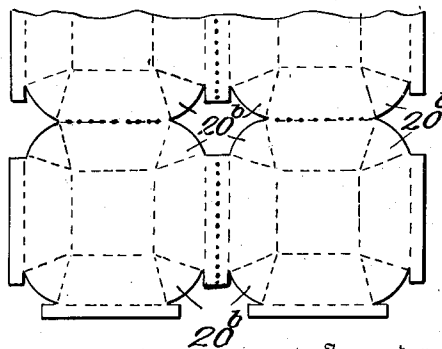


Fig. 5



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UNITED STATES PATENT OFFICE

2,214,525

QUICK FREEZING ICE TRAY

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Application January 24, 1940, Serial No. 315,447

11 Claims. (Cl. 62—108.5)

This invention relates to improvements in trays, and more particularly to a tray of novel construction for use in making ice cubes or the like in mechanical refrigerators.

5 In my Patent No. 2,162,162, I have disclosed a quick freezing ice tray formed of a relatively cheap destructible material such as a paper composition, so that the tray or portions of the same may be discarded after a single use. The primary purpose of the present invention is to provide trays which may be made from sheet material, suitably cut and set-up, to form a paper tray of cellular construction to receive the water or the like employed in making ice cubes.

10 With the foregoing object outlined and with other objects in view which will appear as the description proceeds, the invention consists in the novel features hereinafter described in detail, illustrated in the accompanying drawings, and more particularly pointed out in the appended claims.

In the drawings:

Fig. 1 is a plan view of a portion of a blank of paper or the like designed for use in making the 25 tray.

Fig. 2 is a perspective view of a portion of a tray formed from such a blank.

Fig. 3 is an enlarged vertical sectional view of the tray taken on the line 3—3 of Fig. 2.

30 Figs. 4 and 5 are views similar to Fig. 1, but showing other modifications of the blank.

Fig. 6 is an elevation of a portion of a tray made from the blank shown in Fig. 4.

Fig. 7 is a view similar to Fig. 6 of a tray made 35 from the blank shown in Fig. 5.

Referring to the drawings, it will be understood that the tray may be formed of any suitable destructible sheet material such as waxed paper, so that parts thereof will adhere to one another when the blank is pressed between suitable heated dies in setting up or assembling the component parts of the tray.

40 In the embodiment of the invention illustrated in Figs. 1 to 3 inclusive, 8 designates a blank of paraffin paper or the like having holes 9 arranged at intervals along the longitudinal central portion thereof, and provided at its opposite longitudinal edges with notches 10, each pair of notches being in lateral alignment with one of the apertures 9. A notch 11 is arranged at each end of the blank in longitudinal alignment with the openings 9, and other notches 12 are located at the corners of the blank. The uncut portions of the blank form portions 13 of Maltese cross 50 shape; each portion 13 preferably having a rec-

tangular body 14 from which wings 15, 16, 17 and 18, of trapezoidal shape, project; the wings merging into the body at fold lines 19. Each wing is provided along one of its side edge portions with a tongue 20 adapted to be secured to 5 the outer surface of an adjacent wing so as to form a seam at a corner of a cell or cup 21, as shown in Figs. 2 and 3.

The wings 15 and 18 of adjacent cup portions 13 are joined to one another by fold portions 10 provided with score lines 22 which form ridges between adjacent cups when the blank is set up, as indicated in Fig. 2.

The wings 16, 16 of adjacent cup portions are joined to one another by strip portions 23 having 15 score lines 24 extending longitudinally of the middle portion thereof, and these strip portions are joined to the wings 16, 16, along fold lines 25. When the blank is set up with the wings 16 at angles to the strip portions 23, those portions are preferably folded or curled as indicated at 26, in Fig. 3, to form a ridge extending lengthwise of the tray, and which may be torn by tearing along the score line 24. A tongue 27 forms an extension of each of the strip portions 23, and is adapted 20 to bridge one of the holes 9 and to be secured to an adjacent strip portion, as indicated in Fig. 2, when the blank is set up.

Each wing 17 is also provided with a strip portion or flap 28 having an extending tongue 29 at 30 one end thereof adapted to be secured to an adjacent flap 28 to form a flange 30 at one side of the tray when the blank is set up.

The end wings 18 of the blank are also provided with flaps 31, each having tongues 32 at its 35 opposite ends, one of said tongues being adapted to be secured to the flange 30 and the other to one of the tongues 27, so as to form a flange 33 at each end of the tray.

When a blank of the type shown in Fig. 1 is 40 pressed between suitable heated dies, the wings 15, 16, 17, 18 will be bent at angles to the body 14, and the flaps 20 will be caused to adhere to the outer surfaces of adjacent wings, as indicated in Fig. 2. At the same time, the tongues 27 will be caused to overlap adjacent strips 23, and the 45 tongues 27 at the ends of the blank will be caused to adhere to opposed ones of the tongues 32. Simultaneously, the tongues 29 will be caused to overlap adjacent strips, and the tongues 29 at the 50 ends of the blank will be caused to overlap and adhere to certain of the tongues 32. Finally, the continuous strip which has been formed by the strip portions 23, may be curled to form the ridge 26.

If the tray is not formed of wax paper, but of some other suitable plain paper, of course, an adhesive will be placed on the blanks at the necessary points to cause adherence of overlapping parts. Finally, such tray will be coated with paraffin or the like to allow water to be introduced into the cells 21.

After ice cubes have been formed from water placed in the cells, the cells may be torn from one another along the score lines 22 and 24, and in this way one or more cubes may be removed from the tray without affecting the cubes in the remaining cells.

In Fig. 1 it will be noted that the portions 13 are cut at 35 all the way into the corners of the body portions 14 so that each flap 20 extends throughout the entire height of the wing with which it merges. To eliminate any possible leakage which might be caused by manufacturing in this way, I may alter the structure as indicated in Figs. 4 to 7 inclusive. For instance, in Figs. 4 and 6, each flap 20a, instead of being the full width of the wing to which it is attached, may terminate as indicated at 35a, short of the body 14a, so as to form a short plait 36 when the blank is set up, as indicated in Fig. 6.

Instead of using the flaps at all, I may leave substantially triangular portions 20b between adjacent wings, whereby when the blank is folded, such portions 20b will form plaits 20c at the corners of the cell, each plait being of substantially the same height as the cell.

While I have disclosed what I now consider to be preferred embodiments of the invention in such manner that the same may be readily understood by those skilled in the art, I am aware that changes may be made in the details disclosed, without departing from the spirit of the invention as expressed in the claims.

What I claim and desire to secure by Letters Patent is:

1. A waterproof quick freezing ice tray formed of destructible fibrous sheet material and comprising a plurality of angular cells integral with one another, each cell having a bottom and side walls, and means forming seams connecting said side walls one to another and forming waterproof joints at the meeting places of said side walls.

2. A waterproof quick freezing ice tray formed of destructible fibrous sheet material and comprising a plurality of angular cells integral with one another, each cell having a bottom and side walls, and means forming seams connecting said side walls one to another and forming waterproof joints at the meeting places of said side walls, each seam-forming means comprising a flap integral with one wall and adhering to an adjacent wall.

3. A waterproof quick freezing ice tray formed of destructible fibrous sheet material and comprising a plurality of angular cells integral with one another, each cell having a bottom and side walls, and means forming seams connecting said side walls one to another and forming waterproof joints at the meeting places of said side walls, each seam-forming means comprising a flap of the same height as and integral with one wall and adhering to an adjacent wall.

4. A waterproof quick freezing ice tray formed of destructible fibrous sheet material and comprising a plurality of integral cells, each cell having a bottom and side walls, and means forming seams connecting said side walls one

to another and forming waterproof joints at the meeting places of said side walls, each seam-forming means comprising an upper flap and a lower plait, the flap being integral with one wall and adhering to an adjacent wall.

5. A waterproof quick freezing ice tray formed of destructible fibrous sheet material and comprising a plurality of integral cells, each cell having a bottom and side walls, and means forming seams connecting said side walls one to another and forming waterproof joints at the meeting places of said side walls, each seam-forming means comprising a plait integral with a pair of adjacent walls.

6. A waterproof quick freezing ice tray formed of destructible fibrous sheet material and comprising a plurality of integral cells, each cell having a bottom and side walls, and means forming seams connecting said side walls one to another and forming waterproof joints at the meeting places of said side walls, each seam-forming means comprising a plait of the same height as the walls and integral with a pair of adjacent walls.

7. A waterproof quick freezing ice tray formed of destructible fibrous sheet material and comprising a plurality of integral cells, each cell having a bottom and side walls, means forming seams connecting said side walls one to another and forming waterproof joints at the meeting places of said side walls, and a flange arranged at one side of the tray and formed of strips integral with certain of the walls, each strip having a tongue at one end thereof adhering to an adjacent strip.

8. A waterproof quick freezing ice tray formed of destructible fibrous sheet material and comprising a plurality of integral cells, each cell having a bottom and side walls, means forming seams connecting said side walls one to another and forming waterproof joints at the meeting places of said side walls, and a marginal flange extending around the top portion of the tray and formed of strips integral with certain of the walls, the strips having projecting tongues adhering to adjacent strips.

9. A waterproof quick freezing ice tray formed of destructible fibrous sheet material and comprising a plurality of integral cells, each cell having a bottom and side walls, means forming seams connecting said side walls one to another and forming waterproof joints at the meeting places of said side walls, and a ridge arranged at the top of the tray and formed by strips, each strip being positioned between a pair of walls of adjacent cells, the strips having projecting tongues adhering to adjacent strips.

10. A waterproof quick freezing ice tray formed of destructible fibrous sheet material and comprising a plurality of integral cells, each cell having a bottom and side walls, means forming seams connecting said side walls one to another and forming waterproof joints at the meeting places of said side walls, a ridge arranged at the top of the tray and formed by strips, each strip being positioned between a pair of walls of adjacent cells, the strips having projecting tongues adhering to adjacent strips, and a marginal flange extending around the upper portion of the tray and formed by edge strips integral with the outer walls of the cells of the tray, the edge strips also having projecting tongues adhering to adjacent edge strips.

11. A blank for use in forming a quick freezing ice tray, comprising substantially cross-

shaped elements, each having a body and arms projecting therefrom, the blank having apertures spacing certain of said arms, the edge portions of the blank being notched along lines in alignment with said apertures, and tongues integral with the arms and forming portions of the boun-

daries of the apertures and notches and arranged to form seams for sealing the joints at the meeting places of the respective arms when the blank is set up to form a tray.

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