July 22, 1947. E. K. MADAN 2,424,475

TRAY

Filed Jan. 11, 1946 2 Sheets-Sheet 1

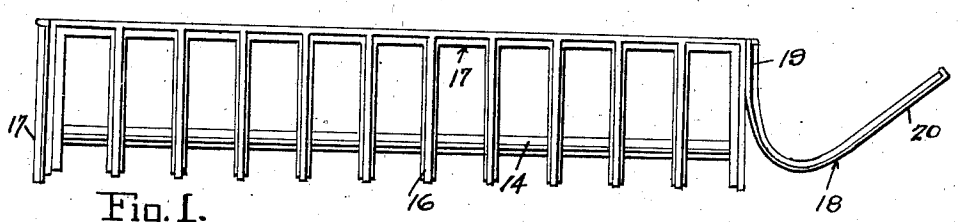


Fig. 1.

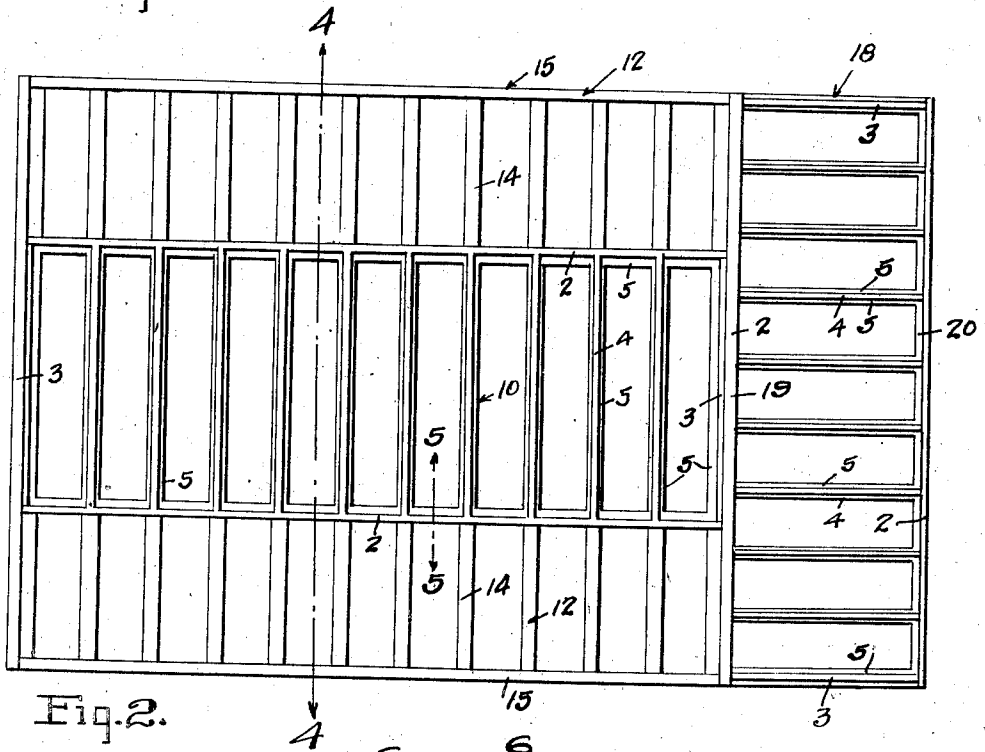


Fig. 2.

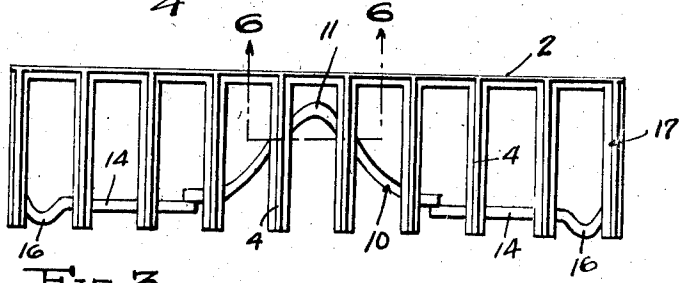


Fig. 3.

EDWARD K. MADAN.
INVENTOR.

BY Robert Meyer
attorney

July 22, 1947. E. K. MADAN 2,424,475

TRAY

Filed Jan. 11, 1946 2 Sheets-Sheet 2

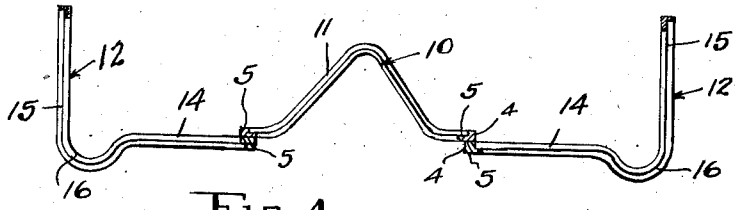


Fig. 4.

Fig. 9.

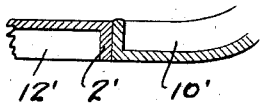


Fig. 7.

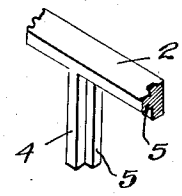


Fig. 5.

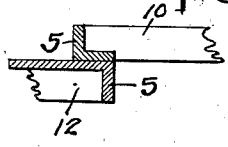


Fig. 6.

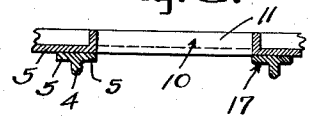
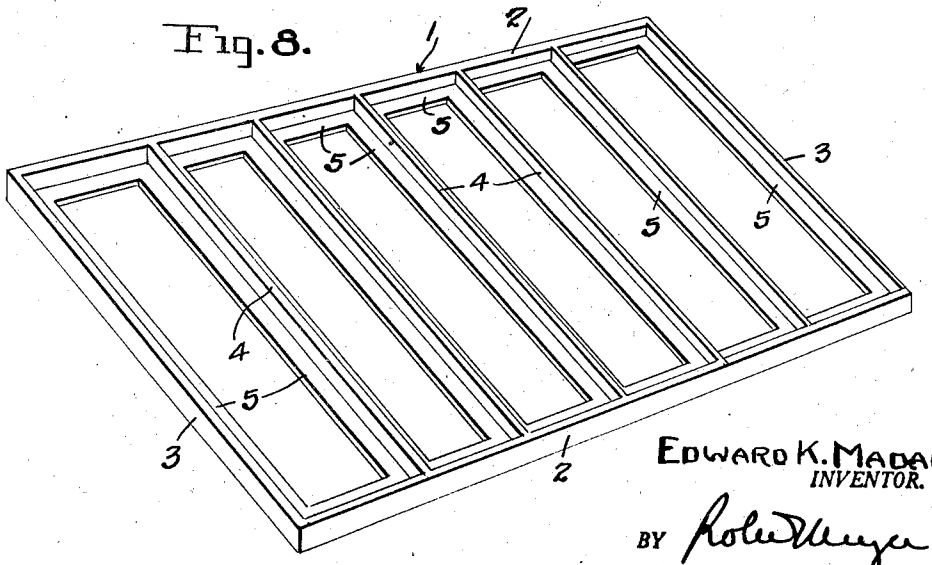


Fig. 8.



EDWARD K. MADAN.
INVENTOR.

BY Robert Meyer
attorney

Patented July 22, 1947

2,424,475

UNITED STATES PATENT OFFICE

2,424,475

TRAY

Edward K. Madan, Maplewood, N. J.

Application January 11, 1946, Serial No. 640,661

8 Claims. (Cl. 211—41)

1

This invention relates to trays, such as, drainage trays used for holding newly washed dishes.

An object of the present invention is to provide a foraminous tray embodying alternate openings and supports for supporting dishes or the like, which tray is constructed of a plurality of gridiron-like panels of molded thermo-plastic cemented together by a suitable cement to form a practical appearing tray which will not roughen, corrode, or scratch any surface upon which it is placed.

Another object of the invention is to provide a tray as specified which is fabricated from gridiron-like panels all of the same size and shape, certain of which are shaped to form the sides of the tray, while others are shaped to form the ends of the tray, thereby permitting production molding of the panels with a single set of dies of much simpler construction and greatly reduced cost than of dies which would be required to mold a complete, or practically complete, tray in a single molding operation.

With these and other objects in view, as may appear from the accompanying specification, the invention consists of various features of construction and combination of parts, which will be first described in connection with the accompanying drawings, showing a tray of a preferred form embodying the invention, and the features forming the invention will be specifically pointed out in the claims.

In the drawings:

Figure 1 is a side elevation of the tray;

Figure 2 is a top plan of the tray;

Figure 3 is an end elevation of the tray;

Figure 4 is a cross-section through the tray taken on the line 4—4 of Figure 2;

Figure 5 is an enlarged detail cross-section taken on the line 5—5 of Figure 2;

Figure 6 is a detail section taken on the line 6—6 of Figure 3;

Figure 7 is a fragmentary perspective view of a part of one of the panels;

Figure 8 is a perspective view of one of the panels prior to its shaping to form its part of the tray; and

Figure 9 is a detail section corresponding to the section shown in Figure 5, but showing a slight modification of the tray structure.

Referring more particularly to the drawings, the improved tray which is rectangular in shape is formed of a plurality of molded panels 1 of thermo-plastic. One such panel, as it comes from the molding machine and prior to being shaped to form its respective part of the tray, is shown

2

in Figure 8 of the drawings. The panel 1 comprises the sides 2, ends 3, and a series of parallel cross bars 4, all molded into a single unitary shape and forming a gridiron-like panel. The sides 2, ends 3, and cross bars or ribs 4 all have right angularly extending reinforcing flanges 5 formed thereon which strengthen the panel and increase its rigidity.

The panel of which the central portion of the bottom of the tray is formed, namely, the panel 10, is, after it is taken from the molding machine, heated and shaped to provide upwardly extending supporting sections 11 against which dishes may lean for support in the tray. The sides of the tray are formed of panels 12 which are identical in their initial molded state to the panel 1. The panels 12 are, after they come from the molding machine, heated and are shaped to provide the bottom forming portions 14 and the sides 15 which extend at right angles to the bottom-forming portions 14. The connecting portions between the horizontal portion 14 and the vertical portions 15 are rounded and dip, as clearly shown at 16 in Figures 3 and 4 of the drawings, thus providing rounded corners for the tray and supporting portions which will contact the support upon which the tray, when finished, is placed, thereby preventing the bottom of the tray from contacting the surface upon which the tray is placed and permitting free drainage of water from the dishes held by the tray.

The meeting longitudinal edges of the central panel 10 and the side-forming panels 12 overlap, as clearly shown in Figure 5 of the drawings, and these overlapping edges are cemented one to the other by suitable cement, such as an acetate cement, so as to firmly and rigidly connect the panels forming the sides and bottom of the tray together. By overlapping the meeting edges of the panels 10 and 12, the completed tray is rendered sturdy and more rigid.

One of the panels, as shown in Figure 8, is cut longitudinally to form one end of the tray, and this panel 17 is cemented by suitable cement to the ends of the side panels 12 and one end of the central bottom-forming panel 10 with its side 2 forming the top of the tray, while the free ends of the cut cross bars 4 are in the same plane as the lowermost portions of the curved dipped portions 16 of the side-forming panels 12 so as to provide additional surface-contacting supports for the tray.

One of the panels, namely, the panel 18 which forms the end of the tray opposite to the one formed by the cut panel 17 is shaped or curved

intermediate its sides to form a manger-like article support exterior of the main body of the tray, as clearly shown in Figure 1 of the drawings. This end forming panel 18 has a part 19 which forms the end of the tray flat and is cemented to the ends of the panels 10 and 12 opposite to the ends of these members to which the cut panel 17 is cemented. The panel 18 is heated and formed over any suitable type of mandrel to provide the curved portion connecting the straight portion 19 and the substantially straight outer side portion 20 of the panel 18 so as to provide the dipped or manger-like support on which knives, forks, spoons, or other articles may be placed for draining.

In Figure 9 of the drawings, a slight modification of the invention is shown, and in this figure, the sides of the panel 10' which form the central portion of the bottom of the tray abut against right angularly extending sides 2' of the panels 12' which form the side portions of the bottom and the sides of the tray, instead of being in overlapping relation as shown in Figure 5. These abutting surfaces are cemented one to the other. It is to be understood in the cementing of the various sections and various panels to each other that they may overlap or abut, as desired, without departing from the spirit of the present invention.

The cut cross bars 4 of the panel 17 which is cut to form one end of the tray abut and are cemented to the ends 3 of the panel 10 and the panels 12, as clearly shown in Figure 6 of the drawings.

While in the drawings and in the foregoing description the tray is shown and described as particularly adapted for holding dishes and/or silverware for draining, it is to be understood that the improved tray may be used for any suitable purpose and that the present invention comprehends the novel feature of forming a foraminous tray of a plurality of identical panels of molded thermo-plastic which are shaped after molding to form the various parts of the tray and are then cemented together to provide the complete tray.

The trays, being made of thermo-plastic material, may be made in any desired color, will have an attractive sheen, and, owing to the nature of the thermo-plastic material, will not scratch or mar silverware, dishes, or any other articles supported by the trays.

It will be understood that the invention is not to be limited to the specific construction or arrangement of parts shown, but that they may be widely modified within the invention defined by the claims.

What is claimed is:

1. A tray made from a plurality of identical gridiron-like panels of molded thermo-plastic comprising a bottom forming panel having cross bars bowed upwardly to form upwardly extending supports within the tray, and side and end forming panels cemented to opposite sides of said bottom forming panel.

2. A tray made from a plurality of identical gridiron-like panels of molded thermo-plastic comprising a bottom-forming panel having cross bars bowed upwardly to form upwardly extending supports within the tray, side-forming panels shaped to form the sides and part of the bottom of the tray and cemented to opposite ends of the bottom-forming panel, and end forming panels cemented to sides of said bottom and to opposite ends of said side-forming panels.

3. A tray made from a plurality of identical gridiron-like panels of molded thermo-plastic comprising a bottom-forming panel having cross bars bowed upwardly to form upwardly extending supports within the tray, side-forming panels shaped to form the sides and part of the bottom of the tray and cemented to opposite ends of the bottom-forming panel, end forming panels cemented to sides of said bottom and to opposite ends of said side-forming panels, and one of said end forming panels being curved outwardly and upwardly from the bottom of the tray to form an article supporting extension exteriorly of the tray proper.

4. A tray made from a plurality of identical gridiron-like panels of molded thermo-plastic comprising a bottom-forming panel having cross bars bowed upwardly to form upwardly extending supports within the tray, side-forming panels shaped to form the sides and part of the bottom of the tray and cemented to opposite ends of the bottom-forming panel, end forming panels cemented to sides of said bottom and to opposite ends of said side-forming panels, one of said end forming panels being curved outwardly and upwardly from the bottom of the tray to form an article supporting extension exteriorly of the tray proper, and the panel forming the other end of the tray being cut to provide the proper height for the tray end.

5. A tray made from a plurality of identical gridiron-like panels of molded thermo-plastic comprising a bottom-forming panel having cross bars bowed upwardly to form upwardly extending supports within the tray, side-forming panels shaped to form the sides and part of the bottom of the tray and cemented to opposite ends of the bottom-forming panel, end forming panels cemented to sides of said bottom and to opposite ends of said side-forming panels, one of said end forming panels being curved outwardly and upwardly from the bottom of the tray to form an article supporting extension exterior of the tray proper, the panel forming the other end of the tray being cut to provide the proper height for the tray end, and the cross bars and ends of the panels forming part of the bottom and the sides of the tray being curved and dipped outwardly of the bottom of the tray at the junction of their side and end-forming portions to form supports for supporting the bottom of the tray above a surface on which the tray rests.

6. A tray made from a plurality of identical gridiron-like panels of molded thermo-plastic comprising a bottom-forming panel having cross bars bowed upwardly to form upwardly extending supports within the tray, side-forming panels shaped to form the sides and part of the bottom of the tray and cemented to opposite ends of the bottom-forming panel, end forming panels cemented to sides of said bottom and to opposite ends of said side-forming panels, and the meeting edges of said bottom-forming and said side and bottom-forming panels overlapping and cemented together.

7. A tray made from a plurality of identical gridiron-like panels of molded thermo-plastic; each of said gridiron-like panels comprising side and end spaced cross bars, laterally extending flanges formed integrally with the side and end cross bars of the panels; one of said panels forming the longitudinally central portion of the bottom of the tray and having its cross bars bowed upwardly to form upwardly extending supports; and side and end-forming panels cemented to the

opposite ends and sides of said central bottom-forming panel respectively.

8. A tray made from a plurality of identical gridiron-like panels of molded thermo-plastic; each of said gridiron-like panels comprising side and end spaced cross bars, laterally extending flanges formed integrally with the side and end cross bars of the panels; one of said panels forming the longitudinally central portion of the bottom of the tray and having its cross bars bowed upwardly to form upwardly extending supports; side forming panels being folded intermediate their side edges to form horizontal bottom-forming sections and vertical side-forming sections; the portions of said panels between the horizontal and vertical portions being curved and dipped to provide supporting projections extending outwardly from the bottom of the panel; and end

forming panels cemented to the opposite ends and the sides of said side and bottom forming panels respectively.

EDWARD K. MADAN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
457,318	Haskins	Aug. 4, 1891
1,480,043	Blakeslee	Jan. 8, 1924
2,292,721	Stanton	Aug. 11, 1942
233,340	Fithian	Oct. 19, 1880
934,721	Garretson	Sept. 21, 1909
2,197,178	Gates	Apr. 16, 1940