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3,163,287

TRAYS

Filed June 27, 1963

2 Sheets-Sheet 1

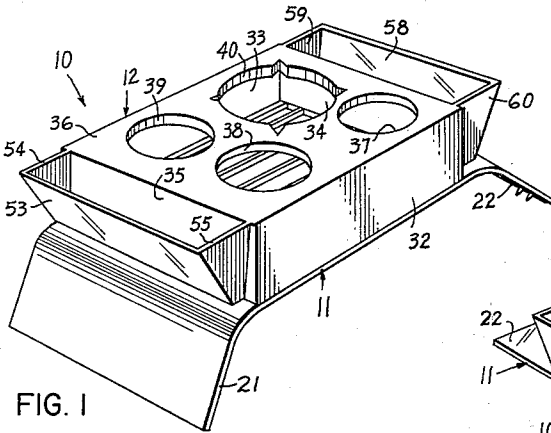


FIG. 1

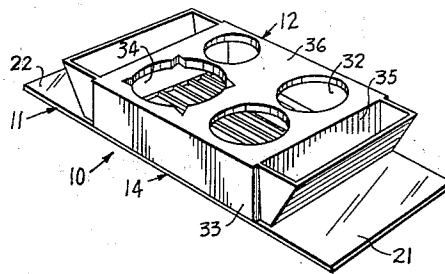


FIG. 5

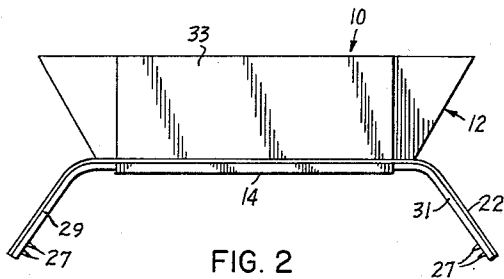


FIG. 2

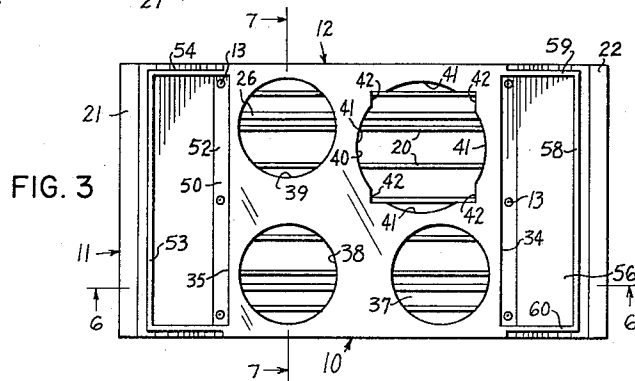


FIG. 3

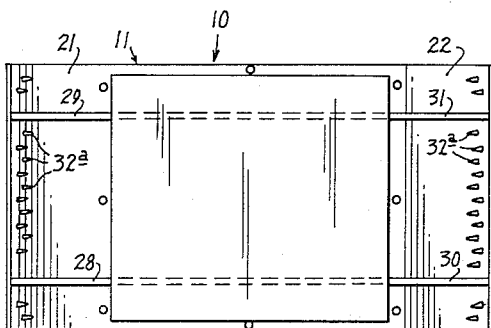


FIG. 4

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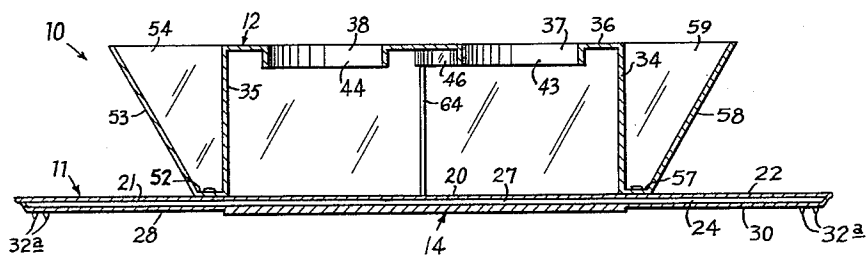


FIG. 6

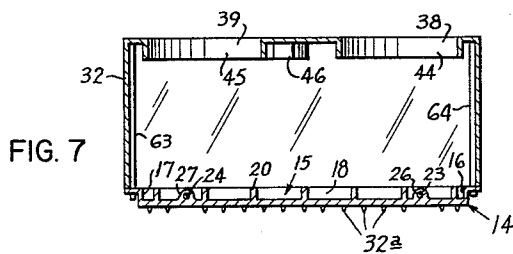


FIG. 7

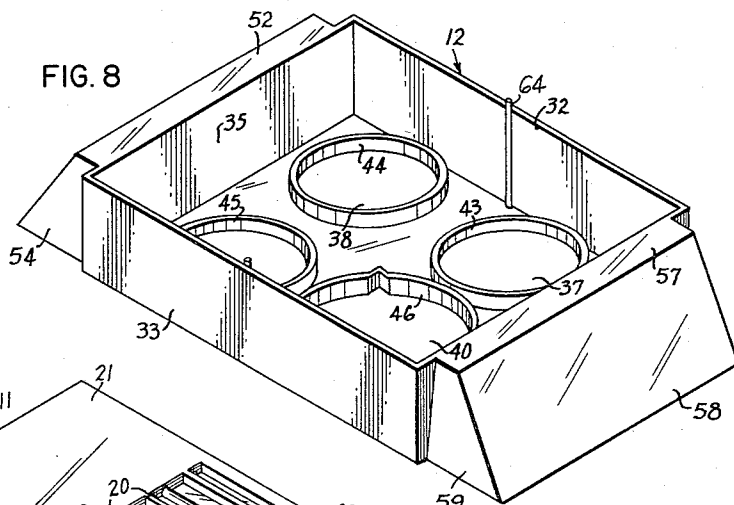


FIG. 8

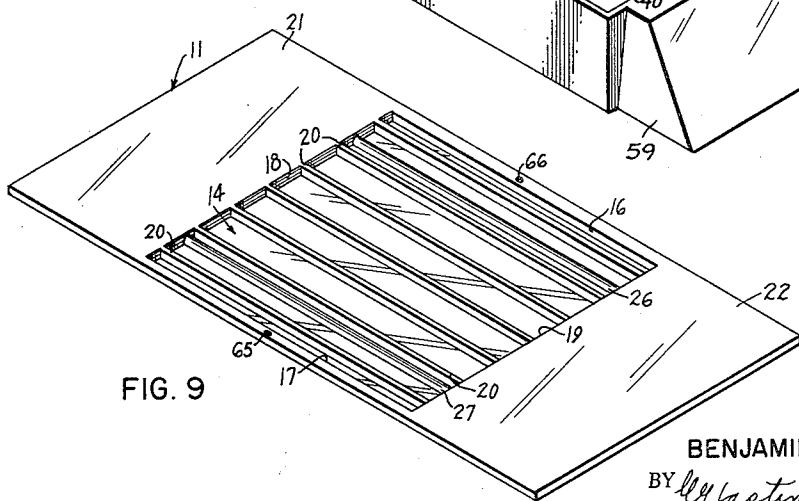


FIG. 9

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11 Claims. (Cl. 206—19.5)

This invention relates to trays.

An object of this invention is to provide a new and improved tray having a support base deformable to a configuration corresponding to that of a support surface whereby the tray is positionable on support surfaces of various configurations.

Another object is to provide a tray having a base and a body secured to the base for holding or retaining articles, such as bottles or cans, in an upright position on the base.

Still another object is to provide a tray wherein the support base has a drip recess over which the articles are supported whereby any liquids present or condensing on the articles held in upright position by the tray flow into the drip recess and out of contact with the bottoms of the articles.

A further object is to provide a tray having a substantially rectangular base having an intermediate rigid drip recess section and a pair of deformable end portions whereby the end portions may be deformed to conform to the configuration of the support surface on which the tray is mounted, and a retainer body secured to the base having a retainer plate spaced above the drip recess provided with a plurality of apertures therethrough for receiving the articles supported on the base.

A still further object is to provide a tray wherein the retainer body has upwardly opening receptacles on opposite ends of the retainer plate for holding articles.

A still further object is to provide a tray wherein the end portions of the base have gripping means for gripping a support structure.

Another object is to provide a tray wherein at least one of the apertures of the retainer plate has a squared circle configuration whereby articles of both circular and square cross-sectional configurations are receivable in the aperture.

Still another object is to provide a tray which is formed of a minimum of components and adapted to hold a variety of articles of different shapes against displacement thereon.

Additional objects and advantages of the invention will be readily apparent from the reading of the following description of a device constructed in accordance with the invention, and reference to the accompanying drawings thereof, wherein:

FIGURE 1 is a perspective view of the tray embodying the invention showing the base deformed to conform to a substantially convex configuration of a support structure;

FIGURE 2 is a side view of the tray illustrated in FIGURE 1;

FIGURE 3 is a top view of the tray illustrated in FIGURE 1;

FIGURE 4 is a bottom view of the tray illustrated in FIGURE 1;

FIGURE 5 is a perspective view of the tray showing the base in its planar position for supporting the tray on a planar surface;

FIGURE 6 is a vertical sectional view, taken on the line 6—6 of FIGURE 7, of the tray illustrated in FIGURE 5;

FIGURE 7 is a vertical sectional view taken on line 7—7 of FIGURE 6;

FIGURE 8 is a perspective bottom view of the retainer section of the tray; and

FIGURE 9 is a perspective top view of the base of the tray.

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Referring now particularly to the drawings, the tray 10 embodying the invention includes a substantially flat rectangular support base 11 and a retainer body 12 rigidly secured to the base in any suitable manner, as by the rivets 13. The base 11 has an intermediate drip recess section 14 which provides an upwardly opening recess 15 defined by the longitudinal walls 16 and 17 and the transverse vertical walls 18 and 19. A plurality of rigidifying and article supporting ribs 20 extend longitudinally through the drip recess and their upper edges are flush with the upper surface of the intermediate base 14 so that articles may be supported on the ribs and above any liquid which may condense on such articles and flow into the drip recess 15.

The intermediate base section is thicker than the deformable end portions 21 and 22 which extend longitudinally in opposite directions from the intermediate section in order that the intermediate base section be quite rigid or non-deformable.

A pair of elongate reinforcing members 23 and 24, such as soft iron wire or the like, extend longitudinally the length of the base and their intermediate sections which extend through the drip recess are embedded in the top ribs 26 and 27, respectively, while their opposite end portions which extend below the lower surfaces of the deformable end portions 21 and 22 are embedded in the bottom ribs 28 and 29 of the base end portion 21 and in the bottom ribs 30 and 31 of the base end portion 22.

A plurality of teeth or gripping members 32a extend downwardly from the bottom surface of the deformable end portions of the base to engage the support structure and enter into any interstices, recesses or apertures thereof to hold the base against movement thereon.

The base 11 is preferably formed of plastic and the reinforcing members 23 and 24 are preferably molded in the base at the time the base is formed in a suitable mold.

The retainer body 12 of the tray is also preferably formed of plastic by use of a suitable mold and is of substantially open bottom box shape having the longitudinal side walls 32 and 33 and transverse end walls 34 and 35 which extend downwardly from the top wall or retainer plate 36. The bottom edges of the side and end walls rest on the base and extend about the drip recess 15. The retainer plate has a plurality of spaced article receiving apertures 37, 38, 39 and 40 which may be of any desired dimensions and configurations. For example the apertures 37, 38 and 39 may be circular in configuration while the aperture 40 may be a squared circle in configuration being defined by four segments of a circle and the four corners 42 of a square symmetrically disposed relative to the circle, the diagonal distance between opposite corners thereof being greater than the diameter of the circle. The top retainer plate has downwardly extending flanges 43, 44, 45 and 46 which provide the vertical surfaces defining the apertures 37, 38, 39 and 40, respectively. These surfaces provide large areas of contact of the retainer plate with the articles which extend the apertures and are supported on the ribs 20 of the base above the drip recess 15 thereof.

The retainer body 12 has at one end an upwardly opening article receiving recess 50 defined by the end wall 35 thereof, the horizontal longitudinally outwardly extending bottom flange 52 which extends longitudinally outwardly from the end wall 35, the upwardly and outwardly inclined transverse wall 53 and the longitudinal walls 54 and 55 which extend outwardly from the end wall 35. A similar article receiving recess 56 at the outer end of the body is defined by the end wall 34, the body flange 57 which extends horizontally from the end wall 34, the upwardly and outwardly extending or inclined transverse

wall 58 which extends upwardly from the flange 57 and the longitudinal walls 59 and 60 which extend from the end wall 34. The rivets 13 which secure the retainer body 12 to the base 11 extend through suitable apertures in the flanges 52 and 57 and through suitable apertures in the base on opposite ends of the drip recess.

The side walls 32 and 33 have integral vertical reinforcing ribs 63 and 64, respectively, whose lower end portions extend downwardly of the bottom edges of the side walls and are receivable in the apertures 65 and 66 of the base located outwardly of the drip recess. The engagement of the rib end portions in the recesses 65 and 66 serves to rigidly secure the intermediate or middle portions of the side walls to the base and prevent lateral displacement thereof relative to the base.

In use, the tray may be positioned on a support surface of any configuration. For example, if the support surface is flat, the base may be placed in its flat or planar position illustrated in FIGURES 5, 6, 7 and 9 and its gripping members or teeth 32a will engage the support surface and tend to dig therein or enter into any interstices or external recesses of the support surface and hold the tray against inadvertent displacement thereon. If the support surface is substantially convex, as for example the upper surface of the longitudinally extending transmission hump of the floor of an automobile, the end portions of the base are deformed downwardly on opposite sides of the drip recess to conform to the configuration of such hump or support surface so that the tray will be positioned atop the hump and be held against displacement on the hump by the engagement of the downwardly bent end portions of the base on opposite sides of the hump. The soft iron wires or members 23 and 24 tend to hold any curve or shape into which they are bent and this holds the flexible end portions of the base in any position to which they are bent. The end portions may be bent to force the gripping members 32a into the interstices of the fabric or any apertures or recesses in such support surface to further help hold the tray against displacement.

Various articles may be held by the tray against displacement therefrom even if the tray is subject to vibration and shocks as for example if the tray is mounted in a moving vehicle, such as an automobile. Containers, such as bottles or cans, may be held by the tray by being inserted through any one of the apertures in the top retainer plate whereby the retainer plate engages the sides or vertical surfaces of such articles and holds them in vertical position with their bottom ends resting on the longitudinal ribs of the base so that the contents of the bottles or cans will not be spilled due to overturning thereof. If the article is substantially rectangular or square in cross section, it may extend through the recess 39 of the top plate. The square corners of the squared circle recess may be that of a square of the outer dimensions of the usual square milk bottle so that a square milk bottle may be easily positionable in the aperture 39 as well as round objects such as bottles, cans and the like. Any condensate or liquid dripping from such milk bottle or other article collects in the drip recess so that its bottom end is held spaced from the drip recess by the ribs 20 and will not therefore be wet when removed from the tray. The upwardly opening receptacles 53 and 56 may hold such articles as packages, glasses, magazines, books and the like.

It will now be seen that a new and improved tray has been illustrated and described which is formed of only two members, the base 11 and the retainer and receptacle body 12, each of which may be a single molded integral piece of plastic, and that the body 12 is rigidly secured intermediate the ends of the rectangular base with its retainer plate spaced above a drip recess of the base so that articles which are inserted through the apertures of the top plate rest on the ribs which extend through the drip recess whereby the articles are held against lateral displacement by the engagement of the surfaces of the top

plate defining the apertures with the outer surfaces of such articles.

It will further be seen that the base includes a pair of transversely spaced longitudinally extending deformable reinforcing members 23 and 24 embedded in the base for reinforcing the base and holding outer end portions of the base in any position to which they are bent whereby the base may be bent to conform to the configuration of any support surface on which the tray is to rest.

It will further be seen that the retainer body is provided with a pair of upwardly opening receptacles at opposite ends of the retainer plate and that the base is provided with gripping means on its lower surface which engage the support surface to prevent displacement of the base thereon.

It will further be seen that at least one or more of the apertures of the retainer plate may be of squared circle configuration whereby objects both square and round in cross sectional configuration may be received in such square aperture.

It will now further be seen that the new and improved tray is of easily fabricated and assembled construction and is adaptable to rest on support surfaces of varying different configurations.

The foregoing description of the invention is explanatory only, and changes in the details of the construction illustrated may be made by those skilled in the art, within the scope of the appended claims, without departing from the spirit of the invention.

What is claimed and desired to be secured by Letters Patent is:

1. A tray including: a substantially rectangular flat base having an intermediate portion and end portions extending in opposite directions from opposite ends of said intermediate portion, said intermediate portion having an upwardly opening drip recess and support means for holding articles above said drip recess; a retainer plate spaced above and disposed parallel to said intermediate base portion and having a plurality of apertures through which articles may extend and rest on said intermediate portion.

2. A tray including: a substantially rectangular flat base having an intermediate portion and end portions extending in opposite directions from opposite ends of said intermediate portion, said end portions being deformable whereby said base may rest on support surfaces of different configurations, said end portions having gripping means for engaging a support surface to prevent displacement of the base thereon.

3. A tray including: a substantially rectangular base having an intermediate portion and end portions; said end portions being deformable whereby said base may rest on support surfaces of different configurations, said end portions having transversely spaced longitudinally deformable reinforcing members for holding said end portions in any positions assumed thereby.

4. A tray including: a substantially rectangular base having an intermediate portion and end portions, said end portions being deformable whereby said base may rest on support surfaces of different configurations, said base having a pair of transversely spaced elongate deformable members secured thereto for holding said end portions in positions engaging a support surface.

5. A tray including: a substantially rectangular base having an intermediate portion and a pair of end portions, said intermediate portion having an upwardly opening drip recess, and support means for holding articles above said recess, said end portions being deformable to correspond to the configuration of a support surface on which said tray is to be supported; and a retainer body secured to said base having side and end walls whose lower edges rest on said intermediate portion of said base and extend about said drip recess, and a retainer plate connected to upper edges of said walls and extending over said drip recess, said retainer plate having a plurality

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of apertures through which may extend articles supported by said support means.

6. A tray including: a substantially rectangular base having an intermediate portion and a pair of end portions, said intermediate portion having an upwardly opening drip recess, and support means for holding articles above said recess, said end portions being deformable to correspond to the configuration of a support surface on which said tray is to be supported; a retainer body secured to said base having side and end walls whose lower edges rest on said intermediate portion of said base and extend about said drip recess, and a retainer plate connected to upper edges of said walls and extending over said drip recess, said retainer plate having a plurality of apertures through which may extend articles supported by said support means, said body having flanges extending longitudinally outwardly of its end walls and resting on said intermediate portion on opposite ends of said drip recess.

7. A tray including: a substantially rectangular base having an intermediate portion and a pair of end portions, said intermediate portion having an upwardly opening drip recess, and support means for holding articles above said recess, said end portions being deformable to correspond to the configuration of a support surface on which said tray is to be supported; a retainer body secured to said base having side and end walls whose lower edges rest on said intermediate portion of said base and extend about said drip recess, and a retainer plate connected to upper edges of said walls and extending over said drip recess, said retainer plate having a plurality of apertures through which may extend articles supported by said support means, said body having flanges extending longitudinally outwardly of its end walls and resting on said intermediate portion on opposite ends of said drip recess, said body having means providing with said flanges upwardly opening recesses on opposite ends of said body outwardly of said retainer plate.

8. A tray including: a substantially rectangular base having an intermediate portion and a pair of end portions, said intermediate portion having an upwardly opening drip recess, and support means for holding articles above said recess, said end portions being deformable to

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correspond to the configuration of a support surface on which said tray is to be supported, said end portions having transversely spaced elongate members holding said end portions in positions corresponding to the configuration of a support surface.

9. A tray including: a substantially rectangular base having an intermediate portion and a pair of end portions, said intermediate portion having an upwardly opening drip recess, and support means for holding articles above said recess, said end portions being deformable to correspond to the configuration of a support surface on which said tray is to be supported, said end portions having transversely spaced elongate members holding said end portions in positions corresponding to the configuration of a support surface, said end portions having gripping members extending angularly therefrom for engaging a support surface.

10. A tray including: a substantially rectangular base having an intermediate portion and a pair of end portions, said intermediate portion having an upwardly opening drip recess, and support means for holding articles above said recess, said end portions being deformable to correspond to the configuration of a support surface on which said tray is to be supported, said base having a pair of transversely spaced reinforcing members embedded therein, said reinforcing members holding said end portions in positions corresponding to the configuration of a support surface.

11. The tray of claim 2 and a retainer body secured to said base having side and end walls whose lower edges rest on said intermediate portion of said base and a retainer plate connected to upper edges of said walls and extending over said intermediate portion, said retainer plate having a plurality of apertures through which may extend articles supported by said support means.

References Cited in the file of this patent

UNITED STATES PATENTS

2,695,712	Kolander	Nov. 30, 1954
2,897,974	Cook	Aug. 4, 1959
2,969,900	Heuler	Jan. 31, 1961
3,009,623	Wenzel	Nov. 21, 1961