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(54) AUTOMOTIVE TRAY

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(57) **ABSTRACT**

An automotive tray includes a generally planar base with a top surface, a bottom surface, a front sidewall, a rear sidewall, a right sidewall and a left sidewall, and portions of the bottom surface having a rough texture to provide frictional engagement when the tray is in use. A crumb tray is disposed in the base, is recessed below the top surface, and extends below the bottom surface to assist in preventing movement of the tray when in use. The bottom surface may have a rough texture, such as one or more frictional mats attached to the bottom surface of the tray. A plurality of frictional strips may also be disposed on the top surface of the tray, with the frictional strips extending partially between the right and left sidewalls.

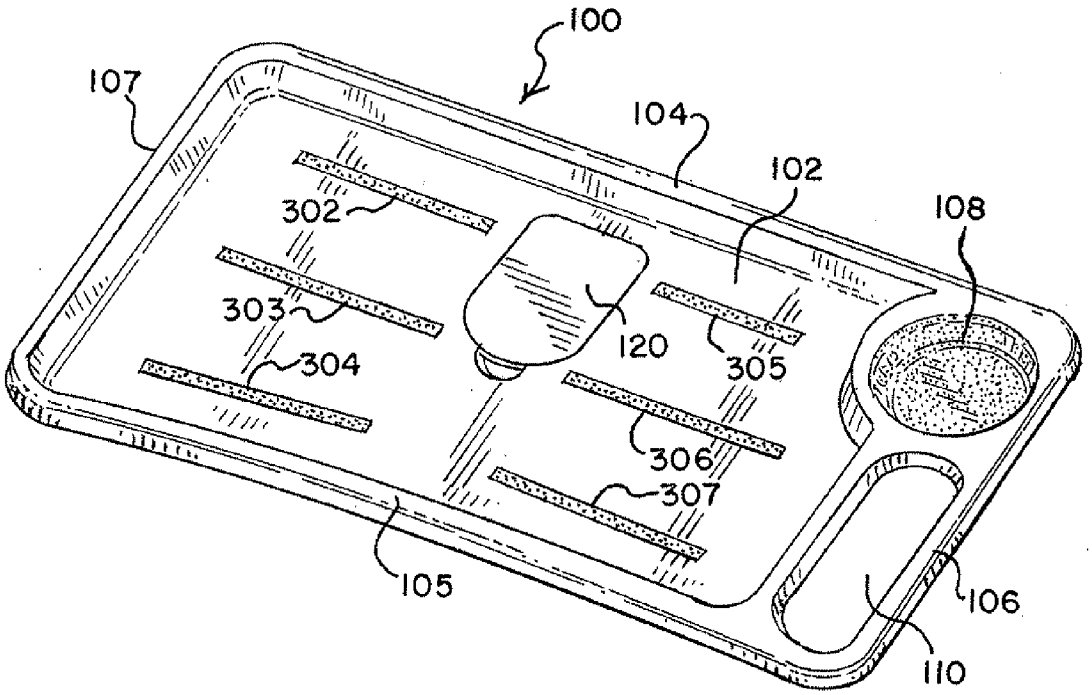


FIG. 1

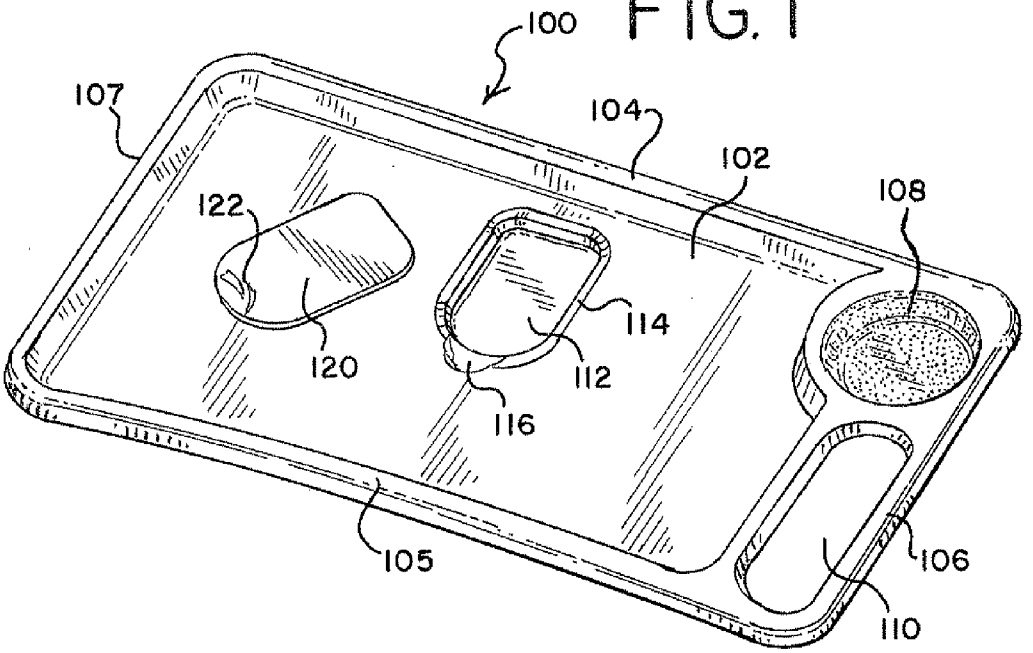
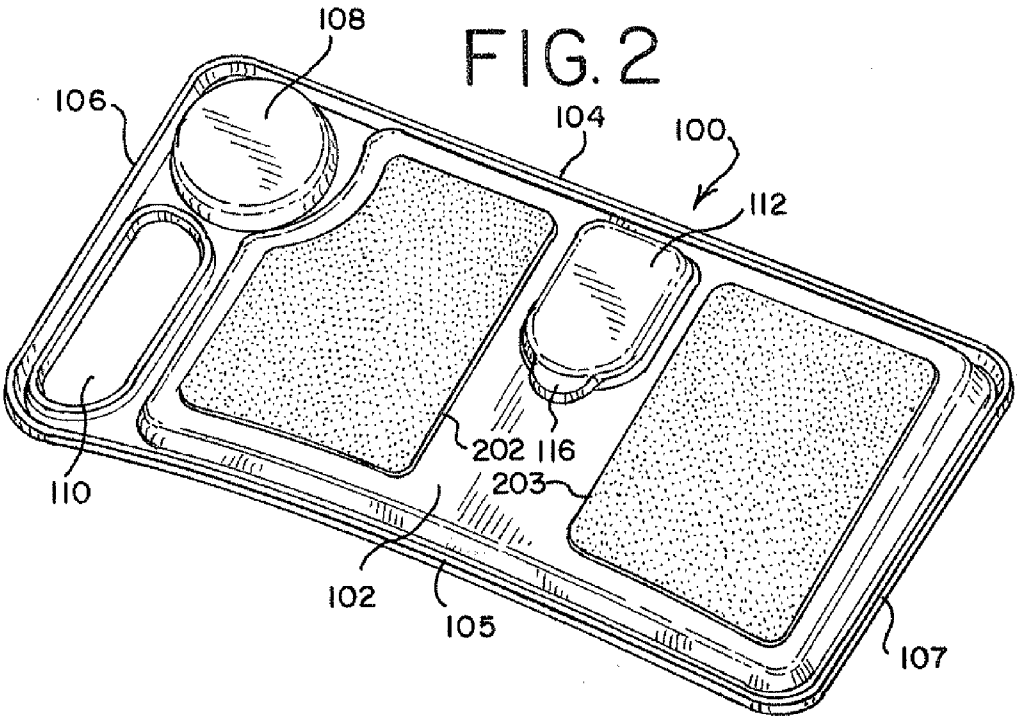

100
107
104
102
108
122
114
120
112
116
105
106
110

FIG. 2


108
106
104
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112
202
116
203
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102
105
107

FIG. 3

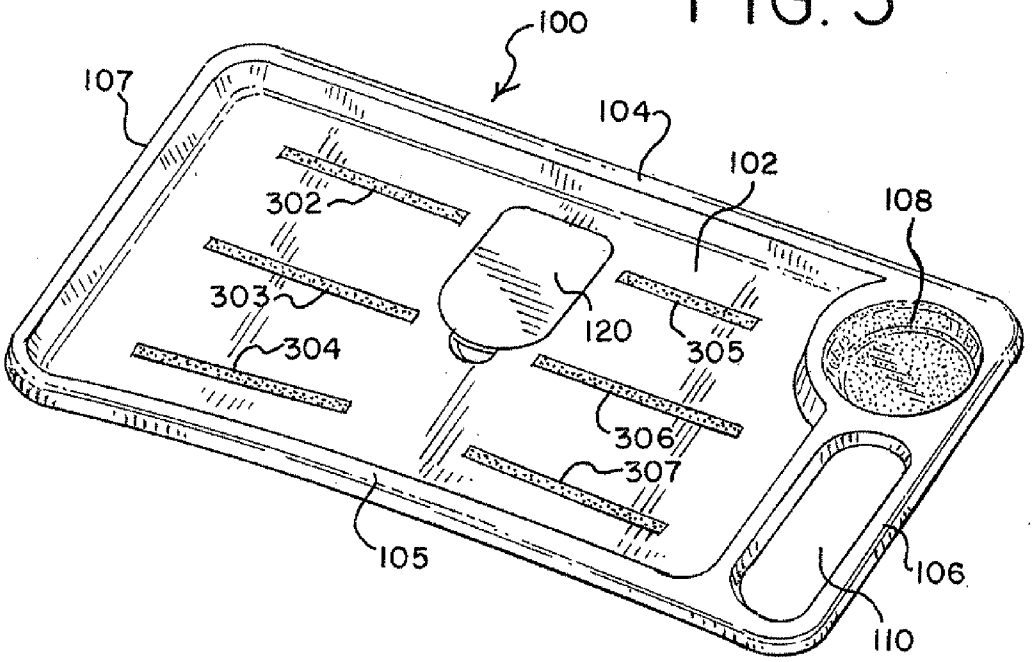


FIG. 4

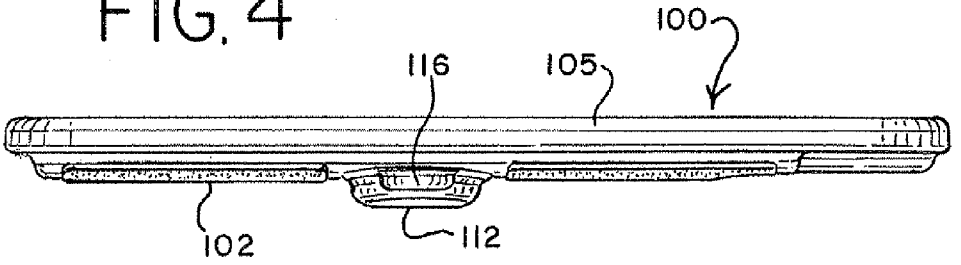
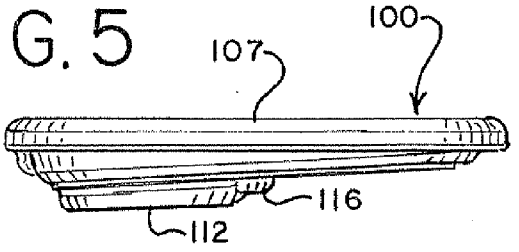


FIG. 5



AUTOMOTIVE TRAY

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This non-provisional patent application claims priority to U.S. provisional patent application Ser. No. 60/949,973, filed on Jul. 16, 2007.

FIELD OF THE INVENTION

[0002] The present invention relates generally to an automotive tray for use by a person in a motor vehicle such as an automobile, sport utility vehicle (SUV), truck or the like.

BACKGROUND OF THE INVENTION

[0003] Food trays are known to the prior art. Such trays are frequently used in cafeterias for the collection of selected food items from the available selection of food items. Usually, a user of a food tray will also add a beverage, eating utensils such as a spoon, knife and fork, and a napkin to the food tray.

[0004] Such food trays have a typically planar base with a slightly raised perimeter edge. Food trays are often made in smooth molds from fiberglass materials, which impart a smooth, slippery surface to the underside of the food tray. While these food trays are suitable for their intended purpose of resting on a table or the like, they have shortcomings in an automotive environment. For example, when the automobile is accelerating, stopping or turning, the tray can easily slide off of a user's lap thereby spilling the food items from the tray. Moreover, when in an automobile, it is usually not possible for a user to immediately dispose of food remnants, such as crumbs or the like. The user needs to wait until the automobile stops at a place where the food remnants can be properly disposed.

[0005] There has therefore been a need for an improved auto tray which resolves the shortcomings of prior art food trays, particularly in an automotive environment.

[0006] A general object of the present invention is therefore to provide an auto tray which is better suited for use in an automobile.

[0007] Another object of the present invention is to provide an auto tray which includes a crumb tray for temporarily storing small food remnants or other waste.

[0008] A further object of the present invention is to provide a crumb tray in a center portion of the auto tray such that the crumb tray also acts to center the auto tray between the user's thighs.

[0009] Yet another object of the present invention is to provide an auto tray which has a textured undersurface for better frictional engagement of the tray with the user's thighs or clothing.

[0010] A still further object of the present invention is to provide an enlarged aperture through a portion of the auto tray suitable for receiving a person's hand therein for more convenient grasping or handling of the tray.

SUMMARY OF THE INVENTION

[0011] The present invention is concerned with an improved automotive tray for use while eating within a motor vehicle and other uses. The automotive tray includes a generally planar base with a top surface, a bottom surface, a front sidewall, a rear sidewall, a right sidewall and a left sidewall, and portions of the bottom surface having a rough texture to provide frictional engagement when the tray is in use, thereby limiting movement of the tray.

[0012] In an embodiment, the bottom surface may have a rough texture, such as one or more frictional mats attached to the bottom surface of the automotive tray. A plurality of frictional strips may also be disposed on the top surface of the automotive tray, and the plurality of frictional strips may extend partially between the right sidewall and the left sidewall.

[0013] To better prevent spillage from the tray, the rear sidewall rises to a first height above the top surface of the generally planar base, and the front sidewall rises to a second height above the top surface of the generally planar base, with the second height being greater than the first height. For example, the second height may be about two times the first height.

[0014] In a further embodiment of the automotive tray, a crumb tray is disposed in a generally central location between the pair of side edges. The crumb tray is recessed below the top surface of the generally planar base, and a portion of the crumb tray extends below the bottom surface of the automotive tray. The portion of the crumb tray which extends below the bottom surface of the automotive tray assists in preventing lateral movement when the automotive tray is in use. A groove disposed about a perimeter of the crumb tray adjacent to the top surface of the automotive tray. A cover for the crumb tray has an edge sized to fit into the groove to cover the crumb tray when the crumb tray is not in use. A recess may be defined in the groove to provide an area for removing the cover by pressing upwardly against an underside of the cover. A tab extends downwardly from the cover for engaging a portion of the crumb tray to retain the cover over the crumb tray.

[0015] A generally cylindrical depression may be formed in the generally planar base for holding a beverage, or the like. The generally cylindrical depression is preferably disposed adjacent to the front sidewall and one of the right or left sidewalls.

[0016] An aperture is preferably provided through the generally planar base for grasping the automotive tray. The aperture may be disposed along the right sidewall or the left sidewall. For example, the aperture may be about 3 to 6 inches in length and about 1 to 2 inches in width.

BRIEF DESCRIPTION OF THE DRAWINGS

[0017] The invention, together with its objects and the advantages thereof, may best be understood by reference to the following description taken in conjunction with the accompanying drawings, in which like reference numerals identify like elements in the figures, and in which:

[0018] FIG. **1** is a perspective top view illustrating an auto tray in accordance with the present invention;

[0019] FIG. **2** is a perspective bottom view further illustrating the auto tray of FIG. **1** in accordance with the present invention;

[0020] FIG. **3** is a perspective top view further illustrating the auto tray of FIG. **1** with a cover installed over the crumb tray in accordance with the present invention;

[0021] FIG. **4** is an elevational front view further illustrating the auto tray of FIGS. **1-3** in accordance with the present invention; and

[0022] FIG. **5** is an elevational side view further illustrating the auto tray of FIGS. **1-4** in accordance with the present invention.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0023] It will be understood that the invention may be embodied in other specific forms without departing from the spirit thereof. The present examples and embodiments, therefore, are to be considered in all respects as illustrative and not restrictive, and the invention is not to be limited to the details given herein.

[0024] With reference to the drawing Figures, FIG. **1** illustrates a perspective top view of an auto tray, generally designated **100**, and FIG. **2** illustrates a perspective bottom view of the auto tray **100**. Auto tray **100** may be manufactured by molding, such as by known plastic injection molding techniques. For example, auto tray **100** may be injection molded using high-density polyethylene (HDPE) materials.

[0025] Auto tray has a generally flat or planar working surface **102**. Working surface **102** is recessed below sidewalls, including a front sidewall **104**, a back sidewall **105**, a right sidewall **106** and a left sidewall **107**. As seen in FIG. **2**, sidewalls **104-107** may have rolled-over edges which provide the top surfaces of the sidewalls **104-107** with a smoother effect. Back sidewall **105** may be curved inwardly to more gently contact a user's abdomen, as when the auto tray **100** is resting on the user's thighs while seated in an automobile.

[0026] It can be seen in FIG. **1** that the front sidewall **104** is preferably of a greater height than rear sidewall **105**, and that right and left sidewalls **106-107** gradually increase in height from the back sidewall **105** to the front sidewall **104**. Stated another way, the depth of the recessed working area **102** increases from the back sidewall **105** toward the front sidewall **104**. For example, rear sidewall **105** may be about ¼ to 1 inch in height and front sidewall **104** may be about ½ to 1½ inches in height. Right and left sidewalls **106-107** gradually increase in height from the back sidewall **105** to the front sidewall **104**. The reason or purpose that the front sidewall **104** is higher than the rear sidewall is to help control food or beverage spills from the auto tray onto the upholstery or carpet of the vehicle.

[0027] Right sidewall **106** is sufficiently wide between the back sidewall **105** and the front sidewall **104** to accommodate a beverage holder **108** and an elongated aperture **110**. Beverage holder **108** may be a cylindrical depression of a diameter suitable for holding a glass, cup, or the like. The bottom surface, and the sides if desired, of the beverage holder **108** may include an insert of rubber or the like to provide more friction to a cup or glass such that the cup or glass does not slip or slide while in beverage holder **108**, thereby assisting in avoiding spillage of a beverage. Other alternative structures will be apparent to those skilled in the art. For example, the bottom and/or sides of beverage holder **108** may be coated with a material which increases the coefficient of friction, or the bottom and/or sides of beverage holder **108** may be formed with rough surfaces when the auto tray **100** is formed by injection molding.

[0028] Aperture **110** in sidewall **106** is preferably of sufficient size to accommodate a user's hand, and more specifically, the four fingers of a user's hand such that auto tray **100** may be easily grasped about a portion of sidewall **106** by inserting a portion of a hand into aperture **108**. For example, aperture **110** may be about 3 to 6 inches in length and about 1 to 2 inches in width.

[0029] Disposed in a central location in the working surface **102** is a crumb tray **112**. Crumb tray **112** is useful for receiving crumbs and other small food remains when auto tray **100** is used for eating. Crumb tray **112** extends below the working surface **102**. Disposed about the perimeter of the crumb tray **112** is a groove **114**. The edges of a cover **120** for the crumb tray **112** fit into groove **114** when cover **120** is placed over crumb tray **112**. Cover **120** in its installed position over crumb tray **112** is shown in FIG. **3**. A recess **116** in the perimeter of crumb tray **112** may be used for removing cover **120**, as by inserting a finger into the recess **116** and lifting the underside of the cover **120** upwardly. As seen in FIG. **1**, the underside of cover **120** may have a downwardly depending tab **122** to engage a portion of crumb tray **112** when cover **120** is installed thereover, thereby retaining cover **120** in its installed position.

[0030] Preferably, crumb tray **112** extends below the generally planar underside of working surface **102**, as seen in FIGS. **2** and **4**. For example, crumb tray **112** may extend from 0.25 inches to 2 or more inches below the underside of working surface **102**. Thus, when auto tray **100** is in use, crumb tray **112** may be positioned between the user's thighs. In this position, crumb tray **112** assists in limiting any lateral movement of the auto tray which could result in spillage of any food or beverage on the auto tray. It will be further appreciated that the bottom portion of beverage holder **108** may also be extended to be disposed below the underside of working surface **102** to also assist in limiting lateral movement of the auto tray when the auto tray is positioned on a user's thighs.

[0031] If desired, auto tray **100** may also be equipped with frictional mats **202** and **203** may be applied to the underside of the auto tray with adhesives, such as on opposite sides of the crumb tray **112** as shown in FIG. **2**. For example, frictional mats **202-203** may have a rubber-like surface for resting upon the user's thighs to assist in preventing undesired movement of the auto tray while in use. To this end, the surfaces of frictional mats **202-203** may be textured to increase the frictional effect. Alternatively, if desired, those areas covered by frictional mats **202-203** may be provided with a textured surface during the injection molding of auto tray **100**.

[0032] As shown in FIG. **3**, the upper side of working surface **102** may also be provided with a plurality of frictional strips **302-307**, if so desired. Strips **302-307** will then assist in preventing slippage of items on working surface **102**, such as when the vehicle is acceleration, braking or turning. Alternatively, frictional strips **302-307** may be formed during the injection molding of the auto tray **100**.

[0033] The auto tray **100** thus assists in preventing undesired spills, such as to the upholstery and/or carpeting of a vehicle. The higher sidewalls also assist in preventing any spills from reaching the upholstery or carpeting. The auto tray may be about 12 by 18 inches for an adult. Smaller versions may be made for children.

[0034] Of course, the auto tray is suitable for other uses or activities besides holding food items while the user is eating in the vehicle. For example, a user may find the auto tray convenient for resting a book while reading in the vehicle. Similarly, the user may find the auto tray convenient for use with hobbies while traveling, such as knitting, sorting photos, or the like. The auto tray also provides a convenient writing or working surface while traveling.

[0035] While particular embodiments of the invention have been shown and described, it will be obvious to those skilled in the art that changes and modifications may be made therein without departing from the invention in its broader aspects.

1. An automotive tray comprising:

a generally planar base with a top surface, a bottom surface, a front sidewall, a rear sidewall, a right sidewall and a left sidewall; and

portions of said bottom surface having a rough texture to provide frictional engagement when the tray is in use, thereby limiting movement of the tray.

2. The automotive tray in accordance with claim **1**, wherein the portions of said bottom surface having a rough texture comprise one or more frictional mats attached to the bottom surface of the automotive tray.

3. The automotive tray in accordance with claim **1** further comprising:

a plurality of frictional strips disposed on the top surface of the automotive tray.

4. The automotive tray in accordance with claim **3** wherein said plurality of frictional strips extends partially between the right sidewall and the left sidewall.

5. The automotive tray in accordance with claim **1**,

said rear sidewall rising to a first height above the top surface of the generally planar base; and

said front sidewall rising to a second height above the top surface of the generally planar base, said second height being greater than said first height.

6. The automotive tray in accordance with claim **1**, wherein the second height is about two times the first height.

7. The automotive tray in accordance with claim **1** further comprising:

a crumb tray disposed in a generally central location between the pair of side edges.

8. The automotive tray in accordance with claim **6**, wherein the crumb tray is recessed below the top surface of the generally planar base, and a portion of the crumb tray extends below the bottom surface of the automotive tray.

9. The automotive tray in accordance with claim **8**, wherein the portion of the crumb tray which extends below the bottom surface of the automotive tray assists in preventing lateral movement when the automotive tray is in use.

10. The automotive tray in accordance with claim **8** further comprising;

a groove disposed about a perimeter of the crumb tray adjacent to the top surface of the automotive tray; and

a cover with an edge, the edge of cover sized to fit into the groove to cover the crumb tray when the crumb tray is not in use.

11. The automotive tray in accordance with claim **10**, further comprising:

a recess defined in the groove to provide an area for removing the cover by pressing upwardly against an underside of the cover.

12. The automotive tray in accordance with claim **1** further comprising:

a tab extending downwardly from said cover for engaging a portion of the crumb tray to retain the cover over the crumb tray.

13. The automotive tray in accordance with claim **1** further comprising a generally cylindrical depression formed in the generally planar base for holding a beverage.

14. The automotive tray in accordance with claim **13** wherein the generally cylindrical depression is disposed adjacent to the front sidewall and one of the right or left sidewalls.

15. The automotive tray in accordance with claim **1** further comprising an aperture through the generally planar base for grasping the automotive tray.

16. The automotive tray in accordance with claim **15** wherein the aperture is disposed along the right sidewall or the left sidewall.

17. The automotive tray in accordance with claim **15** wherein the aperture is about 3 to 6 inches in length and about 1 to 2 inches in width.

* * * * *