

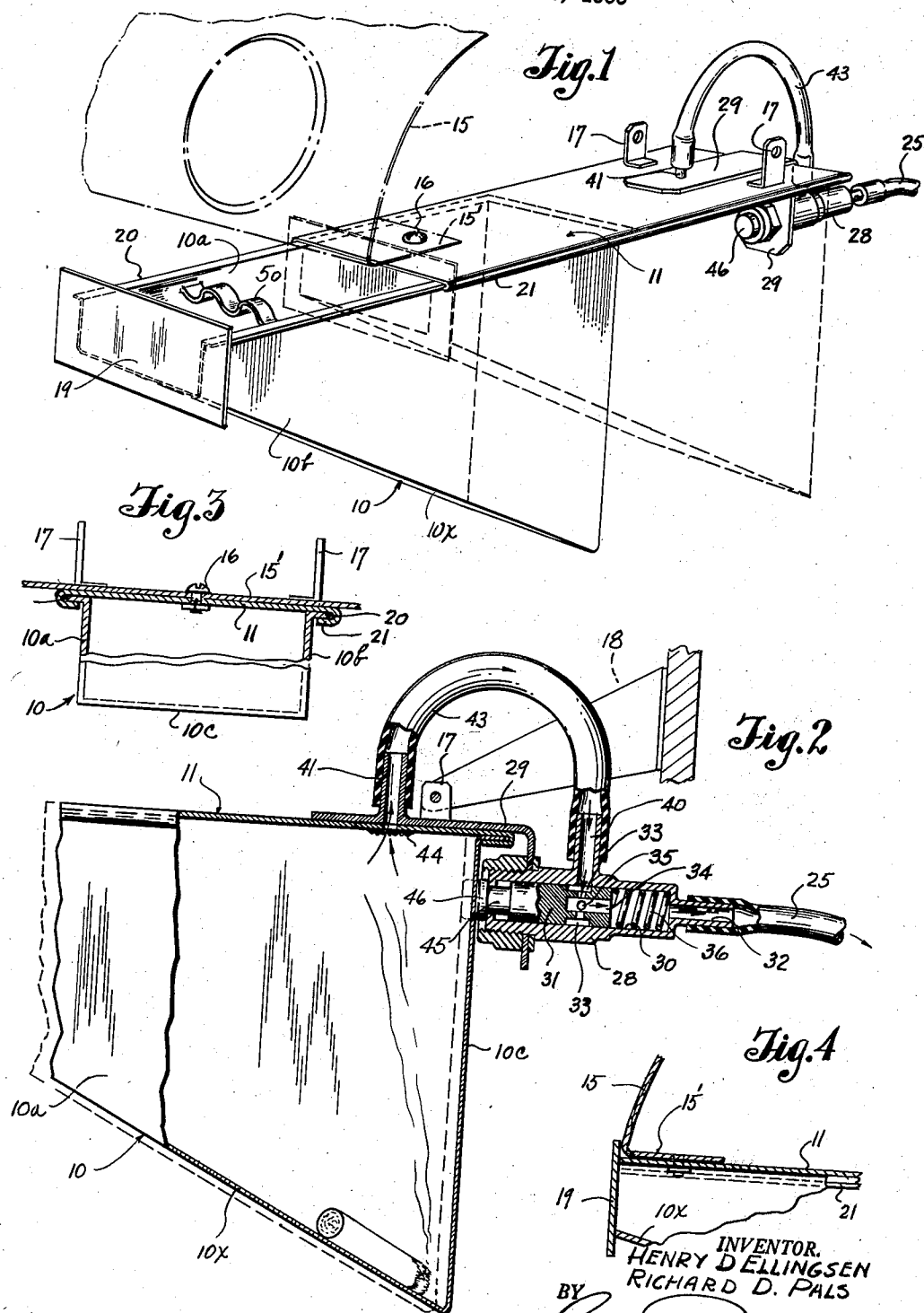
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CIGARETTE ASH TRAY

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CIGARETTE ASH TRAY

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1 Claim. (Cl. 206—19.5)

The invention relates to cigarette disposal and ash receptacles, and more particularly to improvements of devices of that character especially designed for use in automobiles, and the like, but not restricted thereto.

It is the principal object of this invention to provide a cigarette and ash disposal container designed for use in an automobile, or the like, and which container has a suction tube leading therefrom adapted for connection with a source of suction, such as a tube leading to the suction manifold of the automobile engine, to draw off the smoke and fumes from burning cigarettes contained in the receptacle.

It is a further object of the invention to provide a receptacle in the form of a tray that is slidable into and from a supporting or closure member and wherein the suction tube is equipped with a valve device that is automatically opened for the application of suction to the tray with its movement from an open position to a closed position, and is automatically closed when the tray is moved to an open position.

A further object of the invention is to provide a simple form of supporting and top closure member for the tray, which may be easily and readily attached to a support such as the lower edge of the instrument panel of present day automobiles or to other convenient parts, and into and from which closure member the ash receptacle can be slidably adjusted outwardly to an open position or inwardly to a closed position, and through which top closure the suction connection with the receptacle is made.

Still further objects and advantages of the invention reside in the details of construction of the tray and its closure, in their combination, and in the means providing the suction connection and method of opening and closing the suction tube valve.

In accomplishing these and other objects of the invention, we have provided the improved details of construction, the preferred forms of which are illustrated in the accompanying drawings, wherein:

Fig. 1 is a perspective view of the ash and cigarette disposal device of the present invention, showing, in full lines, the container portion as adjusted to an open position in respect to its supporting and closure member and in dotted lines, showing it in its closed position.

Fig. 2 is a sectional detail, taken in a vertical plane, showing the container or tray in its closed position, and the suction valve as retained open by the inner end wall of the tray.

Fig. 3 is a cross-section taken on line 3—3 in Fig. 1.

Fig. 4 is a vertical, sectional detail of the front end portion of the tray and its support.

Referring more in detail to the drawings:

The present ash and cigarette butt receptacle comprises a sheet metal tray designated in its entirety by numeral 10, fitted with a top closure plate designated in its entirety by numeral 11. It is intended that such trays be adapted primarily for use in automobiles of present day kinds, and that they be supported in an easily accessible position of use and that provision be made for the

drawing off therefrom of any fumes or smoke of burning or smoldering cigarettes contained therein. It has been found most practical and convenient to mount such a tray on and immediately below the instrument panel of the automobile in a position at which it can be conveniently reached and moved in or out between open and closed positions by the vehicle driver, or other occupant of the drivers or front seat.

In Fig. 1 we have shown the top closure plate 11 to be flat and rectangular, and also to be horizontally disposed with its forward end portion placed flatly against a horizontally inturned flange 15' that is formed along the lower edge of the vehicles instrument panel, shown in dot and dash lines in Fig. 1 and designated generally by numeral 15. The attachment of the closure plate 11 at this end is by means of a screw bolt 16 applied through the flange 15' and plate as shown best in Fig. 3.

The plate 11 is also equipped at opposite side of its inner end portion with upstanding ears, 17—17 which are made suitable, for attachment to other supporting means, such as the dashboard bracket indicated in Fig. 2 at 18, to give additional rigidity and support to the plate.

The tray 10 has vertically disposed and parallel opposite sidewalls 10a and 10b, a vertical inner end wall 10c, a bottom wall 10x that is inclined downwardly to the lower edge of the end wall 10c, and at the forward end, which is nearest the seat occupants and which would be most easily accessible to the vehicle driver, the tray 10 is equipped with a vertical closure plate 19. This has its edge portions extended beyond the top, lower and side edges of the tray to provide hand gripping portions whereby the tray can be easily moved between its closed and open positions.

For the sliding movement and support of the tray, it is equipped along the top edges of its opposite sidewalls with out-turned flanges 20—20, and the opposite longitudinal side edges of the top or closure plate 11 are formed with downwardly and inwardly turned flanges, 21—21, providing inwardly opening channels in which the outturned flanges 20—20 of the tray are slidably contained. The closing movement of the tray 10 is limited by the end plate 19 contacting the forward edge of the top plate 11 as in Fig. 4. When the tray is in an open position, as shown in Fig. 1, it can receive therein ashes and cigarette or cigar butts which, because of the forward and downward inclination of the bottom, 10x, of the tray will slide to the lower end.

To withdraw smoke and fumes of burning butts from the closed tray, we provide a suction tube 25 which may lead from a connection with the suction manifold of the vehicle engine or other source of suction not herein shown. This tube connects as shown in Fig. 2, with one end of a valve housing 28 which is rigidly supported by means of a bracket 29, from the top plate 11. The valve housing 28 is formed axially with a cylindrical valve chamber 30 in which a piston type valve member 31 is reciprocally fitted. The valve chamber 30 is in direct communication at one end with the suction tube 25 through the tube attaching nipple 32 that extends from the housing. The valve member 31 is formed with an encircling channel 33, and with an axial bore 34 having ports 35 opening therefrom into the channel. The open end of the bore 34 is in direct communication with the suction tube 25. A coiled spring 36 is disposed under compression between the bored end surface of the valve member 31 and the chamber end surface from which the nipple 32 extends and operates to yieldingly urge the valve member toward the other end of the housing, that is, toward its closed position.

On the top of the valve housing 28 is a tubular nipple 40 which opens at its inner end into the valve chamber

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and is controlled by the valve member 31. Likewise formed on the bracket 29 is an upwardly directed tubular nipple 41, the passage of which opens through the bracket and the top plate 11 as seen in Fig. 2. A short rubber tube 43 is applied at its opposite ends over the nipples 40 and 41, thus to provide a connection for an application of suction through the tube 25 to the ash tray under control of the valve member 31.

The valve member 31 is formed on that end which is opposite the bored end with a stem 45 that extends from that end of the valve housing. This stem is equipped at its end with a head 46 which is adapted to engage the end cap of the valve housing through which it extends to limit its inward movement into the valve housing. When the ash receptacle is fully closed, its inner end wall engages the head 46 of the stem 45 and retains it in an open position as in Fig. 2 against the pressure of spring 36.

Reference numeral 44 designates a screen which is secured over the inner end of the passage through the nipple 41. The screen prevents ash and other matter from being drawn out through the passage and also the screen reduces the opening and serves as a metering means to reduce the vacuumatic action. In lieu of screen, a smaller hole or opening into the receptacle would produce substantially the same result.

Assuming the various parts to be made and assembled as shown in Fig. 2, it will be understood that when the tray 10 is adjusted to an open position, as in Fig. 1, to receive ashes, the valve member 31 is released and will be moved forwardly in the valve housing by the spring 36 to a position at which it closes over the suction connection with the nipple 40. However, when the tray is again pushed to a fully closed position as in Fig. 2, its end wall 10c will engage the head 46 of the stem of the valve member 31 and shift the valve against the pressure of spring 36 to a position at which the channel 33 communicates with the passage of nipple 40 and thus completes the suction connection to the tray through the hose connection 43. When this connection is made, smoke or fumes from ashes or burning butts will be sucked from the container and not allowed to pass into the vehicle.

Such trays may be equipped, if it is so desired, with a corrugated cross strip as shown at 50 as a support on which a burning cigarette can be laid.

It is understood that various ways or means other than herein illustrated might be employed for the mounting of the valve housing, or the mounting of the cover plate 11, and it is not desired that the following claims shall be restricted to the means herein shown. The novelty of the present invention is thought to reside in the present type of suction connection, and a valve for that connection that is operated automatically by the positioning of the tray, to apply suction to the tray only when it is in a fully closed position.

Such trays are easily withdrawn from their supports for cleaning and can be easily replaced therein. When applied, as here shown, and then drawn to an open position, they are conveniently accessible to persons occupying the front seat of the vehicle.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

An ash tray, a rectangular cover plate applied thereto, flanges on the sides of said tray and flanges on the sides of said cover which cooperatively provide a sliding connection that permits movement of the tray between covered and uncovered positions, a bracket fixed to the outer surface of said cover plate, a suction valve means mounted by said bracket and comprising a valve housing disposed in the line of movement of the tray to its closed position, said valve housing being formed lengthwise with a cylindrical chamber with means at one end for its connection with a source of suction, a suction connection leading laterally therefrom and opening through said cover plate into open communication with the tray when in covered position, a valve piston reciprocally contained in the cylindrical chamber, a spring contained in the valve housing and acting against said piston to urge it to its closed position, said piston having a stem extended therefrom and directly engageable by the tray as it is moved from an open position to its fully closed position to open the valve for an application of suction to the tray.

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