United States Patent

[11] 3,601,464

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[21] Appl. No. **841,471**
[22] Filed **July 14, 1969**
[45] Patented **Aug. 24, 1971**

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[54] **ASH RECEPTACLE FOR AUTOMOBILES**
7 Claims, 4 Drawing Figs.

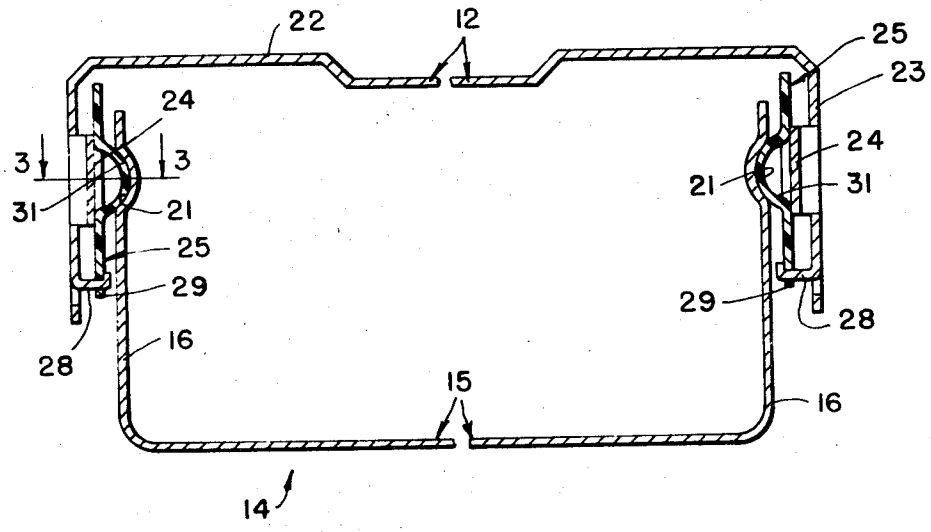
[52] **U.S. Cl.** ..... **312/246,** 312/341, 206/19.5 E
[51] **Int. Cl.** **A47b 67/02,** A47f 5/08, B60n 3/08
[50] **Field of Search** ..... 312/246, 341; 206/19.5 E

[56] **References Cited**
UNITED STATES PATENTS

Re. 21,080	5/1939	De Boer	312/246
2,334,925	11/1943	Hendricks	312/246
2,944,865	7/1960	Hammesfahr	312/341
3,045,813	7/1962	Middleston	206/19.5 F
3,460,876	8/1969	De Boer	312/246
3,466,107	9/1969	Blake	312/246

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ABSTRACT: The receptacle includes a fixed, stamped sheet metal retaining member of inverted channel section, each of whose depending flanges are slitted and inwardly offset to provide integral backing formations for a rigid nonmetallic frictional guide and skid plate. Each plate is fixedly applied by a screw or the like to the inner surface of a retainer flange, in outward abutment with the latter's backing formations. The skid plates are preferably of a thermosetting plastic composition, and each carriers a pair of horizontally aligned, integrally formed skid lugs of quasi-circular convex outline. Such lugs mate slidingly in longitudinal guideway grooves in the sides of the receptacles's ash box.



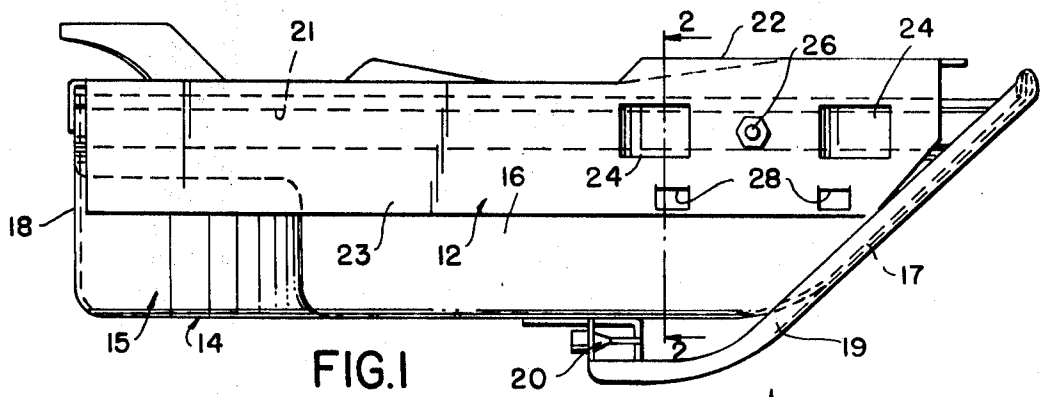


FIG.1

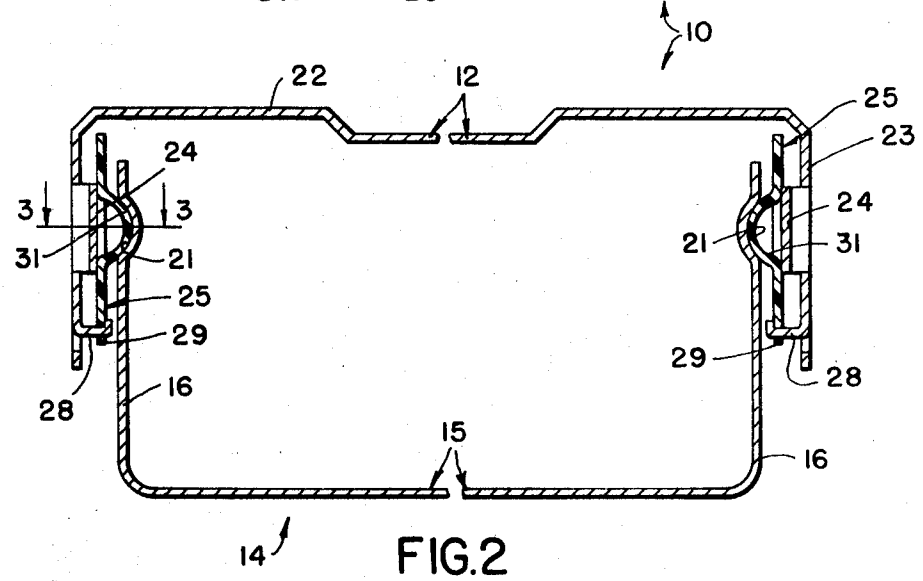


FIG.2

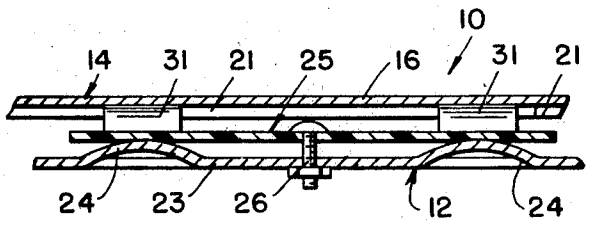


FIG.3

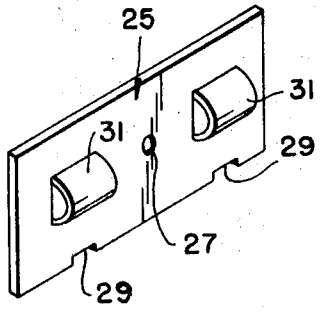


FIG.4

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ASH RECEPTACLE FOR AUTOMOBILES

CROSS-REFERENCE TO RELATED APPLICATIONS

My copending application, Ser. No. 841,470, filed July 14, 1969, discloses and claims a generally similar type of ash receptacle, in which the nonmetallic frictional guide plates, as mounted flush against flat depending flanges of the fixed retainer, present inwardly slitted and struck, flexible skid formations slidably mating in the guide grooves of the ash box. My copending application, Ser. No. 841,472 filed July 14, 1969, also relates to a specially guided sliding box and closure action, but in a reversed type of structure in which the ash box is fixed in relation to the automobile's mounting structure, having a cover which is slidingly retractable from and returnable over the box through the agency of the contemplated plastic guide means.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The receptacle structure of the invention finds application in automotive installations in which it is highly desirable to maintain a very low production cost of the receptacle unit, yet still provide for a smooth, stable, rattleproof and noiseless operation.

2. Description of the Prior Art

The most pertinent prior art patents dealing with the improvement and known to me are Peterson 2,793,092 of May 21, 1957, and Hammesfahr 2,944,865 of July 12, 1960.

SUMMARY OF THE INVENTION

The improved automotive ash receptacle is of a very simple and inexpensive nature, and one in which no roller or other moving parts are employed, the sliding receptacle being fully withdrawn for emptying and replaced without requiring any manual unlatching operation or the like. Guiding action is exerted on the sides of the box member by skids formed integrally in a pair of rigid nonmetallic, preferably thermosetting plastic plates. Each such plate is backed up by a pair of lug formations struck inwardly from each of the depending flanges of the fixed retainer mount, to which flanges the plastic skid plates are screwed or otherwise fixedly secured.

Thus, the skid formations may slidingly engage with appreciable frictional force in mating grooves of the movable receptacle or box member, under an inward force represented by the inherent flexure of the depending flanges of the mounting or retainer member. The sliding action of the box is opposed only sufficiently to obtain stability and a nonrattling, noiseless action, permitting the receptacle to remain in fixed relation to its mount in fully or partially withdrawn positions, or as fully closed into the space behind the dashboard.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side elevational view of the receptacle structure, showing the ash receptacle or box member in a fully closed position;

FIG. 2 is a view in vertical section on line 2—2 of FIG. 1;

FIG. 3 is a fragmentary view in enlarged scale and horizontal section on line 3—3 of FIG. 2; and

FIG. 4 is a perspective view of a plastic skid plate component of the receptacle structure.

DESCRIPTION OF A PREFERRED EMBODIMENT

The receptacle of the invention, generally designated by the reference numeral **10**, comprises a fixed, horizontally elongated retainer or mounting unit or subassembly **12**, and an ash box, tray or receptacle member **14** guided for sliding retracting and return movements by the mount **12**. The latter is fixedly mounted in the usual fashion by appropriate screw or like means (not shown) behind the automobile's dashboard.

Receptacle member **14**, as best shown in FIGS. **1** and **3**, comprises a fairly deep drawn sheet metal box or body

member **15** providing upright sidewalls **16**, a front wall **17** and a rear wall **18**, all integrally connected at rounded bottom corners to constitute a rigid receptacle entity. As depicted in FIG. **1**, front receptacle wall **17** inclines mildly downwardly and to the rear, in conformity with the outline of the dash panel (not shown) bordering the same; and wall **17** is preferably covered by a mating finish panel **19** appropriately secured rigidly thereto, as through the agency of a suitable bracket fixed to the bottom of box member **15**. The latter may carry a cushioned bumper **20**, not germane to the invention; and panel **19** has suitable external garnishing harmonizing with the appearance of the dashboard area surrounding it.

A front-to-rear-extending, arcuate horizontal groove or guideway **21** is formed in each of the receptacle sidewalls **16**, facing convexly to the interior of receptacle **14**, these ways or grooves being shown as located adjacent the top of the respective walls **16**, although this location is subject to change.

The retainer or mounting member **12** is a sheet metal stamping in the form of an inverted rectangular channel, including a horizontal top panel **22** having provision (not shown) for its fixed mounting behind the dashboard, and 90 depending side flanges or walls **23**. As best shown in FIGS. **2** and **3**, each of the retainer flanges **23** is slitted and stamped about midway of its height to provide a pair of horizontally and front-to-rearwardly aligned arcuate offsets or embossed lug formations **24** extending inwardly of the flange **23**, for a purpose to be described.

The structure of retainer member **12** is completed by a pair of rectangular and nonmetallic, frictional skid or guide plates **25**, one being fixed on each of the side flanges **23**. A single machine screw and nut fastening **26** is applied through a center hole **27** (FIG. **4**) of each plate **25**, engaging in a hole in the adjacent mount flange **23** located between the latter's embossed formations **24**, thus to lock the plate **25** in place on the flange. This action is supplemented by a pair of horizontally spaced ears or tabs **28** struck inwardly of each flange **23**, which tabs take into small spaced bottom slots **29** of guide and skid plate **25**. This affords locks at three spaced points, as shown in FIG. **1**, i.e., at tabs **28** and screw unit **26**, to prevent any tendency of plates **25** to cant in relation to the mount's flanges **23**. Thus, the two skid plates are rigidly fastened to and within said flanges by means very simple of assembly.

The plates **25** are fabricated of any suitable thermosetting plastic sheet material, of which there are many types available on the market, and which is capable of taking a rigid set upon being die-formed to provide a pair of horizontally aligned, inwardly convexly offset arcuate guide or skid formations **31**. These are of quasi-circular outline, as best shown in FIGS. **3** and **4**, and they are so located on the plate **25**, with the latter fastened to flange **23** in the manner described, as to be directly sustained outwardly by the respective slitted and debossed backing formations **24**, the inward convexity of which is at 90° to that of the skid formations **31**.

In the assembly of the receptacle structure **10**, with the retainer or mounting member **12** rigidly affixed in place behind the dashboard, the guide grooves or ways **21** of receptacle member **14** are lined up rearwardly with the plastic skid formations **31** at the elevation of the latter on skid plates **25**, whereupon the receptacle member is slid rearwardly into its closed position, with its forward finish wall panel **19** flush with the surrounding area of the dashboard. The size, shape and position of the skid formations **31** is such that the retainer member flanges **23** are placed under outward spring flexure, the skids **31** thus being biased to exert a continuing significant degree of frictional restraining action on the movements of receptacle member **14**, notwithstanding the rigid nature of the skid plates **25**. Yet the restraint is not sufficiently great to interfere with a free sliding retractile and return action of the receptacle member. A sound deadened, rattle-free operation is ensured, and the ash box may be withdrawn free of its mount for emptying and replacement, without entailing any manipulation by the user other than the application of the sliding force.

What I claim is:

1. An ash receptacle comprising a fixed mounting member having a pair of vertically disposed flanges at opposite sides thereof, a receptacle member having a pair of vertically disposed sidewalls movable in a longitudinal sliding path on and relative to said mounting member between open and closed positions of said receptacle member, a pair of generally flat and vertically disposed skid plates of a rigid nonmetallic material substantially spaced from said flanges, one skid plate being disposed adjacent to and inside of each of said flanges of said mounting member, each skid plate having at least one integral and flexible skid formation projecting laterally therefrom in said path, each of said flanges of said fixed member having at least one integral and resilient lug formation projecting laterally therefrom towards said receptacle member in backing engagement with the adjacent skid plate, the sidewalls of said receptacle member each having a guide groove therein facing the skid formation on the adjacent skid plate, each guide groove being matingly engaged by the corresponding skid formation to slidingly guide said receptacle member in its longitudinal sliding path, each lug formation resiliently urging the skid formation on the adjacent skid plate into the corresponding guide groove.

2. The ash receptacle structure of claim 1, in which said skid and lug formations opposite each sidewall of said receptacle member are die-shaped in corresponding convex arcuate outlines from the corresponding skid plate and flange, being in register with one another transversely of said path.

3. The ash receptacle structure of claim 2, in which there are a pair of skid formations on each skid plate and a pair of lug formations on each flange, the lug formations engaging the adjacent skid plate in transverse register with the respective skid formations.

4. The ash receptacle structure of claim 3, in which the directions of convexity of the respective skid and lug formations are at 90° to one another.

5. The ash receptacle structure of claim 10 in which the directions of convexity of the respective skid and lug formations are at 90° to one another.

6. The ash receptacle structure defined in claim 1 wherein the lower edge of each skid plate is provided with a pair of longitudinally spaced slots, and each of said flanges is provided with a pair of integral longitudinally spaced ears projecting laterally therefrom and extending through the slots in the adjacent skid plate for locating same relative to the adjacent flange.

7. The ash receptacle structure defined in claim 6 wherein a fastening element extends through each skid plate and flange to supplement the locating action of said ears and slots.

UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,601,464 Dated August 24, 1971

Inventor(s) Henry DeBoer

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

In the Abstract, line 9 (application page 1, line 9) "carriers" should be --carries--.

Column 2, line 21, "90" should be --90°-- (application, page 5, line 4).

Column 4, line 11 (Claim 5), "10" should be --1--. (application, Claim 5, line 1).

Signed and sealed this 18th day of April 1972.

(SEAL)
Attest:

EDWARD M.FLETCHER,JR.
Attesting Officer

ROBERT GOTTSCHALK
Commissioner of Patents

ORM PO-1050 (10-69)

USCOMM-DC 60376-P69
* U.S. GOVERNMENT PRINTING OFFICE : 1969 O—366-334