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Gili

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[54] **AUTOMATIC ASHTRAY**

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[52] **U.S. Cl.**..... **220/20.5,** 131/242, 220/4 D

[51] **Int. Cl.** **A24f 19/00,** B65d 7/00, B65d 1/24

[58] **Field of Search** .... 220/20.5, 4 D, 29, 25, 55 C, 220/55 E; 131/231, 242; 312/311; 232/43.1; 251/349

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[57] **ABSTRACT**

A mechanical ashtray including a refuse receptacle and a lid; when the lid is closed, it supports ashes and when it is open, it permits the ashes to disappear into the receptacle; the lid includes two pivotally supported lid elements which pivot from closed to open position; the ashtray comprises a base receptacle and an upper body interlocked with the base by a notch and pin interconnection; a support element carried by the base receptacle supports the lid elements in the closed position and permits the lid elements to pivot open when the upper body is pulled away from the base receptacle.

9 Claims, 4 Drawing Figures

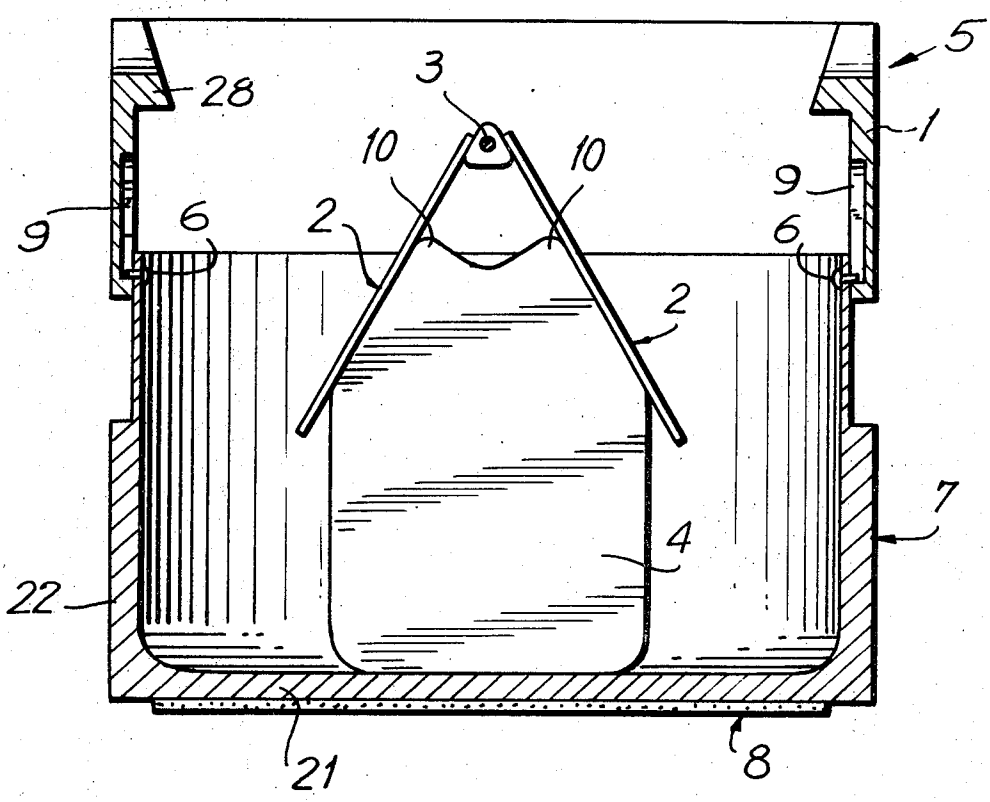


FIG. 1

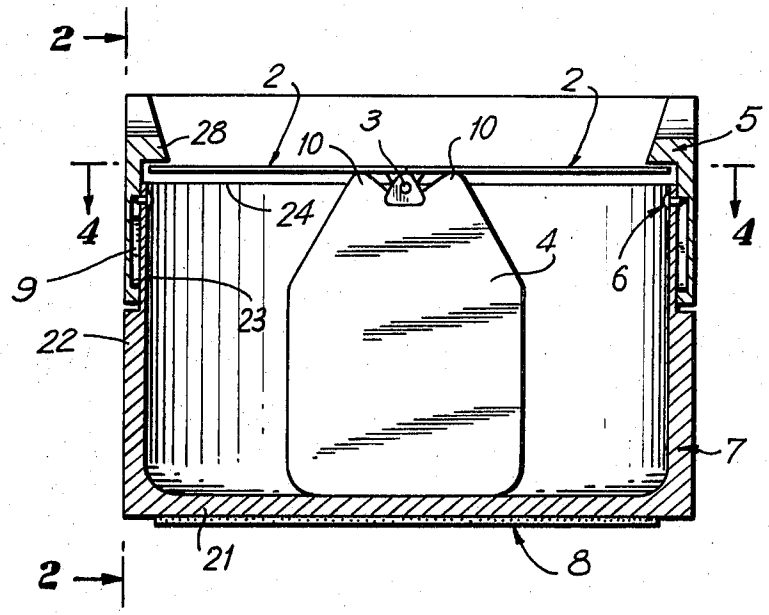


FIG. 2

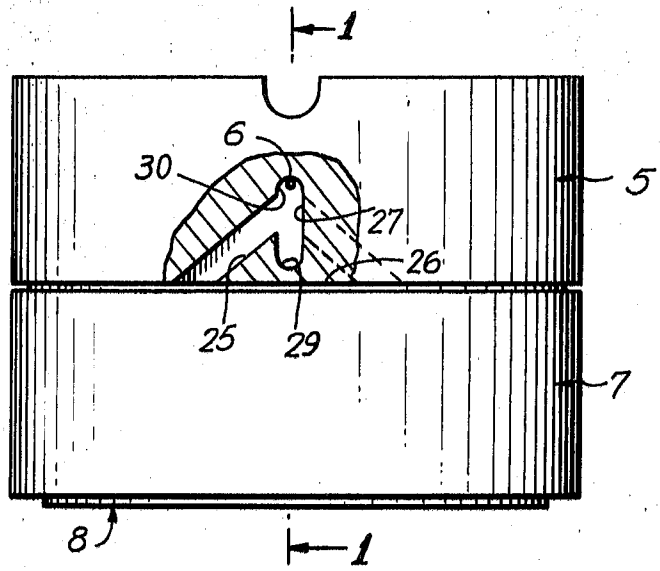


FIG. 3

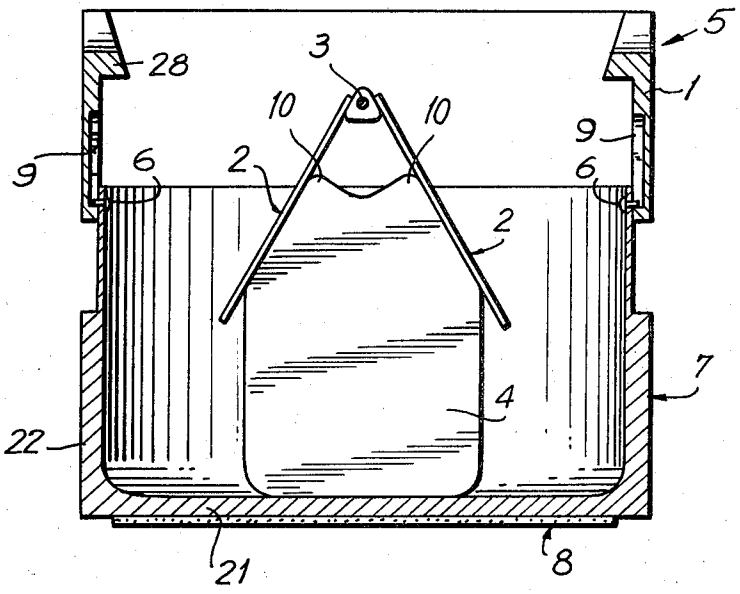
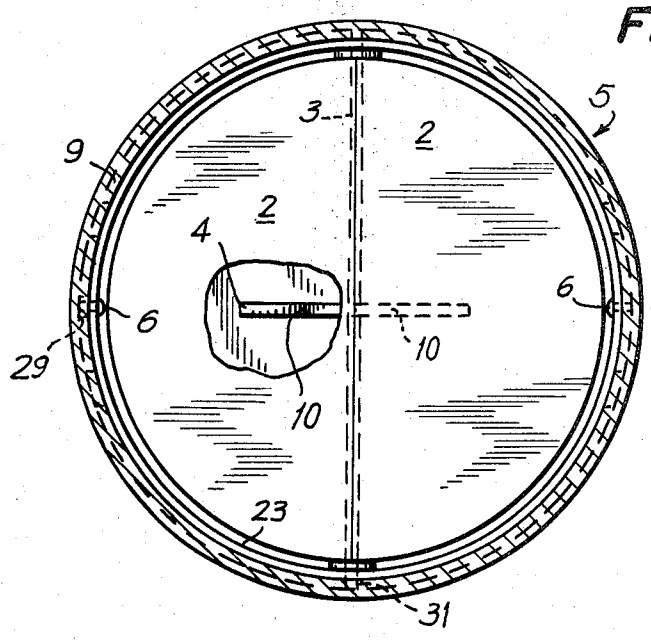


FIG. 4



AUTOMATIC ASHTRAY

The present invention relates to a manually operated mechanical ashtray, wherein stubs, ashes, or the like are deposited on the lid of the ashtray and through a mechanical operation, the lid opens and the ashes fall into the receptacle. The lid in the present invention includes lid elements which pivot open and closed about a horizontal axis.

An ashtray incorporating the present invention includes a lower receptacle with upstanding substantially cylindrical walls. It also includes an upper substantially cylindrical body portion, which is open at both its upper and lower ends, and which has a depending sleeve that at least in part laps over the walls of the receptacle beneath. It has one, and preferably a plurality of lid elements, each of which comprises a plate that is carried on a generally horizontal shaft supported in the upper body sleeve. Each lid element pivots on its shaft from a horizontal closed position which holds the ash, et al., to a tilted position which permits the ash to drop into the receptacle beneath. In a preferred embodiment, there are two lid elements and both are carried on a common shaft. If the cylindrical body of the ashtray is a circular cylinder, each of the two lid elements is semicircular in shape.

A lid element support device is carried by the lower receptacle and contacts the lid elements to support them such that when the receptacle and body are snugly together, the lid elements are closed. When the body is drawn away from the receptacle beneath, the depending sleeve and the lid element support shafts carried by the sleeve move away from the receptacle beneath. However, the lid element support device carried by the receptacle remains stationary, whereby the lid elements pivot from their closed toward their open position.

One of the receptacle or the upper body sleeve is provided with at least one stud and the other of these elements is provided with a corresponding number of notches, each for receiving a respective one of the studs. By this means, the upper body and receptacle are interconnected such that they would not normally separate.

In a preferred embodiment, each notch in the upper body sleeve or receptacle includes a sloped portion which opens at that end of the lower receptacle or upper body sleeve which faces toward the other of those elements. Through rotation of the upper body with respect to the receptacle, each stud can be moved through its notch either to disengage or to reengage the upper body and the receptacle. The upper body and receptacle beneath are periodically separated to permit cleaning of the ashtray.

Each notch is adapted to provide a clearance space for its stud, whereby the upper body can shift toward and away from the receptacle beneath without interference from the studs. In the preferred embodiment, each notch includes a vertical leg that intersects the notch sloping leg. Each vertical leg is of a length to provide sufficient clearance such that each stud can shift through that leg of the notch and not interfere with that normal movement of the upper body with respect to the receptacle that permits opening and closing of the lid. The length of the vertical leg of the notch determines the extent to which the upper body and receptacle can be shifted with respect to each other and thereby determines how much the lid elements can be opened.

Accordingly, it is the primary object of the present invention to provide an improved mechanical ashtray.

It is another object of the present invention to provide such an ashtray which employs a simply pivoted ashtray lid arrangement.

These and other objects of the present invention will become apparent from the following description of the accompanying drawings, in which:

FIG. 1 is a vertical cross-sectional view along the line 2—2 of FIG. 1 through the ashtray of the invention when the ashtray is in a closed condition;

FIG. 2 is a side elevation view in the direction of arrows 2 of the ashtray in FIG. 1, partially broken away to show some of the ashtray elements;

FIG. 3 is the same type of view as FIG. 1 with the ashtray in an open condition; and

FIG. 4 is a top view of the ashtray of FIG. 1.

The ashtray in accordance with the invention includes lower receptacle 7. Receptacle 7 is closed at its base 21 to contain ashes, stubs and other refuse. Beneath base 21 is a layer 8 of protective material, e.g. felt, to prevent the ashtray from scratching any surface upon which it is placed. The walls 22 of lower receptacle 7 define a circular cylinder, whereby the ashtray is circularly cylindrical.

Walls 22 are recessed at 23 near their upper end 24 and extending about the entire exterior of receptacle 7 for receiving sleeve 1 to be described.

Passing through the upper recessed portions 23 of walls 22 are a pair of outwardly extending, diametrically opposedly positioned studs 6 for interengaging with notches 9 to be described.

Upper body 5 is correspondingly cylindrically shaped to receptacle 7 and both the upper and lower ends of body 5 are open.

Sleeve 1, formed of plastic material or the like, depends from the perimeter of upper body 5, overlaps recessed portions 23 of receptacle walls 22 and has a diameter such that sleeve 1 fits into the perimetrical recess 23 of receptacle 7, thereby giving the exterior of the ashtray a smooth external appearance of uniform outside diameter, as suggested in FIG. 2. The overlapping by sleeve 1 would be precluded by projecting studs 6. However, sleeve 1 is provided with correspondingly diametrically opposedly positioned generally T-shaped notches 9, through each of which pass one of studs 6. Notches 9 do not pass completely through the sleeve as this would mar the appearance of the exterior of the ashtray.

Interconnection of lower receptacle 7 and upper body 5 is accomplished by moving stud 6 through obliquely slanted portion 25 of notch 9 from lower free end 26 of sleeve 1 into vertical leg 27 of notch 9. Such interconnection requires relative rotation of body 5 with respect to receptacle 7. Separation of these two elements to facilitate cleaning, or the like, is accomplished by opposite rotation of the body and receptacle, so that studs 6 pass out through the respective oblique portions 25 of notches 9.

The respective vertical legs 27 of notches 9 define the extent to which body 5 may shift vertically with respect to receptacle 7 when these two elements are interconnected with each other, thereby defining the limits of movement of the ashtray lid elements 2 to be described.

Sleeve 1 also includes diametrically opposed openings 31 into which lid element support shaft 3 is fitted, whereby vertical shifting of body 5 and sleeve 1 with respect to receptacle 7 correspondingly vertically shifts shaft 3.

Semicircular ashtray lid elements 2 fill and close the opening in body 5 and are freely pivotable with and are carried by shaft 3. Under the influence of gravity, elements 2 will normally shift from a generally horizontal position (FIG. 1) to a downwardly tilted position (FIG. 3). Ashtray lid elements 2 are maintained in a closed position, illustrated as being substantially horizontal and substantially in sealing engagement with the overhanging shelf elements 28 of body 5, by means of upstanding projections 10 on ashtray lid support element 4, which element is carried by receptacle 7. The height of projections 10 is selected such that with body 5 at the lowermost position permitted by the shape of vertical leg 27 of notch 9 and the near interengagement of stud 6 with upper end 30 of the vertical leg, projections 10 cause lid elements 2 to be substantially horizontal.

Projections 10 also engage lid elements 2 sufficiently away from their pivot shaft 3 so that upon lifting of body 5 and thereby of shaft 3 with respect to receptacle 7, so that shaft 3 is higher than projections 10, the semicircular lid elements 2, which always rest on projections 10, pivot to a tilted position, and the ashes, stubs and other refuse slide off lid elements 2 and into receptacle 7. Projections 10 engage lid elements 2 sufficiently outward from shaft 3 so that even upon maximum shifting of body 5 away from receptacle 7, as defined by the interengagement of studs 6 with lower end 29 of vertical notch 27, lid elements 2 do not assume a vertical position, which might hamper reclosing of the lid elements and might shift the lid elements more than is necessary to dump the ashes and stubs into the receptacle.

It is apparent from the foregoing that the normally closed lid elements 2 of FIG. 1 hold ashes, stubs, et al. Upon raising of body 5, lid elements 2 pivot as in FIG. 3 and cause the ashes and stubs to fall off the lid elements into the receptacle.

Although the invention has been described with respect to its preferred embodiments, it will be understood that many variations and modifications will be obvious to those skilled in the art. It is preferred, therefore, that the scope of the invention be limited not by the specific disclosure herein but only by the appended claims.

I claim:

1. A mechanical ashtray, comprising a lower base receptacle having upstanding walls; an upper body disposed above said lower receptacle and including a depending sleeve which meets said receptacle walls; means for interconnecting said receptacle and said upper body sleeve, so as to permit relative shifting of said upper body toward and away from said receptacle;

at least one lid element support shaft being carried by and also being shiftable with said upper body; at least one lid element of a shape so as to close off entrance into said receptacle through said upper body when said lid element is in a first, closed position; said lid element being connected with to be pivotable with its said support shaft and with respect to said upper body to a second, open position;

a support element carried by said receptacle and engaging said lid element and being of a dimension such as to keep said lid element in said first, closed position when said body and said receptacle are in an orientation which is relatively toward one another and being so shaped as to permit said lid element to pivot toward said second, open position when said body and said receptacle are moved away from each other.

2. The mechanical ashtray of claim 1, wherein there are a plurality of said lid elements; a support shaft is carried by said body for each said lid element and each said lid element is connected with to be pivotable with its said support shaft and with respect to said upper body; all said lid elements being so disposed and shaped as to together fully close off the opening into said receptacle.

3. The mechanical ashtray of claim 2, wherein there are two said lid elements and a single said lid element support shaft; both said lid elements being connected to the single said support shaft.

4. The mechanical ashtray of claim 1, wherein said interconnecting means comprises a projecting stud means on one of either of said walls of said receptacle and said upper body sleeve; said stud means projects toward the other of said receptacle walls and said upper body sleeve;

the said other of said receptacle walls and said upper body sleeve includes a notch which is alignable with and which receives said stud means.

5. The mechanical ashtray of claim 4, wherein the said one of said receptacle walls and said upper body sleeve that includes said notch has a free end which faces toward the other of said receptacle and said sleeve; said notch includes an obliquely slanted portion that extends inward from said free end and tilts generally away from that said free end, whereby interconnection of said body and said receptacle is accomplished by a combined movement of twisting said receptacle with respect to said body and moving said body toward and away from said receptacle as is required to separate or join said receptacle and said body.

6. The mechanical ashtray of claim 4, wherein said notch includes a substantially vertical portion with a closed first end that is so positioned with respect to said stud means that when said stud means approaches said first end, said lid element assumes its said first, closed position; and said notch vertical portion having a second closed end which is so positioned with respect to said stud such that when said ashtray body and said receptacle are moved apart sufficiently to tilt said lid element, said stud contacts said notch second end.

7. The mechanical ashtray of claim 6, wherein the said one of said receptacle walls and said upper body sleeve that includes said notch has a free end which faces toward the other of said receptacle and said sleeve; said notch includes an obliquely slanted portion that extends inward from said free end and tilts generally away from that said free end, whereby interconnection of said body and said receptacle is accomplished by a combined movement of twisting said receptacle with respect to said body and moving said body toward and away from said receptacle as is required to separate or join said receptacle and said body; said slanted notch portion intersects said vertical notch portion.

8. The mechanical ashtray of claim 7, wherein said stud means comprises a stud that passes through said

receptacle walls, said upper body sleeve contains said notch and said sleeve and said notch extend past said stud.

9. The mechanical ashtray of claim **1,** wherein said lid element support element includes a projection which engages said lid element a predetermined distance away from the connection between said element and said support shaft, thereby to limit the extent of pivoting of said lid element when said lid element is opened from its said first, closed position.

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