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(54) A bin

(57) A bin for the disposal of cigarettes or the like, comprises an outer housing (10) defining a lower chamber (14) and an upper chamber (13). An inner container (17) in the lower chamber (14) of the housing (10) retains the discarded waste. The container (17) has an opening (19) for receipt of discarded waste and the housing (10) has at least one aperture (27) through which waste is discarded. The inner container (17) is disposed below the aperture (27). A first baffle (20) in the container (17) restricts the opening (19) in the container (17) and serves as a chute to direct discarded waste into the container interior. A second baffle (29) is positioned in the housing (10) above the container (17) and the first baffle (20), and between the opening (19) and the aperture (27). The second baffle (29) prevents any smoke that egresses from the opening (19) of the container (17) towards the aperture (27), guides said smoke toward the upper chamber (13) and restricts oxygen from entering the container to feed a fire. The container may be retained in place by a magnet (45).

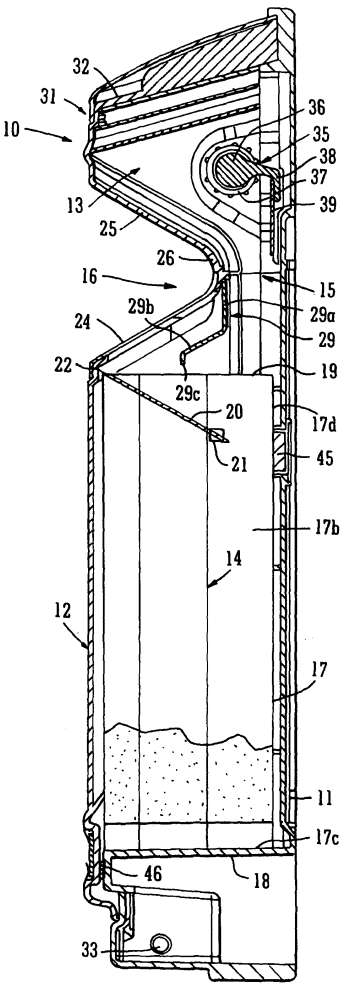

FIG. 2

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Description

[0001] The present invention relates to a bin, such as for example a litter bin, or other receptacle particularly, but not exclusively, for receiving cigarette or cigar waste such as, for example, stubs, spent matches, ash or other such waste matter that has the potential for initiating a fire in the bin.

[0002] Conventional cigarette disposal bins comprise a substantially upright freestanding or wall-mounted housing defining an enclosure containing a receptacle or container for receipt of cigarette waste (ash or extinguished stubs) or other litter and an upper durable stubbing grille disposed over the receptacle. A user stubs out the cigarette on the grille before dispensing the waste through an aperture adjacent to or within the grille and into the receptacle. Example bins of this kind have been available from the applicant under the trade marks ASHMOUNT™ and ASHGUARD™. A hood forming an extension to the housing may provide weather protection for the grille.

[0003] Another example of a cigarette disposal bin, described in EP0647412, comprises a rectangular housing containing a receptacle with an upper opening for the retention of the waste. A front fascia of the housing is pivotal away from the rest of the bin to allow access to the receptacle for emptying. One or more apertures in a wall of the housing allow a cigarette to be inserted into the bin and a baffle at the top of the receptacle partially closes the opening so as to prevent smoke from a cigarette escaping through the aperture. In one embodiment the baffle may be hingedly mounted to the receptacle. In a further embodiment additional baffles may be provided at vertically spaced intervals along the interior of the housing.

[0004] According to a first aspect of the present invention there is provided a bin for the disposal of cigarette waste or the like, comprising an outer housing defining a lower chamber and an upper chamber, an inner container in the lower chamber of the housing for retention of discarded waste, the container having an opening for receipt of discarded waste, at least one aperture in the housing through which waste is to be discarded, the inner container being disposed below the aperture, a first baffle disposed in or adjacent to the container and defining the opening into the container, a second baffle disposed in the housing above the container and the first baffle and between the opening and the aperture and configured so as to restrict access of smoke that egresses from the opening of the container to the aperture and so as to guide said smoke towards the upper chamber.

[0005] The first and second baffles may be both connected to the outer housing or to the container. Alternatively, the first baffle may be connected to the container and the second baffle connected to the housing.

[0006] The presence of the second baffle assists in extinguishing fires present in the container by restricting oxygen access to a fire in the container and also assists in containing smoke from the fire by directing it to the upper chamber.

[0007] The second baffle may extend across at least a portion of the aperture and may extend, at least in part, upwardly towards the upper chamber. It may be disposed adjacent to the aperture in the housing.

[0008] The first baffle may define a chute to guide waste into the opening in the container, which chute may extend from a top edge of the container downwardly into the container interior. The chute may be pivotally mounted between a first position in which the opening is restricted and a second position in which it is moved away from the container so as to enlarge the opening for emptying purposes.

[0009] The second baffle may also define a chute portion inclined to the horizontal and vertical when the housing is upright. This chute portion may be inclined in one direction and the chute portion of the first baffle may be inclined in a substantially opposite direction.

[0010] The second baffle may be fixed to the housing at a position above the aperture.

[0011] The housing may define a narrowed passage between the upper and lower chambers and the second baffle may be positioned to deflect any smoke through said narrowed passage, which may be substantially vertically above the container opening.

[0012] The housing aperture may be defined in a wall portion that extends inwardly of the housing interior to define the narrowed passage.

[0013] At least one stubber grille may be provided adjacent to said at least one aperture.

[0014] The container, or at least a part thereof, may be manufactured from a magnetically attractive material and a magnet is present in the housing to attract the container and retain it in a predetermined location in relation to the housing.

[0015] The container may be supported on an internal shelf defined by the housing.

[0016] The housing may comprise a front portion and a back portion, the front portion being pivotally displaceable relative to the back portion between a closed position and an open position in which the container is exposed. The front portion may be pivot downwardly about a pivot at or near a base of the housing. The front portion may be lockable in the closed position. A locking mechanism may be provided in the upper chamber and may comprise an elongate rotary member that spans a width of the housing with a locking projection that may be movable by rotation of the rotary member from a locked position in which it is latched in a locking recess and an unlocked position where the projection is clear of the locking recess. The locking recess may be defined by a clearance between a locking plate and the housing. The locking projection may be in the form of a tongue defined on the rotary member.

[0017] The rotary member of the locking mechanism may extend from each side of the housing and may be engageable by a key to effect rotation between the locked

and unlocked positions.

[0018] A strip of draught-excluding material may be provided between the edge of the shelf and a portion of the housing. For convenience during opening of the bin the shelf may project from a rear portion of the housing to which it may be integrally attached.

[0019] According to a second aspect of the present invention there is provided a waste bin comprising an outer housing that defines a chamber and an opening for receipt of waste matter, a container disposed in the housing and receive waste matter disposed through the opening and to retain the matter therein, the container being made from a magnetically attractive material, and a permanent magnet fixed to a wall of the housing such that the container is retained against said wall in a predetermined position relative to the housing.

[0020] The container may be positioned below the opening in the housing. It may also be supported on a shelf in the housing.

[0021] The permanent magnet may be disposed in a hole in said wall.

[0022] The housing may comprise a front wall in which said opening is defined and a rear wall to which said magnet is fixed.

[0023] The magnet may be supported in a casing that is inserted into said hole in said wall.

[0024] A specific embodiment of the present invention will now be described, by way of example only, with reference to the accompanying drawings, in which:

Figure 1 is a perspective exploded view of a cigarette waste bin in accordance with the present invention, from the front and to one side;
Figure 2 is a sectioned side view of the bin of figure 1;
Figure 3 is a front view of the bin of figure 1 and 2;
Figure 4 is a front view of the bin of figures 1 to 3 with a front part of the housing pivoted downwardly; and
Figure 5 is a side view of the bin of figures 1 to 4.

[0025] Referring now to the drawings the illustrated cigarette bin has a vertically elongated housing 10 comprising a back plate 11 by which the bin may be fixed or otherwise against a wall or other support and a front wall 12 that is curved rearwardly to meet and connect to the back plate 11. The interior of the housing 10 is hollow and defines upper and lower chambers 13, 14 (fig. 2) separated by a narrow passage 15 defined by a large indentation 16 across the width of an upper part of the front wall 12 and which extends towards the back plate 11. The front wall 12 and the back plate 11 are typically manufactured from moulded plastics material.

[0026] A container 17 stands in the lower chamber 14 of the hollow housing 10 on a shelf 18 integrally formed with and projecting perpendicularly from the bottom end of the back plate 11. The container 17 is, for example, manufactured from a folded sheet of mild steel that has been zinc coated and comprises a front wall portion 17a, side walls 17b, a bottom panel 17c that rests on the shelf and a rear flat panel 17d disposed close to the back plate 11 of the housing 10. The upper edges of the container walls 17a,b,d define an open top 19 disposed in a substantially horizontal plane for receipt of discarded waste. The open top 19 of the container 17 is partially closed by a baffle plate 20 (figure 2) that is pivotally connected to the side walls 17b below the open top 19 and is inclined from the pivot 21 upwardly and forwardly such that a lip 22 rests on the upper edge of the front wall 17a. As well as restricting the size of the opening 19 to the container 17 the baffle plate 20 serves as a chute to direct waste into the container interior.

[0027] The indentation 16 in the front wall 12 of the housing 10 is defined by a rearwardly and upwardly inclined opening 23 that is closed by a metallic fascia panel 24 and a vertically adjacent forwardly and upwardly inclined wall portion 25 that meets the fascia panel 24 at a curved wall section 26. The fascia 24 is penetrated by three apertures 27 each with an adjacent stubber grille 28 by which a cigarette may be extinguished before it is discarded through one of the apertures 27. When the container 17 is supported on the shelf 18 its open top 19 is disposed under the fascia panel 24 so as to receive the discarded waste passed through the apertures 27 on to the baffle plate 20.

[0028] A deflector plate 29 depends downwardly inside the housing from the curved wall section 26 to which it is fixed and serves as a baffle to shield the apertures 27 and stubber grilles 28 from any smoke that might egress from the restricted opening 19 of the container 17. It also acts to restrict access to the container interior by any air that ingresses through the apertures 27 or stubber grilles 28. The deflector plate 29 is folded to form an upper section 29a that depends substantially vertically, an integral lower section 29b that is approximately parallel to the fascia panel 24 and a terminal edge portion 29c that extends substantially in a vertical plane.

[0029] The upper chamber 13 of the housing 10 is a volume provided by a hood section 31 of the bin positioned above the container 17 to receive smoke egressing from the container opening 19. The hood section 31 is defined between a top wall 32 of the front wall 12 of the housing 10, the upwardly inclined wall portion 25 and the back plate 11.

[0030] The front wall 12 of the housing 10 is pivotally connected to the back plate 11 by a horizontal pivot rod 33 supported under the shelf 18 such that it can be pivoted through approximately 180 degrees about the rod 33 between the closed position shown in figures 1 to 3 and the open position shown in figures 4 and 5 in which the container 17 is exposed and may be removed for emptying. A locking mechanism 35 in the upper chamber 13 serves to lock the bin in the closed position and comprises a moulded plastics bar 36 rotatably supported at each end by a sleeve 37 in a hole in each side of the front wall 12. The bar 36 is disposed horizontally and has a central locking tongue 38 that latches, in the locked po-

sition, behind a rectangular locking plate 39 attached to the back plate 11 in a spaced relationship. In order to release the tongue 38 the bar 36 is simply rotated. Actuation of the bar is achieved by using a tool (not shown) with a specially designed socket that engages with a complementary formation 40 defined on the exposed end of the bar 36. Thus in order to empty the bin an authorised person uses the tool to engage one of the exposed ends of the locking bar 36 and turns it to rotate the bar 36 and release the tongue 38 from behind the locking plate 39. The front wall 12 can then be pivoted forwards and downwards to the position shown in figures 4 and 5 whereupon the container 17 can be removed easily from the shelf 18 and emptied by inverting it and allowing the baffle 20 to pivot out of the way.

[0031] The container 17 is supported on the shelf 18 by means of a disc of magnetic material 45 that is housed in the back plate 11. The disc magnetically attracts the rear panel 17d of the container and serves to retain it 17 centrally on the shelf 18 against the back plate 11 as the bin is opened by pivoting the front wall 12. It also prevents the container 17 from being upset during opening of the bin in windy conditions. It will be appreciated that any size and shape of magnet may be used as appropriate. The magnet may be retained in a casing and inserted into the back plate of the housing. It is to be appreciated that this kind of magnetic retention could be used with other types of litter or waste bins where there is an inner container that is removable through an access opening that is closable by a door of the outer housing such as the front wall in the embodiment described herein.

[0032] A foam strip 46 is provided between the front edge of the shelf 18 and the front wall 12 of the bin housing 10 to seal against the ingress of air that may serve to fuel any fire in the bin.

[0033] The top wall 32 of the housing is concealed by a cover lid 47.

[0034] The structure of the bin is designed to retard or extinguish any fires present in the container 17. In particular the baffle 20 and deflector 29, serve to restrict the passage of oxygen through the fascia panel 24 and prevent smoke from escaping the other way by directing it up into the hood 31 where it is contained. The bin structure also ensures that the debris from cigarettes and the like is retained in an efficient manner and also serves to facilitate the emptying process as described above.

[0035] Numerous modifications and variations to the embodiment described above may be made without departing from the scope of the invention as defined in the appended claims. For example, the exact size and shape of the baffle and deflector plate may be varied. Moreover, the baffle and deflector plate may both be connected to the housing such that the container may be removed via a bottom opening without also moving the baffle and plate. In an alternative embodiment both the baffle and the plate may be attached to the container. Finally, the bin may be designed to be freestanding rather than wall-mounted.

Claims

1. A bin for the disposal of cigarette waste or the like, comprising an outer housing defining a lower chamber and an upper chamber, an inner container in the lower chamber of the housing for retention of discarded waste, the container having an opening for receipt of discarded waste, at least one aperture in the housing through which waste is to be discarded, the inner container being disposed below the aperture, a first baffle disposed in or adjacent to the container and defining the opening into the container, a second baffle disposed in the housing above the container and the first baffle and between the opening and the aperture and configured so as to restrict access of smoke that egresses from the opening of the container to the aperture and so as to guide said smoke towards the upper chamber.

2. A bin according to claim 1, wherein the second baffle extends across at least a portion of the aperture.

3. A bin according to claim 1 or 2, wherein the second baffle extends, at least in part, upwardly towards the upper chamber.

4. A bin according to claim 1, 2 or 3, wherein the second baffle is disposed adjacent to the aperture in the housing.

5. A bin according to any one of claims 1 to 4, wherein the first baffle defines a chute to guide waste into the opening in the container.

6. A bin according to claim 5, wherein the chute extends from a top edge of the container downwardly into the container interior.

7. A bin according to claim 5 or 6, wherein the chute is pivotally mounted between a first position in which the opening is restricted and a second position in which it is moved away from the container so as to enlarge the opening for emptying purposes.

8. A bin according to any preceding claim, wherein the second baffle defines a chute portion inclined to the horizontal and vertical when the housing is upright.

9. A bin according to any preceding claim, wherein the first baffle defines a chute portion that is inclined in a first direction and the second baffle defines a chute portion that is inclined is a second direction, said first and second directions being substantially opposed.

10. A bin according to any preceding claim, wherein said second baffle is fixed to the housing at a position above the aperture.

11. A bin according to any preceding claim, wherein the housing defines a narrowed passage between the upper and lower chambers and the second baffle is positioned to deflect any smoke through said narrowed passage.

12. A bin according to claim 11, wherein the narrowed passage is substantially vertically above the container opening.

13. A bin according to claim 11 or 12, wherein the housing aperture is defined in a wall portion that extends inwardly of the housing interior to define the narrowed passage.

14. A bin according to any preceding claim, wherein there is provided at least one stubber grille adjacent to said at least one aperture.

15. A bin according to any preceding claim wherein the container is manufactured from a magnetically attractive material and a magnet is present in the housing to attract the container and retain it in a predetermined location in relation to the housing.

16. A bin according to any preceding claim, wherein the container is supported on an internal shelf defined by the housing.

17. A bin according to any preceding claim, wherein the housing comprises a front portion and a back portion, the front portion being pivotally displaceable relative to the back portion between a closed position and an open position in which the container is exposed.

18. A bin according to claim 17, wherein the front portion is pivotal downwardly about a pivot at or near a base of the housing.

19. A bin according to claim 17 or 18, wherein the front portion is lockable in the closed position.

20. A bin according to claim 19, wherein there is provided a locking mechanism in the upper chamber.

21. A bin according to claim 20, wherein the locking mechanism comprises an elongate rotary member that spans a width of the housing has a locking projection that is movable by rotation of the rotary member from a locked position in which it is latched in a locking recess and an unlocked position where the projection is clear of the locking recess.

22. A bin according to claim 21, wherein the recess is defined by a clearance between a locking plate and the housing.

23. A bin according to claim 20 or 21, wherein the locking projection is a tongue defined on the rotary member.

24. A bin according to any one of claims 21 to 23, wherein the rotary member extends from each side of the housing and is engageable by a tool to effect rotation between the locked and unlocked positions.

25. A bin according to claim 16, wherein there is provided a strip of draught excluding material between the edge of the shelf and a portion of the housing.

26. A bin according to claim 16 or 25, wherein the shelf projects from a rear portion of the housing.

27. A waste bin comprising an outer housing that defines a chamber and an opening for receipt of waste matter, a container disposed in the housing and receive waste matter disposed through the opening and to retain the matter therein, the container being made from a magnetically attractive material, and a permanent magnet fixed to a wall of the housing such that the container is retained against said wall in a predetermined position relative to the housing.

28. A waste bin according to claim 27, wherein the container is positioned below the opening in the housing.

29. A waste bin according to claim 27 or 28, wherein the container is supported on a shelf in the housing.

30. A waste bin according to claim 27, 28 or 29, wherein the permanent magnet is disposed in a hole in said wall.

31. A waste bin according to claim 30, wherein the permanent magnet is supported in a casing that is inserted into said hole.

32. A waste bin according to any one of claims 27 to 31, wherein the housing comprises a first wall in which said opening is defined and a second wall to which said magnet is fixed.

33. A waste bin according to claim 32, wherein said first wall is a front wall and said second wall is a rear wall.

34. A waste bin according to any one of claims 27 to 31, wherein the housing has an access opening that is closable by a door, said container being removable via said access opening.

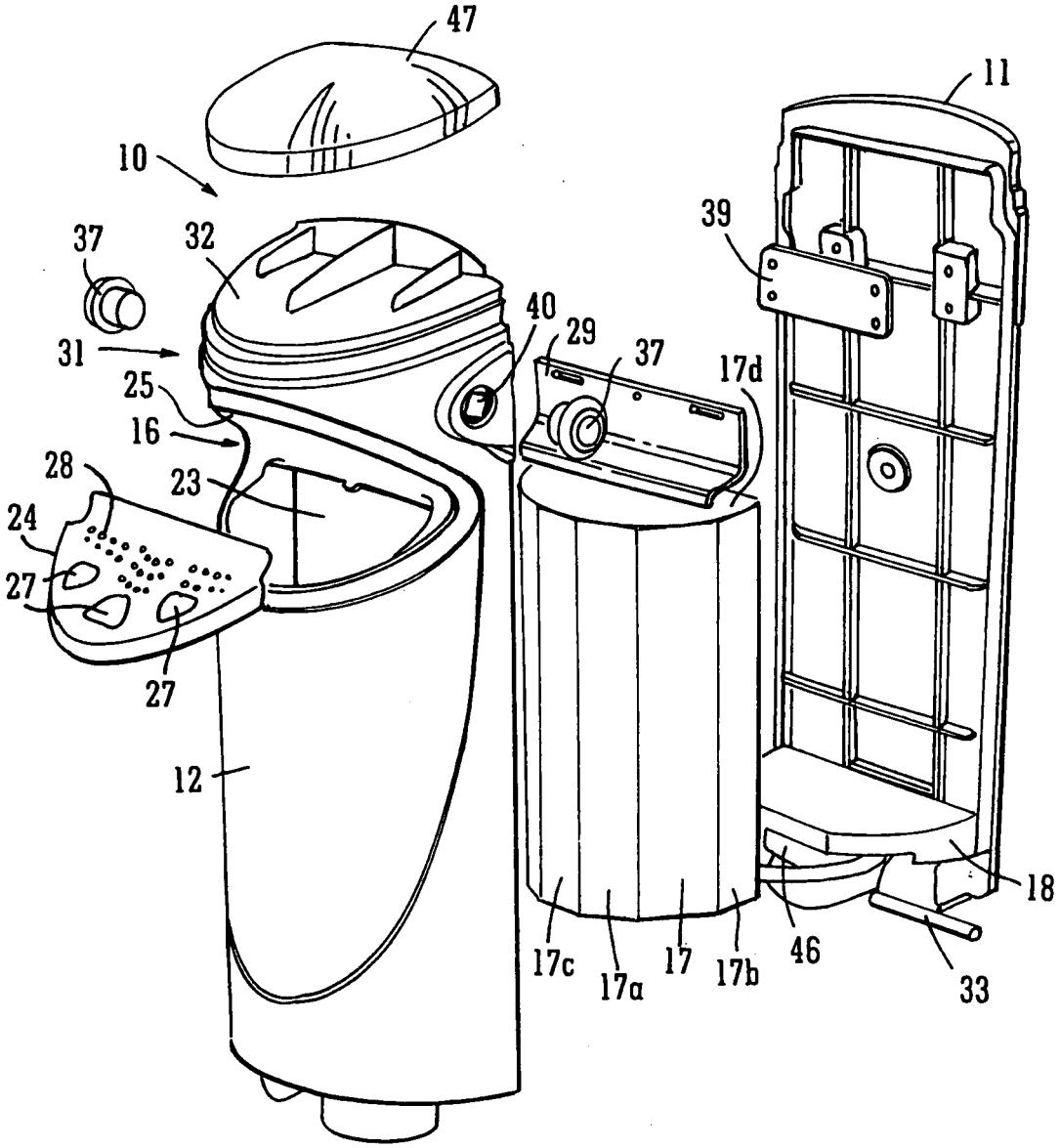
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FIG. 1

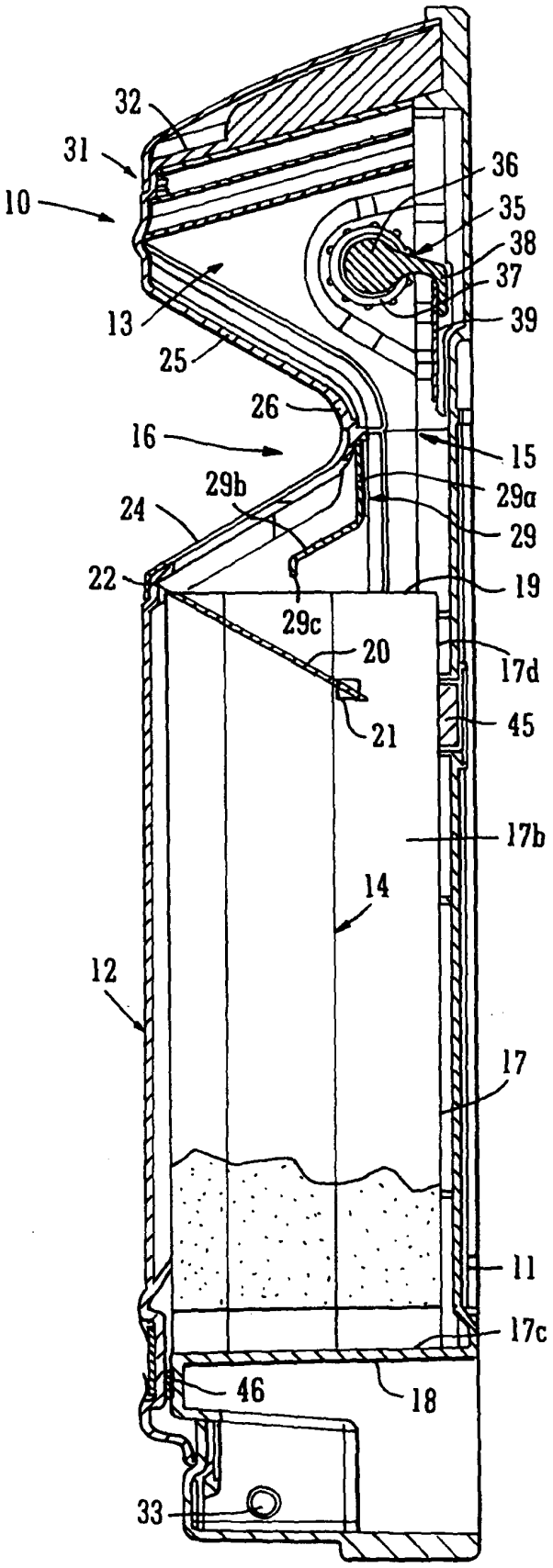
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FIG. 2

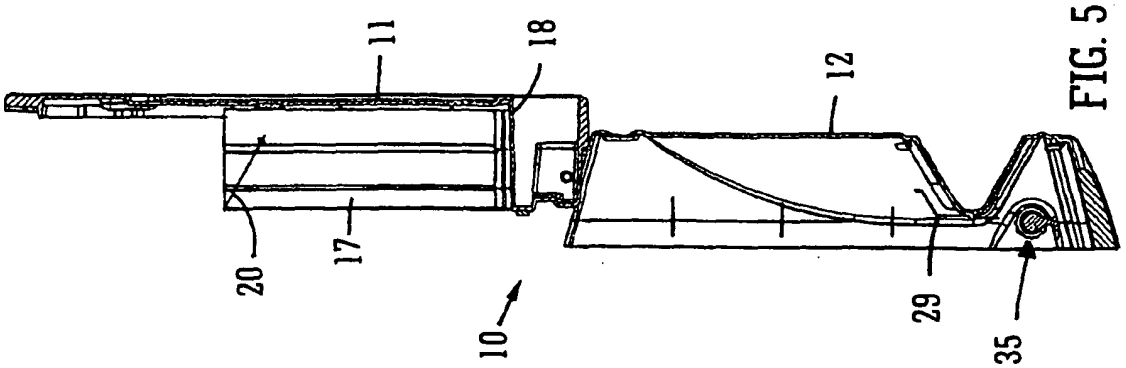

FIG. 5

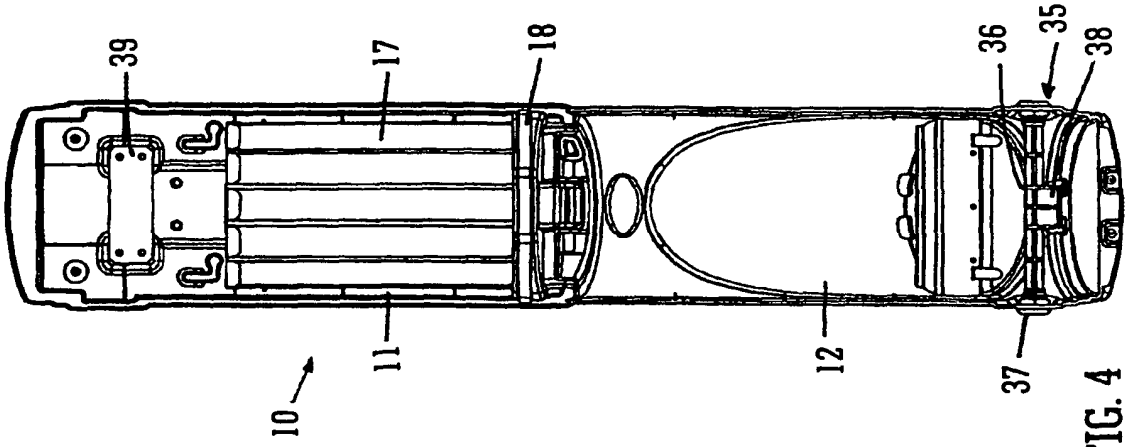

FIG. 4

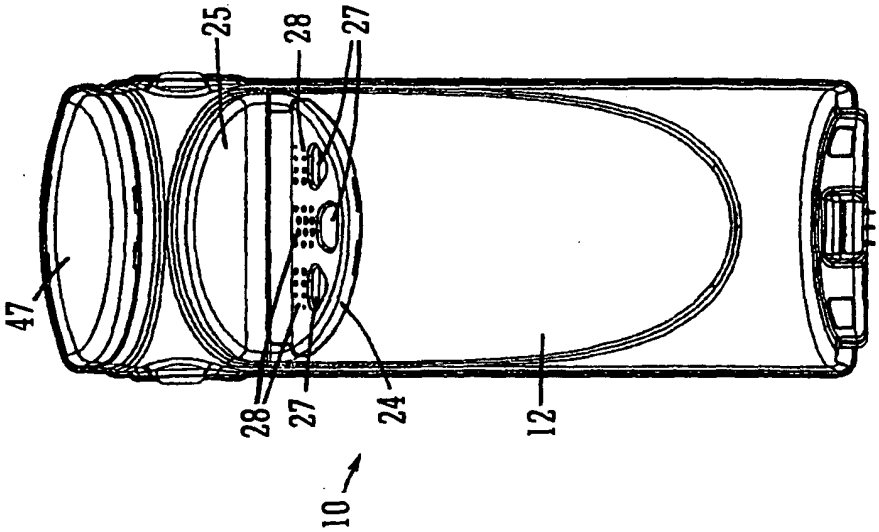

FIG. 3

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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