A trash can with function of sucking litterbags having a plurality of intake hole arranged surrounding the lower part or bottom side thereof. The intake holes are connected to a closed space with an air pump therein for expelling air into a vacuum status so as to make the litterbag inside be sucked by the intake holes. When a litterbag is disposed into the trash can, the opening of the litterbag is arranged on the edge of the opening of the trash can. Then the bottom of the litterbag is pressed down to the bottom of the trash can and the air pump is turned on to make the intake holes adsorb the litterbag. Thus the litterbag is spread out completely on the bottom of the trash can so that the disposition of the litterbag is simplified and the litterbag is set down more properly.
TRASH CAN WITH FUNCTION OF SUCKING LITTERBAG

BACKGROUND OF THE INVENTION

[0001] The present invention relates to a trash can with function of sucking litterbags, especially to a trash can with a plurality of intake hole arranged surrounding the lower part or bottom of the trash can. The intake holes are connected to a closed space outside the cylinder or inner space. An air pump is arranged inside the closed space for expelling air therein into a vacuum status so as to make the litterbag inside be sucked by the intake holes and the bottom of the litterbag is spread out and fixed on the bottom of the trash can. Thus the disposition of the litterbag is simplified and the litterbag is set down more properly.

[0002] There are various designs of trash cans used at homes or public places such as with or without a cover, an automatically flip-up lip, or flip top bin by pedal operation. Most of the people dispose litterbags inside trash cans for the convenience of cleaning trash can. When they dispose the litterbag, the opening of the litterbag is arranged on the edge of opening of the trash can, then the litterbag is pressed down and spread out for making the litterbag attaching closely on the bottom of the trash can. However, general litterbags are not so easy to spread out and attach closely on the bottom of the trash cans. Only part of the litterbag is spread out so the garbage is easy to fall outside the litterbag and the available volume of the litterbag is reduced. It’s not only inconvenience to arrange the litterbag but also troublesome to clean up garbage outside the litterbag.

SUMMARY OF THE INVENTION

[0003] Therefore, it is a primary object of the present invention to provide a trash can with function of sucking litterbags. A plurality of intake hole is arranged surrounding the lower part or bottom of the trash can. The intake holes are connected to a closed space with an air pump therein for expelling air into a vacuum status so as to make the litterbag inside be sucked by the intake holes. When dispose the litterbag into the trash can, the opening of the litterbag is arranged on the edge of the opening of the trash can. Then the bottom of the litterbag is pressed down to the bottom of the trash can and the air pump is turned on to make the intake holes adsorb the litterbag. Thus the litterbag is spread out completely on the bottom of the trash can so that the disposition of the litterbag is simplified and the litterbag is set down more properly.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] The structure and the technical means adopted by the present invention to achieve the above and other objects can be best understood by referring to the following detailed description of the preferred embodiments and the accompanying drawings, wherein

[0005] FIG. 1 is an explosive view of an embodiment in accordance with the present invention;
[0006] FIG. 2 is a cross-sectional view of the embodiment shown in FIG. 1;
[0007] FIG. 2A is a partial enlarged view of FIG. 2;
[0008] FIG. 3 is a cross-sectional view of the embodiment shown in FIG. 2 while arranging a litterbag therein;

[0009] FIG. 4 is a cross-sectional view of the embodiment shown in FIG. 2 after a litterbag being disposed therein;
[0010] FIG. 5 is an explosive view of another embodiment in accordance with the present invention;
[0011] FIG. 6 is a cross-sectional view of the embodiment shown in FIG. 5;
[0012] FIG. 6A is a partial enlarged view of FIG. 6;
[0013] FIG. 7 is a cross-sectional view of the embodiment shown in FIG. 6 while arranging a litterbag therein;
[0014] FIG. 8 is a cross-sectional view of the embodiment shown in FIG. 6 after a litterbag being disposed therein.

DETAIL DESCRIPTION OF THE PREFERRED EMBODIMENT

[0015] Refer to FIG. 1, FIG. 2 & FIG. 2A, a trash can 1 in accordance with the present invention is improved from a conventional trash can having an outer cylinder 10 and an inner cylinder 11. The space inside the inner cylinder 11 is for accommodating garbage. A handle 111 is pivoted on top of the inner cylinder 11 for easily putting the inner cylinder 11 into the outer cylinder 10 or taking it out. A pedal device for flip-top 30 composed by a pedal 31, a diving rods set 32 and a pivoted top cover 33 is disposed on the outer cylinder 10. In usage, an opening 41 of a litterbag 40 is arranged on the edge of opening of the inner cylinder 11, then the bottom of the litterbag 40 is pressed down and spread out to the bottom of the inner cylinder 11, as shown in FIG. 3.

[0016] The present invention features on that a plurality of intake holes 114 is arranged on the bottom side 113 or surrounding a circular surface 112 of the inner cylinder 11 and is connected with a closed space 13. An air pump 20 is arranged inside the closed space 13 for expelling air inside the closed space 13 into a vacuum status so as to make the litterbag 40 inside the inner cylinder 11 be sucked by the intake holes 114 and the bottom side 42 of the litterbag 40 keeps flat on the bottom of the inner cylinder 11, as shown in FIG. 4. Thus it’s easy to put the litterbag 40 properly inside the trash can 1 and the litterbag 40 is put down properly.

[0017] The air pump 20 is a traditional device such as high-speed centrifugal vane-type pump as shown in FIG. 1. An intake port 21 is arranged in direction of a shaft of centrifugal blades while a vent hole 22 is in tangential direction of centrifugal blades thus air is taken from the intake port 21 and is expelled through the vent hole 22. The power supply of the air pump 20 can be batteries 23 or by wires 24 connecting to a switch 25 for turning on or off. There is no limit on positions for arrangement of the switch 25. It can be disposed on a hinge for opening and closing the top cover 33.

[0018] The closed space 13 is formed by an enclosure seat 12 enclosed the bottom edge of the inner cylinder 11 and being disposed between the outer cylinder 10 and the inner cylinder 11. The enclosure seat 12 is a plate-like body with a central slot 121, an outwards opening 122 and a circular enclosure surface 123. The air pump 20 is installed inside the central slot 121 while the intake port 21 corresponds to the center of the bottom of the inner cylinder 11 and the vent hole 22 corresponds to the outwards opening 122 for exhausting air. A packing flange 124 made of soft elastic
materials such as rubber is disposed on top of the circular enclosure surface 123. As shown in FIG. 2 & FIG. 2A, when the inner cylinder 11 is mounted inside the circular enclosure surface 123, the packing flange 124 attached above the intake holes 114 on the inner cylinder 11 so as to ensure the closed space 13 from outer edge of the intake holes 114 to the intake port 21 in close status so as to improve the vacuum suction of the intake holes 114.

[0019] Refer to FIG. 5, FIG. 6, & FIG. 6A, a trash can 2 in accordance with the present invention is improved from general single-cylinder trash can. The trash can 2 consists of an outer cylinder 50 with a cover 51 thereof. The cover 51 is composed by a frame 511 and a pivoted top 512. When being used, the cover 51 is taken off and then an opening 41 of a litterbag 40 is arranged on edge of the opening of the outer cylinder 50. Then the litterbag 40 is pressed down to keep it flat on bottom of the outer cylinder 50. The cover 51 is repositioned, as shown in FIG. 7.

[0020] The present invention features on that an isolation board 60 is used to form a closed space 52 inside the bottom of the outer cylinder 50 while a plurality of intake hole 63 is disposed on a circular surface 61 or bottom surface 62 of the isolation board 60. The intake holes 63 are connected with the closed space 52. An air pump 20 is arranged inside the closed space 52 for sucking air inside the closed space 13 into a vacuum status so as to make the litterbag 40 inside the inner cylinder 11 be sucked by the intake holes 63 and the bottom side 42 of the litterbag 40 keeps flat on the bottom of the outer cylinder 50, as shown in FIG. 8. Thus the arrangement of the litterbag 40 is simplified.

[0021] The air pump 20 is a traditional device such as a high-speed centrifugal vane-type pump as shown in FIG. 1 or FIG. 5. Air is taken from the intake port 21 and is expelled through the vent hole 22. The power supply of the air pump 20 can be batteries 23 or by wires 24 connecting to a switch 25 for turning on or off. There is no limit on positions for arrangement of the switch 25 as long as it is convenient for users to operate.

[0022] The closed space 52 is formed by the isolation board 60 arranged transversely near the bottom of the outer cylinder 50. The isolation board 60 is a plate-like body with similar shape of the outer cylinder 50 and is composed by the circular surface 61 or and the bottom surface 62. The air pump 20 is installed under the bottom surface 62 while the vent hole 22 connects to an outwards opening 53 on the bottom of the outer cylinder 50 so as to expel air inside the closed space 52 through the vent hole 22 and the outwards opening 53. A packing flange 64 made of soft elastic materials such as rubber is disposed on top of the circular surface 61. As shown in FIG. 6 & FIG. 6A, when the isolation board 60 is arranged into the outer cylinder 50, the packing flange 64 attached on surface of walls of the outer cylinder 50 so as to make the closed space 52 from the intake holes 63 to the intake port 21 of the air pump 20 in close status so as to improve the vacuum suction of the intake holes 63.

What is claimed is:

1. A trash can with function of sucking litterbags comprising a trash cylinder and an air pump, a plurality of intake hole is arranged surrounding the lower part or bottom of the trash cylinder and is connected to a closed space outside the trash cylinder; an air pump is arranged inside the closed space for expelling air therein into a vacuum status so as to make the intake holes absorb a litterbag inside the trash cylinder; in accordance with the above structure, a litterbag is disposed into the trash can and is pressed down to a certain depth of the trash cylinder, then the air pump is activated to make the intake holes absorb the litterbag, thus the litterbag is spread out completely on the bottom of the trash cylinder so that the litterbag is set down more properly.

2. The trash can with function of sucking litterbags as claimed in claim 1, wherein the air pump is a high-speed centrifugal vane-type pump.

3. The trash can with function of sucking litterbags as claimed in claim 1, wherein the air pump is driven by batteries.

4. The trash can with function of sucking litterbags as claimed in claim 1, wherein the air pump is turned on or off by a switch.

5. The trash can with function of sucking litterbags as claimed in claim 4, wherein the switch is connected with wires and disposed on surface of the trash can.

6. The trash can with function of sucking litterbags as claimed in claim 1, wherein the closed space is under the trash cylinder.

7. The trash can with function of sucking litterbags as claimed in claim 1, wherein the trash can has an inner trash cylinder and an outer trash cylinder.

8. The trash can with function of sucking litterbags as claimed in claim 7, wherein the closed space is formed by an enclosure that encloses the bottom edge of the inner cylinder and is disposed between the outer cylinder and the inner cylinder.

9. The trash can with function of sucking litterbags as claimed in claim 1, wherein the trash can having only a single trash cylinder.

10. The trash can with function of sucking litterbags as claimed in claim 1, wherein an isolation board with a plurality of intake holes thereof is arranged transversely near the bottom of the trash cylinder.

11. The trash can with function of sucking litterbags as claimed in claim 9, wherein an isolation board with a plurality of intake holes thereof is arranged transversely near the bottom of the trash cylinder.

12. The trash can with function of sucking litterbags as claimed in claim 1, wherein the trash can having a top cover.

13. The trash can with function of sucking litterbags as claimed in claim 1, wherein the trash can having no cover.

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