A trash bag fixing device for a trash can includes a top locking part, a bottom locking part, a connecting part for connecting the top and the bottom locking parts elastically, and a holder for engaging the trash bag frictionally. The top and the bottom locking parts hold the trash bag circumferentially in between frictionally when locked. The top locking part includes an enclosing part for enclosing the bottom locking part, a stopping part for keeping the bottom locking part from slipping through the top locking part, and handles. The bottom locking part has a holding part to fix the bottom locking part to the trash can. The bottom locking part can be coalesced with the trash can into one. The connecting part includes a pleat with folds, which can be folded entirely when the top and bottom locking parts are locked and maintains a predetermined distance elastically otherwise.
TRASH BAG FIXING DEVICE

BACKGROUND OF THE INVENTION

[0001] This invention is related to a trash bag fixing device for a trash can or basket, in which it is convenient to install and change the trash bag. More particularly, the invention is related to a trash bag fixing device for a trash can that looks tidy and clean and does not expose a loose end of the trash bag. Also, the invention is related to a trash bag fixing device for a trash can which provides a firm support securing trash bags preventing spillage of trash. The invention is related to a trash bag fixing device for a trash can which looks tidy and neat without showing any loose ends of the trash bag exposed and can be used in any commercial, residential, and public setting.

[0002] Whether the trashcan is heavy or light, indoor or outdoor, it commonly can be difficult to clean the inside of the receptacle. That is why disposable liners are widely used to help keep the inside of the trash basket clean. The conventional method of securing the liner to the can is ineffective, often loosening and allowing the trash to soil the inside of the can.

[0003] Considering the total number of trash cans in a large-scale facility such as a convention center and a resort park, it should not be time consuming first of all. Also, considering the cleanliness and beauty of the modern facility, it should not mar the landscape or the look. The waste containment and removal should be cost effective, simple, and functional.

[0004] Accordingly, a need for a trash bag fixing device for a trash can has been omnipresent. This invention is directed to solve these problems and satisfy the long-felt need.

SUMMARY OF THE INVENTION

[0005] A trash bag fixing device for a trash can includes a top locking part, a bottom locking part fitted to the top of the trash can, a connecting part for connecting the top locking part and the bottom locking part elastically; and a holder or holding snap for engaging the trash bag frictionally.

[0006] The top locking part and the bottom locking part hold the trash bag in place when locked. More specifically, the top locking part and the bottom locking part hold the trash bag circumferentially in between frictionally when locked. The top locking part includes an enclosing part for enclosing the bottom locking part, a stopping part for keeping the bottom locking part from slipping through the top locking part, and one or more handles, and the bottom locking part has a holding part for an attachment to the trash can.

[0007] The connecting part or elastic connector includes a pleat with one or more folds, which defines a first predetermined distance and a second predetermined distance between the top locking part and the bottom locking part. The first predetermined distance is a minimum distance corresponding to a locked state, preferably about zero centimeter, and the second predetermined distance is a maximum distance corresponding to an unlocked state, preferably from about 5 to 10 centimeters.

[0008] The holder or trash bag holding snap includes a first recess and a second recess. The recess includes a tapering resilient gap of a shape of wedge and the distance between the first recess and the second recess is adapted to the thickness and the size of the trash bag, preferably from about 1 to 5 centimeters. The holder provides additional support for holding the trash bag in place when locked. The holder can be a part of the bottom locking part.

[0009] The top locking part and the bottom locking part have a predetermined geometrical shape, preferably the corresponding shape of the trash can; circular or rectangular.

[0010] Other embodiment of the invention can include a top locking part, a bottom locking part fixed to the top of the trash can, a connecting part for connecting the top locking part and the bottom locking part elastically, and a holder for engaging the trash bag frictionally. Still the top locking part and the bottom locking part hold the trash bag circumferentially in between when locked, and the other features are similar to the first embodiment.

[0011] The invention will simplify the processes of changing the trash. More importantly, it provides 100% effectiveness of securing trash bags in a trash basket. Lastly, the device will make a trash basket look tidy and neat, without loose ends of the liner hanging out.

[0012] Many other innovations, features, and advantages will be evident with the following description of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] These and other features, aspects and advantages of the present invention will become better understood with reference to the accompanying drawings, wherein:

[0014] FIG. 1 is a perspective view of a first embodiment of the invention installed on a trash can;

[0015] FIG. 2. is a perspective view show the way a trash bag is being fixed;

[0016] FIG. 3a. is a detailed plan view of the holder showing the way to fix the trash bag;

[0017] FIG. 3b is a detailed front elevation view of FIG. 3a;

[0018] FIG. 3c is a detailed bottom view of FIG. 3a;

[0019] FIG. 4 is a cross-sectional view of the locked top and bottom locking part; and

[0020] FIG. 5 is a cross-sectional view of the unlocked top and bottom locking part.

DETAILED DESCRIPTION OF THE INVENTION

[0021] FIG. 1 shows a trash bag fixing device for a trash can 90 with a top locking part 10, a bottom locking part 12, a connecting part 14, and a holder 16 installed on a trash can 90. The bottom locking part 12 is fitted to the top of the trash can 90, the connecting part 14 connects the top locking part 10 and the bottom locking part 12 elastically, and the holder 16 is attached to the bottom locking part 12 for engaging the trash bag frictionally.

[0022] FIG. 2 shows how the trash bag 30 gets tied in the holder 16 before locked between the top locking part 10 and the bottom locking part 12.
As shown in FIG. 2 and FIG. 4, the top locking part 10 and the bottom locking part 12 hold the trash bag 30 circumferentially in between frictionally when locked. The top locking part 10 includes an enclosing part 11 for enclosing the bottom locking part 12, a stopping part 13 for keeping the bottom locking part 12 from slipping through the top locking part 10, and one or more handles 20, and the bottom locking part 12 is attached to the trash can 90. More specifically, the enclosing part 11 of the top locking part 10 is attached to the outer portion of the bottom of the stopping part 13 of the top locking part 10. The top periphery of the bottom locking part 12 is stopped by the inner portion of the bottom of the stopping part 13, and the trash bag 30 is held between the inner side periphery of the enclosing part 11 and the side periphery of the bottom locking part 12.

The connecting part 14 includes a pleat 15 with one or more folds, the dimension of which corresponds to a first predetermined distance 31 when the pleat 15 is folded and a second predetermined distance 33 when the pleat 15 is extended as shown in FIG. 4 and FIG. 5. The first predetermined distance 31 is a minimum distance corresponding to a locked state, preferably about zero centimeter, and the second predetermined distance 33 is a maximum distance corresponding to a locked state, preferably at least from about 5 to 10 centimeters.

The holder 16 includes a first recess 17 and a second recess 19. The recesses 17, 19 include a tapering resilient gap of a shape of wedge and the distance between the first recess 17 and the second recess 19 is adapted to the thickness and the size of the trash bag 30, preferably from about 1 to 5 centimeters. FIG. 2 and FIG. 3 show how to fix the trash bag 30 into the holder 16 with the first recess 17 and the second recess 19. The holder 16 can be a part of the bottom locking part 12. FIG. 3(a) shows the view from the top, FIG. 3(b) from the front, and FIG. 3(c) from the below. The trash bag 30 can be fixed easily with two snaps of movement of a hand. It is similarly easy to remove the trash bag 30 from the recesses 17, 19 in order dump the full trash bag 30 from the trash can 90.

The top locking part 10 and the bottom locking part 12 have a predetermined geometrical shape, preferably the corresponding shape of the trash can 90; circular or rectangular.

Other embodiment of the invention can include a top locking part 10, a bottom locking part 12 integrated to the top of the trash can 90, a connecting part 14 for connecting the top locking part 10 and the bottom locking part 12 elastically, and a holder 16 for engaging the trash bag 30 frictionally. Still the top locking part 10 and the bottom locking part 12 hold the trash bag 30 circumferentially in between when locked, and the other features are similar to the first embodiment.

While the invention has been shown and described with reference to different embodiments thereof, it will be appreciated by those skilled in the art that variations in form, detail, compositions and operation may be made without departing from the spirit and scope of the invention as defined by the accompanying claims.

What is claimed is:

1. A trash bag fixing device for a trash can, comprising:
   a) a top locking part;
   b) a bottom locking part which is adapted to be fitted to the top of the trash can; and
   c) a connecting part for connecting the top locking part and the bottom locking part elastically,
   wherein the top locking part and the bottom locking part are a first predetermined distance apart when locked, and a second predetermined distance apart when unlocked.

2. The trash bag fixing device of claim 1, wherein the top locking part comprises an enclosing part for enclosing the bottom locking part, a stopping part for keeping the bottom locking part from slipping through the top locking part.

3. The trash bag fixing device of claim 2, wherein the top locking part further comprises one or more handles.

4. The trash bag fixing device of claim 1, wherein the bottom locking part has a holding part for an attachment to the trash can.

5. The trash bag fixing device of claim 1, wherein the connecting part comprises a pleat with one or more folds, wherein the dimension of the pleat corresponds to the first predetermined distance when the pleat is folded and the second predetermined distance when the pleat is extended.

6. The trash bag fixing device of claim 5, wherein the first predetermined distance is a minimum distance corresponding to the locked state.

7. The trash bag fixing device of claim 5, wherein the minimum distance is about zero (0) centimeter.

8. The trash bag fixing device of claim 5, wherein the second predetermined distance is a maximum distance corresponding to the unlocked state.

9. The trash bag fixing device of claim 5, wherein the maximum distance is from about five (5) to ten (10) centimeters.

10. The trash bag fixing device of claim 1, further comprising a holder for engaging the trash bag frictionally.

11. The trash bag fixing device of claim 10, wherein the holder comprises one or more recesses, wherein the recess comprises a gap of a shape of wedge.

12. The trash bag fixing device of claim 11, wherein the recess comprises a tapering walls, wherein the walls are made of elastic material.

13. The trash bag fixing device of claim 12, wherein the holder comprises a first recess and a second recess.

14. The trash bag fixing device of claim 13, wherein the distance between the first recess and the second recess is predetermined to the thickness and the size of the trash bag.

15. The trash bag fixing device of claim 14, wherein the distance is from about one (1) to five (5) centimeters.

16. The trash bag fixing device of claim 14, wherein the holder is integrated with the bottom locking part.

17. The trash bag fixing device of claim 1, wherein the top locking part and the bottom locking part have a predetermined geometrical shape.

18. The trash bag fixing device of claim 17, wherein the top locking part and the bottom locking part are circular.

19. A trash bag fixing device comprising:
   a) a container comprising a top open end;
   b) a top locking part;
   c) a bottom locking part fixed to the top of the trash can;
   d) a connecting part for connecting the top locking part and the bottom locking part elastically; and
   e) a holder for engaging the trash bag frictionally,
20. The trash bag fixing device of claim 19, wherein the bottom locking part is integrated with the container.

21. The trash bag fixing device of claim 19, wherein the top locking part comprises an enclosing part for enclosing the bottom locking part, a stopping part for keeping the bottom locking part from slipping through the top locking part.

22. The trash bag fixing device of claim 21, wherein the top locking part further comprises one or more handles.

23. The trash bag fixing device of claim 19, wherein the bottom locking part has a holding part for an attachment to the trash can.

24. The trash bag fixing device of claim 19, wherein the connecting part comprises a pleat with one or more folds, wherein the dimension of the pleat corresponds to a first predetermined distance when the pleat is folded and a second predetermined distance when the pleat is extended.

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