ABSTRACT

A disposable, fireproof receptacle for combustible debris for use in a cigarette receptacle is disclosed. The liner may be made from a metallic foil or other inexpensive, fire resistant material. The liner may be used in combination with or without a pail inside the receptacle. The metallic foil makes the liner resistant to fire and is inexpensive enough to also be disposable. When filled with debris the liner can be removed and sealed to allow convenient, safe disposal of the grimy and potentially hot debris inside the liner.
FIRE-SAFE DISPOSAL BAGS FOR SMOKERS' RECEPTACLES

CROSS REFERENCE TO RELATED APPLICATION

0001. This application claims the benefit of U.S. Provisional Patent Application Ser. No. 60/844,796 filed Sep. 15, 2006 which is herein incorporated by reference.

FIELD OF THE INVENTION

0002. The present invention relates in general to the disposal of combustible debris. In particular, the present invention relates to a disposable fireproof container for use within a collection device for the collection and disposal of cigarettes, cigars and other small combustible debris.

BACKGROUND INFORMATION

0003. Most buildings generally have ashtrays or other receptacles at building entrances and/or in designated smoking areas, in which smokers can dispose of their used smoking materials. Many of these receptacles have been designed to suppress or prevent fires within the receptacle by eliminating the oxygen needed to fuel a fire. The receptacles often have buckets that collect cigarette butts that are dropped into the containers.

0004. Almost invariably, the buckets become coated with nicotine, become smelly and generally become undesirable to touch and handle. Moreover, the bucket needs to be dumped once it has been removed. This leads to ash and other light material possibly becoming airborne and further irritating the person responsible for dumping the bucket. Changing the buckets becomes an undesirable job which no one wants to do. Often the bucket becomes so polluted with cigarette residue, such as ash, tar and nicotine, that the bucket is simply discarded and replaced.

0005. Most receptacles designed to prevent fires do so by eliminating oxygen around the combustion and thereby suffocating the fire. In general, these containers work well for preventing fires within the receptacle. However, the potential for fire still exist when the receptacles are emptied. When the cover of the cigarette receptacle is removed combustible material may still be smoldering. Oxygen rich air surrounds the material and it may reignite. If not detected the hot or burning material may be dumped into a larger container such as a dumpster or trash can which will often contain other combustible material. Obviously, this may lead to an undesirable and dangerous situation.

0006. The present invention has been developed in view of the foregoing.

SUMMARY OF THE INVENTION

0007. A disposable, fireproof receptacle for combustible debris for use in a cigarette receptacle is disclosed. The receptacle may be a liner and may be made from an inexpensive, fire resistant material such as metallic foil or plastic. The liner may be used in combination with or without a pail inside the receptacle. The metallic foil or plastic is inexpensive enough to also be disposable. When filled with debris the liner can be removed and sealed to allow clean safe disposal of the grimy and potentially hot debris inside the liner.

0008. An aspect of the present invention provides a receptacle for combustible debris comprising a base having at least one wall defining an interior chamber, a removable cover atop the base having an opening for receiving the combustible debris, a pail positioned under the opening of the removable cover and inside the interior chamber, a fireproof, disposable liner inside the pail.

0009. Another aspect of the present invention provides a receptacle for combustible debris comprising a base having at least one wall defining an interior chamber, a removable cover atop the base having an opening for receiving the combustible debris, a fireproof, disposable liner positioned under the opening of the removable cover and inside the interior chamber.

0010. Yet another aspect of the present invention provides a method of emptying a cigarette butt receptacle comprising the steps of removing a cover from the cigarette butt receptacle, removing a fireproof liner at least partially filled with cigarette butts or other debris, folding and rolling a top edge of the fireproof liner upon other portions of the top edge of the fireproof liner to close the liner, disposing of the liner and debris, positioning a new liner into the cigarette butt receptacle, and replacing the cover on the cigarette butt receptacle.

0011. These and other aspects will become more apparent from the following description.

BRIEF DESCRIPTION OF THE DRAWINGS

0012. FIG. 1 is an oblique view showing the top and side of a liner according to one embodiment of the present invention.

0013. FIG. 2 is an oblique view showing the bottom and side of a liner according to one embodiment of the present invention.

0014. FIG. 3 is an oblique view of a prior art cigarette receptacle.

0015. FIG. 4 is the cigarette receptacle of FIG. 3 with a portion of the base and cover cut away to expose the collection pail inside.

0016. FIG. 5 is an exploded oblique view of a liner installed inside the collection pail according to one embodiment of the present invention.

0017. FIG. 6 is an oblique view of a liner which is partially sealed according to one embodiment of the present invention.

0018. FIG. 7 is an oblique view of a liner filled with debris that has been sealed and is ready for disposal according to one embodiment of the present invention.

0019. FIG. 8 is an oblique view of a package of liners packed in a box according to one embodiment of the present invention.

0020. FIG. 9 is an oblique view of a liner having radial pleats in an expanded position according one embodiment of the present invention.

0021. FIG. 10 is an oblique view of a liner having vertical pleats according to one embodiment of the present invention.

0022. FIG. 11 is a perspective view of a liner made by sealing the edges opposing sheets according to one embodiment of the present invention.

0023. FIG. 12 is front view of a flattened liner made from two opposing sheets sealed along the sides and bottom of each sheet according to one embodiment of the present invention.

0024. FIGS. 13-14 are a perspective view and side view respectively of the liner of FIG. 11 in an opened position according to one embodiment of the present invention.

0025. FIG. 15 is an oblique view of a cigarette receptacle with the cover removed and a liner installed in a pail according to one embodiment of the present invention.
FIG. 16 is an oblique view of a cigarette receptacle with the cover removed and a liner installed without a pail according to one embodiment of the present invention.

DEDICATED DESCRIPTION

Referring now to FIGS. 1-2, a disposable, fireproof liner 10 for use in a cigarette butt receptacle is shown according to one embodiment of the present invention. As used herein, the term “fireproof” refers to a material which is very resistant to fire or is treated or manufactured to be very difficult to burn and therefore destroyed by fire. As used herein the term “disposable” refers to a product designed to be disposed of after use. Disposable products are generally products in which the replacement cost is outweighed by other factors such as convenience, quality, environment or safety. In this embodiment the liner 10 is generally frusto-conical in shape and comprises a radial wall 12 intersecting a bottom 14 at a lower end and ending with a radially extending top edge 16 at an upper end. A radially extending top edge 16 allows for easier installation and removal of the liner from the receptacle by providing a convenient secure place to place one’s hands while grasping the liner 10.

The liner 10 is made from a fire resistant material such as metallic foil. The material may be industrial foil, for example, aluminum, aluminum alloy, steel, steel alloy, and foils. In another embodiment, the liner 10 is made from fire resistant plastic. In yet another embodiment, the liner 10 is made from a laminate material having a fire resistant interior surface layer and an external layer made from a different material. The gauge of the foils may be between 0.5 mil to 5.0 mil, for example 1.0 mil to 4.0 mil.

Referring now to FIG. 3, a cigarette receptacle 20 is shown. Cigarette receptacles 20 are available in many configurations and are often referred to as smoking posts, stands, and containers to name a few. Cigarette receptacles 20 of this and other configurations are commonly found in and around buildings. These receptacles often have a base 22 and a cover 23 having an extension 24 a slit or opening 26 is often found somewhere near the top of extension 24. The opening 26 is to allow butts of cigarettes, cigars and other small items to be inserted into the container while restricting access to larger items. The receptacle 20 illustrated in FIGS. 2 and 3 is only one many configurations currently available for cigarette receptacles.

Referring now to FIG. 4, the receptacle 20 shown in FIG. 2 is depicted with a portion of the cover 23 and base 22 cut away. In this view, it can be seen that a pail is located inside the receptacle 20. The pail 30 collects cigarette butts and other debris inserted into opening 26. According to prior art configurations when the pail 30 is full the cover 23 is removed and pail 30 is emptied into a larger trash container (not shown). The pail 30 is generally coated with nicotine and other debris and is generally undesirable to smell as well as touch. Furthermore, if one of the butts is still hot at this point there is a risk that the trash container into which the pail is emptied could catch fire.

According to the present invention, a liner 10 may be inserted into the pail 30 before or after the pail 30 is placed into the receptacle 20. FIG. 5 shows a liner 10 about to be installed in the pail 30. The cover 23 has been removed from the base 22 of the receptacle 20 and the old liner has been discarded. The pail 30 may remain in the base 22 while new liner is lowered into the pail 30. The liner 10 in this embodiment is made of a metallic foil which is fireproof and economically priced. Additionally, it is gauged to provide sufficient ductility to enable it to be easily manipulated.

According to one embodiment of the present invention, a liner is used without pail 30. For example, in FIG. 5 there would be no pail 30. Liner 10 is gauged to be free standing and is installed directly into the base 22 or the receptacle 20.

As shown in FIG. 6 and FIG. 7, when full the liner 10 is removed from pail 30 the side walls 12 near the top edge 16 may be rolled over one upon the other. This seals the liner 10 suffocating any combustion within the liner 10 and keeps the hot debris separate from any combustible material while it cools. Moreover, the ability to close the liner in this fashion prevents any debris, e.g., hot embers and smoke from escaping the liner 10 and igniting combustible material within a larger trash container. FIG. 6 shows the liner 10 in the process of being closed and FIG. 7 shows the liner fully closed and ready to be discarded. While FIGS. 6-7 illustrate the top of the liner 10 rolled upon itself, it is also contemplated that a twisting or folding the liner 10 may be equaling effective in sealing the liner 10.

In one embodiment, the liner 100 is radially pleated in an accordion style so it may be compressed to be compactly stored and shipped within a container; for example a box 40 as seen in FIG. 8. It is also, contemplated that other embodiments of the liner may be conveniently packaged, e.g. the liners 1 of FIG. 1. could be fit one inside the other to be shipped and sold.

FIG. 9 shows one of the liners 100 removed from the box 40 shown in FIG. 8 according to one embodiment of the present invention. As seen radial pleats 111 within radial wall 112 can be unfolded to expand the liner 100. Grip apertures 118 may also be included within the radial wall 112. The radial pleats 111 may be expanded by pushing on the bottom 114 of the liner 100 while holding an upper portion of the liner 100.

FIGS. 10-14 show several other embodiments of the liner of the present invention. As seen in FIG. 9, vertical pleats 211 may be formed in the radial wall 212 of the liner 200. Vertical pleats are provided to increase rigidity in a vertical direction. This design may be particularly appropriate in embodiments in which the liner 200 will be used as a free standing element without the aid of a pail 30.

The liner 300 shown in FIG. 10 may be desirable in some instances due to greater ease of manufacture. As seen two fire resistant sheets such as foil sheets 302 may be held together at seams 304. Seams 304 comprise portions of each sheet where foil has been joined with the foil of the opposing sheet 302. This may be accomplished through, for example, spot welding, adhesive or crimping. If the sheets are comprised of fire resistant plastic appropriate joining may include ultrasonic sealing or a preformed one piece folded design. The liner 300 in this embodiment would also require a bottom (not shown) which would likewise require a seal between the bottom and the sheets 302.

FIGS. 12-14 show yet another embodiment of a liner 400 according to one embodiment of the present invention. In this embodiment, opposing foil sheets 402, 403 are fastened one sheet 402 to other sheet 403 at side edges 404, 406 and bottom edge 405. Sealed edges of the liner 400 seen in FIGS. 12-14 may be fixed as described above with reference to seals in FIG. 10. In this configuration, the liner 400 can be stored and shipped in a flat position. Then before being put into service the liner 400 can be prepared by pulling the
sheets 402, 403 in opposite directions while pressing sealed edges 404 and 406 towards one another. As seen in FIG. 13, the liner 400 in this embodiment has no bottom. Instead, lower portion of the liner 400 is sealed at edge 405.

[0039] The liners of the present invention are generally structured to have a capacity of about 1 quart to about 30 quarts. Liners may have a diameter about 3" to about 24", for example about 8.25" to about 11.5". The liners may have a height of about 5" to about 30", for example about 7.5" to about 10.25"

[0040] As seen in FIG. 15 and as described above the liner 10 may be used in combination with a pail 30. The cigarette receptacle 20 is shown with cover 24 removed so pail 30 and liner 10 may be viewed. In this embodiment, the liner is removed and discarded when full. A new liner 10 is then installed in the pail. As a result, the new liner is installed quickly and easily. In addition, fire hazards are greatly reduced and the pail 30 almost never needs to be replaced. Pails 30 utilized without a liner often become coated with sticky, malodorous tar resin and require replacement.

[0041] FIG. 16 depicts a freestanding liner 200 installed directly into a base 22 of a cigarette receptacle 20 without a pail 30. Again the cigarette receptacle 20 is shown with cover 24 removed. The freestanding liner 200 may or may not have optional supports (not shown) to provide stability. The supports could be in the form of a light metal frame or extensions of the base 22. As in other embodiments, the liner 200 is simply removed, sealed and discarded when full. A new liner 200 replaces the old one and no pails 30 are necessary.

[0042] Whereas particular embodiments of this invention have been described above for purposes of illustration, it will be evident to those skilled in the art that numerous variations of the details of the present invention may be made without departing from the invention as defined in the appended claims.

1. A receptacle for combustible debris comprising:
   a base having at least one wall defining an interior chamber;
   a removable cover atop the base having an opening for receiving the combustible debris;
   a pail positioned under the opening of the removable cover and inside the interior chamber;
   a fireproof, disposable liner inside the pail.
2. The receptacle for combustible debris of claim 1, wherein the fireproof, disposable liner is metallic foil.

3. The receptacle for combustible debris of claim 2, wherein the metallic foil is selected from the group consisting of aluminum, aluminum alloys, steel and steel alloys.

4. The receptacle for combustible debris of claim 2, wherein the metallic foil has a gauge of about 0.5 mil to about 5 mils.

5. The receptacle for combustible debris of claim 4, wherein the metallic foil has a gauge of about 1 mil to about 4 mils.

6. The receptacle for combustible debris of claim 1, wherein the liner has a volume of about 1 quart to about 30 quarts.

7. The receptacle for combustible debris of claim 1, wherein the liner comprises a single radial wall attached to a liner bottom.

8. The receptacle for combustible debris of claim 1, wherein the liner comprises two opposing sheets of metallic foil sealed, wherein the each sheet is sealed to the other along at least two edges.

9. A receptacle for combustible debris comprising:
   a base having at least one wall defining an interior chamber;
   a removable cover atop the base having an opening for receiving the combustible debris;
   a fireproof, disposable liner positioned under the opening of the removable cover and inside the interior chamber.

10. The receptacle for combustible debris of claim 9, wherein the fireproof, disposable liner is metallic foil selected from the group consisting of aluminum, aluminum alloys, steel and steel alloys.

11. A method of emptying a cigarette butt receptacle comprising the steps of:
    removing a cover from the cigarette butt receptacle;
    removing a fireproof liner at least partially filled with cigarette butts or other debris;
    folding and rolling a top edge of the fireproof liner upon other portions of the top edge of the fireproof liner to close the liner;
    disposing of the liner and debris;
    positioning a new liner into the cigarette butt receptacle; and
    replacing the cover on the cigarette butt receptacle.

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