Eco-friendly Incense Burner

Field of Invention

[001] The present invention relates to an eco-friendly incense burner. During burning of incense paper, flying particles are separated out as hot air exits through an exhaust. Entry of fresh air into the burner allows for a complete burning process.

Background

[002] Incense burning has been practiced for a long time. However, burning of incense paper contributes to environmental pollution. Smoke from burning of the incense is unpleasant and is a health concern for some people. During burning, ashes and smoke particles fly free according to rising hot air and surrounding air currents. Sometimes, the burning is intense and naked flames pose a fire hazard. The effects of burning incense paper have affected the harmonious relations among some of the people in a multi-racial and multi-religious community.

[003] It can thus be seen that there is a need to design an eco-friendly burner to address the health and pollution concerns associated with burning of incense paper.

Summary

[004] The following presents a simplified summary to provide a basic understanding of the present invention.

[005] The present invention seeks to provide an eco-friendly incense burner ~~to address air pollution and health concern of people in the community~~.

[006] In one embodiment, the present invention provides an eco-friendly incense burner comprising: a cylindrical shell made of stainless steel, is closed by a top cover and a bottom cover, wherein an array of holes are formed along a circumference of the cylindrical shell at a location below the top cover; a conical exhaust cover is fitted in the

cylindrical shell at a location below the array of holes, wherein the conical exhaust cover has a centre opening and an exhaust pipe is fitted in the centre opening; a circumferential air inlet formed along the cylindrical shell at a location near the bottom cover; a cylindrical ring having a diameter and a length smaller in dimensions than those of the cylindrical shell, with the cylindrical ring being fitted inside the cylindrical shell at a location substantially above the circumferential air inlet; a dual layer burn tray fitted across a bottom of the cylindrical ring, with the dual layer burn tray comprising an upper burn tray and a lower burn tray; a partition plate dividing the upper burn tray into two portions; and a wicket door on an opening on the cylindrical shell at a location substantially above the cylindrical ring for a user to insert incense paper on the upper burn tray. In use, during burning of the incense paper, fresh air is drawn in through the circumferential air inlet and interaction of the fresh air with hot air from the burning incense paper causes a vortex to form below the conical exhaust cover and around the exhaust pipe such that centrifugal forces throw flying ash and smoke particles outwardly to an inside surface of the cylindrical shell, thereby separating the ash and smoke particles that are relatively heavy from the swirling air whilst the hot air rises up through the exhaust pipe and exhausts out through the array of holes, and the ash and smoke particles fall by gravity onto the bottom cover together with ashes generated at the dual burn tray.

[007] Preferably, the array of holes is constituted by a row of holes. Preferably, two wicket doors are provided; preferably, ~~a partition plate divides the upper burn tray into~~ the two portions of the upper burn tray are ~~to~~ associated with the two wicket doors.

[008] Preferably, an ash chamber door is provided at an opening on the cylindrical shell near the bottom cover for clearing ash collected therein.

[009] Due to differences in diameters, a gap exists between the cylindrical shell and the cylindrical ring to allow fresh air to enter and to support burning of the incense paper.

[0010] Preferably, the bottom cover is conical.

[0011] Preferably, stands disposed below the bottom cover are provided to support the eco-friendly incense burner.

result, an air vortex is created inside an upper portion of the eco-friendly incense burner. The air vortex swirls below the conical exhaust cover **122** and around the exhaust pipe **124**. Centrifugal forces throw flying ash and smoke particles outwardly to the inside surface of the cylindrical shell **110**; these ash and smoke particles are relatively heavier than air then fall by gravity into the ash collection chamber **160**. The hot air swirling around the exhaust pipe **124**, now devoid of heavy ash and smoke particles, flows through the exhaust pipe **124** and exhausts out to the exterior through the array of holes **114**. ~~With this eco-friendly incense burner **100**, pollution of air and health concerns associated with burning of incense paper are now addressed.~~

[0021] In one embodiment, the cylindrical shell **110** is made of stainless steel. Preferably, components of the eco-friendly incense burner **100** are made of stainless steel grades 304 or 430. Preferably, the bottom cover **116** is conically shaped to collect ashes at the bottom of the cylindrical shell **110**.

[0022] While specific embodiments have been described and illustrated, it is understood that many changes, modifications, variations and combinations thereof could be made to the present invention without departing from the scope of the present invention. For example, stands **170** are provided below the bottom cover **116** to support the eco-friendly incense burner.

CLAIMS:

1. An eco-friendly incense burner comprising:

a cylindrical shell made of stainless steel, is closed by a top cover and a bottom cover, with an array of holes being formed along a circumference of the cylindrical shell at a location below the top cover;

a conical exhaust cover is fitted in the cylindrical shell at a location below the array of holes, wherein the conical exhaust cover has a centre opening and an exhaust pipe is fitted in the centre opening;

a circumferential air inlet formed along the cylindrical shell at a location near the bottom cover;

a cylindrical ring having a diameter and a length smaller in dimensions than those of the cylindrical shell, with the cylindrical ring being fitted inside the cylindrical shell at a location substantially above the circumferential air inlet;

a dual layer burn tray fitted across a bottom of the cylindrical ring, with the dual layer burn tray comprising an upper burn tray and a lower burn tray;

a partition plate disposed on the upper burn tray for dividing the upper burn tray into two portions; and

a wicket door on an opening on the cylindrical shell is disposed at a height substantially above the cylindrical ring for a user to insert incense paper on the upper burn tray;

so that during burning of the incense paper, fresh air is drawn in through the circumferential air inlet and interaction of the fresh air with hot air from the burning incense paper causes a vortex to form below the conical exhaust cover and around the exhaust pipe such that centrifugal forces throw flying ash and smoke particles outwardly to an inside surface of the cylindrical shell, thereby separating the ash and smoke particles that are relatively heavy from the swirling air whilst the hot air rises up through the exhaust pipe and exhausts out through the array of holes, and the ash and smoke particles fall by gravity onto the bottom cover together with ashes generated at the dual burn tray.

2. The eco-friendly incense burner according to claim 1, wherein the array of holes formed along the circumference of the cylindrical shell at a location below the top cover is constituted by a row of holes.

3. The eco-friendly incense burner according to claim 1 or 2 comprises two wicket doors.

4. The eco-friendly incense burner according to claim 3, ~~further comprising a partition plate disposed on the upper burn tray for dividing the upper burn tray into~~ wherein the two portions of the upper burn tray are associated ~~in association~~ with the two wicket doors.

5. The eco-friendly incense burner according to any one of the preceding claims, further comprising an ash chamber door at an opening on the cylindrical shell near the bottom cover for clearing ash collected therein.

6. The eco-friendly incense burner according to any one of the preceding claims, wherein a gap between the cylindrical shell and the cylindrical ring allows fresh air to enter and to support burning of the incense paper.

7. The eco-friendly incense burner according to any one of the preceding claims, wherein the bottom cover is conical.

8. The eco-friendly incense burner according to any one of the preceding claims, further comprising stands disposed below the incense burner.