PERSONAL SMOKE FILTER OR SMOKE TRAP

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ABSTRACT
A personal smoke filter or smoke trap includes a hollow tube having an input opening to receive the smoke exhaled by a user, and an exit opening. The tube contains a paper filter; a first fiber filter; a carbon filter; and a second fiber filter. The fiber may be polyester. The smoke passes through the filters and out the exit opening, thereby filtering the smoke. Also included are end caps to seal the tube.
PERSONAL SMOKE FILTER OR SMOKE TRAP

RELATED APPLICATIONS

[0001] The present application claims benefit of priority from U.S. Provisional Application No. 61/152,873, filed Feb. 16, 2009, which is incorporated herein by reference in its entirety.

BACKGROUND OF THE INVENTION

[0002] The present invention generally relates to smoking, and more specifically, to a smoke filter.

[0003] After smoking from a pipe, cigar, cigarette, or the like, and inhaling smoke into one’s lungs one must exhale the smoke into the atmosphere.

[0004] As can be seen, there is a need for a filter for exhaled smoke.

SUMMARY OF THE INVENTION

[0005] In one aspect of the present invention, a device to filter smoke includes: a hollow tube having an input opening adapted to receive the smoke, and an exit opening, a paper filter within the tube; a first fiber filter within the tube; a carbon filter within the tube; and a second fiber filter within the tube; wherein the smoke passes through the paper filter, through the first fiber filter, through the carbon filter, through the second fiber filter, and out the exit opening, thereby filtering the smoke.

[0006] In another aspect of the present invention, a personal smoke filter includes: a paper filter; a first polyester filter; a carbon filter; a second polyester filter; a hollow tube having an input opening adapted to receive the smoke from a mouth of a person, and an exit opening, the tube containing the paper filter, the first polyester filter, the carbon filter, and the second polyester filter; and an exhaust exit opening ring for the exit opening of the hollow tube.

[0007] In yet another aspect of the present invention, a method for filtering smoke includes: receiving the smoke from a mouth of a user who exhales the smoke; passing the smoke through a hollow tube; forcing the smoke in the tube through a paper filter, a first fiber filter, a carbon filter, and a second fiber filter; and expelling the filtered smoke.

[0008] These and other features, aspects, and advantages of the present invention will become better understood with reference to the following drawings, description and claims.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 depicts an exploded view of an embodiment of the present invention;
[0010] FIG. 2 depicts a side view the embodiment of FIG. 1 with end caps attached;
[0011] FIG. 3 depicts a side view of the embodiment of FIG. 1 with end caps released; and
[0012] FIG. 4 depicts a cross-sectional view the embodiment of FIG. 1.

DETAILED DESCRIPTION OF THE INVENTION

[0013] The following detailed description is of the best currently contemplated modes of carrying out exemplary embodiments of the invention. The description is not to be taken in a limiting sense, but is made merely for the purpose of illustrating the general principles of the invention, since the scope of the invention is best defined by the appended claims.

[0014] Various inventive features are described below that can each be used independently of one another or in combination with other features.

[0015] Broadly, an embodiment of the present invention generally provides a personal smoke filter or smoke trap.

[0016] An embodiment of the present invention may include a personal smoke filter or smoke trap that may allow the user to exhale the smoke into a filter that may reduce and filter the smoke as it passes through, reducing the smoke and odor that enters the environment.

[0017] As depicted in FIG. 1, an embodiment of the present invention may include a device 10 having end caps 20, 22 that attach onto each end. A tube 30 at a first end of the device 10 may be made of material, such as, but not limited to, acetonitrile butadiene styrene (ABS), polypropylene (PP) or polyvinylchloride (PVC) plastic. Tube 30 may be approximately 4 inches x 2.75 inch, having an input opening 32 on which the user places his mouth to blow smoke in. A one-stage paper filter 40 may start about 1.5 inches inside the opening of the tube 30. This may be followed by a first polyester filter 50, a one-stage activated carbon filter 60, and a second polyester filter 70. At the second end of the device 10 may be an exhaust exit opening ring 80 to form an assembled piece. In other embodiments, cotton is used instead of polyester for filters 50 or 70 or both.

[0018] FIGS. 2 and 3 depict an assembled device 10 having a tube 30 with end caps 20, 22. FIG. 4 depicts a cross-section of the device 10 showing a paper filter 40, a first polyester filter 50, a carbon filter 60, a second polyester filter 70, and an exhaust exit opening ring 80.

[0019] To use an embodiment, one may remove the first end cap 20 from the opening in the tube and the second end cap 22 from the exit, place one’s mouth on the opening 32 and blow smoke in. The top zone inside the tube 30 may be empty for about 1.5 inches to provide an air space 34. The smoke may be forced by the air pressure of the user blowing to pass through a series of one paper filter 40, one activated carbon filter 60, and two polyester filters 50 and 70, surrounding the activated carbon 60 in stages. The air may be expelled from the exit end of the tube 30 through an exhaust exit opening ring 80, containing substantially less smoke and odor than the input air. The caps 20, 22 may help seal each end of the tube 30 so that no odor may emanate from the device when not in use.

[0020] It should be understood, of course, that the foregoing relates to exemplary embodiments of the invention and that modifications may be made without departing from the spirit and scope of the invention as set forth in the following claims.

We claim:
1. A device to filter smoke, comprising:
a hollow tube having an input opening adapted to receive the smoke, and an exit opening;
a paper filter within the tube;
a first fiber filter within the tube;
a carbon filter within the tube; and
a second fiber filter within the tube;
wherein the smoke passes through the paper filter, through the first fiber filter, through the carbon filter, through the second fiber filter, and out the exit opening, thereby filtering the smoke.
2. The device of claim 1, wherein the first fiber filter includes polyester and the second fiber filter includes polyester.

3. The device of claim 1, wherein the input opening is adapted to receive the smoke from a mouth of a user who blows the smoke into the device.

4. The device of claim 1, further comprising:
   a first end cap to releasably seal the input opening; and
   a second end cap to releasably seal the output opening.

5. The device of claim 1, further comprising:
   an air space inside the tube between the input opening and the paper filter.

6. The device of claim 5, wherein the air space is approximately 1.5 inches long.

7. The device of claim 1, further comprising:
   an exhaust exit opening ring.

8. A personal smoke filter, comprising:
   a paper filter;
   a first polyester filter;
   a carbon filter;
   a second polyester filter;
   a hollow tube having an input opening adapted to receive the smoke from a mouth of a person, and an exit opening, the tube containing the paper filter, the first polyester filter; the carbon filter, and the second polyester filter; and
   an exhaust exit opening ring for the exit opening of the hollow tube.

9. The filter of claim 8, further comprising:
   a first end cap for the input opening; and
   a second end cap for the output opening.

10. A method for filtering smoke, comprising:
    receiving the smoke from a mouth of a user who exhales the smoke;
    passing the smoke through a hollow tube;
    forcing the smoke in the tube through a paper filter, a first fiber filter, a carbon filter, and a second fiber filter; and
    expelling the filtered smoke.

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