

MULTI FUNCTION AIR PURIFIER

TECHNICAL FIELD

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The present invention is related to a multi function air purifier which has functions of removing almost all air contaminants and pollutants, killing bacteria, removing foul odors and adding fragrance to the surrounding and also creates clean and healthy air in the surrounding.

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The multi function air purifier can be fitted into any decorative form for home or office or industrial use use, thereby having a secondary function as an office decorative or home furnishing accessory or factory fitting.

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BACKGROUND ART

With increased air pollution in many parts of the world, there have been many approaches to purifying the air. Some devices uses ionization. Some devices uses ultraviolet light and carbon or other types of chemical filters. Some uses HEPA filter to collect micro-contaminants. Some devices kills bacteria too.

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Most of these air purifiers are placed in the home or office and used for their primary function of purifying the surrounding. As such, these air purifiers are not pleasant to the eye.

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Some of the devices using ionization or chemical filters gives off a purified air which is not pleasant to smell.

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The inventor has proposed an improved multi function air purifier which would perform all the functions of removing air pollutants, foul smell, kills bacteria, cigarette smoke, dirt and dust and gives out purified air together with a fragrance so that the surrounding air is pleasant and the environment thus pleasant to be in.

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The improved multi function air purifier can also be fitted into any home or office or industrial decorative piece and thus is not only pleasant to the eye but serves a secondary function as a home or office or industrial decorative accessory.

SUMMARY OF THE INVENTION

It is an object of the invention to have a multi function air purifier for taking air from the surrounding to remove odors, pollutants and contaminants, is anti bacteria and creates negative ions and infrared for clean and healthy air, the multi function air purifier having a housing with:-

an air funnel, with a large air inlet for intake of air from the surrounding and a narrow neck ending with a small air outlet for outflow of air;

an electrically driven fan fitted inside the air funnel,

a container with a mouth and air outlets, the mouth of the container adapted to fit into the narrow neck of the air funnel,

a liquid filter in the container;

a first fabric filter enclosing the air funnel and container; and

a second fabric filter overlaying the first fabric filter;

wherein the electrically driven fan creates a suction force to take in air from the surrounding, forcing the air into the large air inlet of the air funnel and through the small air outlet and the mouth of the container, into the liquid filter in the container, causing removal of air

particles, contaminants, foul odor, cigarette smoke, and producing clean air. The clean air exits from the liquid filter through the air outlets in the container, then through the first fabric filter and finally
5 through the second fabric filter into the surrounding air.

Preferably, the liquid filter of the multi function air purifier is water or any suitable mixture of water and liquid deodorant for removal of air particles, contaminants and foul odor.

10 Preferably, the liquid filter of the multi function air purifier is water or any suitable mixture of water and liquid deodorant for removal of air particles, contaminants, foul odor and also contains a liquid fragrance to add a fragrance to the purified air as it goes into the
15 surroundings.

Preferably, the first fabric filter of the multi function air purifier is a NENOSCIENCE FABRIC containing Copper/Zeolite which consisting of aluminum, silicon, and sodium which has the twice the capacity to absorb
20 ammonia compared to active carbon, hydrogen sulfide, trimethylamine and methyl mercapton and harmful gas and is anti bacteria.

Preferably, the second fabric filter of the multi function air purifier is a NENOSCIENCE FABRIC containing natural minerals which produces
25 negative ion and infrared for clean and healthy air.

Advantageously, the first fabric filter of the multi function air purifier is replaceable and washed in accordance to instructions, after a period of use.

30 Advantageously, the second fabric filter of the multi function air purifier is replaceable and washed in accordance to instructions after a period of use.

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Advantageously, the multi function air purifier has an indicator for the first fabric filter to show the condition of use of the first fabric filter.

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Advantageously, the multi function air purifier has an indicator for the second fabric filter to show the condition of use of the second fabric filter.

10 Advantageously, the multi function air purifier can be fitted into an external receptacle or casing so as to have a secondary function as an furniture accessory or decorative item for the home or office.

BRIEF DESCRIPTION OF THE DRAWINGS

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For a better understanding of the invention, its advantages, and the objects attained by its use, reference should now be made to the accompanying drawing. The accompanying drawing illustrate one or more embodiments of the invention and together with the description
20 herein, serve to explain the workings and principles of the invention.

Fig. 1 is a diagram of an embodiment of the invention as described in this invention.

BEST MODE FOR CARRYING OUT THE INVENTION

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Fig. 1 is a diagram of an embodiment of the multi function air purifier as described in this invention.

30 The multi function air purifier has a housing (not shown) with an air funnel with a large air inlet with a narrow neck ending in a small air outlet. The small neck of the air funnel is adapted to fit tightly into a small mouth of a container. Both air funnel and container are enclosed by two layers of fabric filters.

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The neck of the air funnel fits tightly into the small mouth of the container so that air cannot escape through the gap between the neck of the air funnel and the small mouth of the container. An adjustable
5 electrically driven fan is fitted inside the air funnel.

The container also has small air outlets on its sides, so that clean air leaving the container after passing through the liquid filter can effectively leave through the outlets of the container. A liquid filter is
10 kept inside the container.

The liquid filter can be water or a mixture of water and liquid deodorant or a mixture of water and liquid fragrance. The water acts to remove air pollutants such as dust, dirt, cigarette smoke and other
15 air contaminants. The liquid deodorant acts to remove foul odors. Additionally, if a liquid fragrance is used, either with water or with water and deodorant, the liquid fragrance acts to introduce a sweet and pleasant smell to the surrounding.

20 Both the air funnel and container are enclosed by two layers of fabric filters. The first fabric filter surrounds the conical shaped air funnel and container. The second fabric filter overlays the first fabric filter which encloses the air funnel and container.

25 The first and second fabric filters perform 2 different functions.

The first fabric filter is a NENOSCIENCE FABRIC containing Copper/Zeolite which consisting of aluminum, silicon, and sodium. The first fabric filter is capable of absorbing the four biggest factors in
30 unpleasant odors, namely ammonia, hydrogen sulfide, trimethylamine and methyl mercaptan and is anti bacteria.

The second fabric filter is a NENOSCIENCE FABRIC containing natural minerals produce negative ion and infrared to create clean and healthy
35 air.

A brief description of how the invention works is now given.

The electrically driven fan creates a suction force to take in air from the surrounding. The air is forced through the large air intake of air funnel through the small air outlet of the air funnel and into the small
5 mouth of the container. The air taken in is then forced into the liquid filter in the container, causing removal of air particles, contaminants, foul odor and excess moisture in the surroundings. The clean air after going through the liquid filter is then forced out through the outlets in the container. The outlets typically consists of
10 small openings thereby creating a pressure within the container, thus causing the clean air exiting from the liquid filter to rush out through the air outlets in the container. The clean air rushing through the outlets is then forced through the first fabric filter and finally through the second fabric filter into the surrounding air.

15 The first fabric filter removes unpleasant odors and bacteria. By forcing the exiting clean air through the first fabric filter, the four biggest factors in unpleasant odors, namely ammonia, hydrogen sulfide, trimethylamine and methyl mercaptan are removed. In addition, the first
20 fabric filter has anti bacterial effect.

The second fabric filter creates negative ions and infrared for clean and healthy air.

25 The improved air purifier is thus able to take in surrounding air, remove air pollutants, contaminants and excess humidity by forcing the air taken in into the liquid filter. On going through the first fabric filter, ammonia, hydrogen sulfide, trimethylamine and methyl mercaptan are removed. The first fabric filter is also anti bacteria. On going
30 through the second fabric filter, the exiting air going out back into the surrounding has either no foul odors or has a fragrance. In addition, the exiting air going back into the surrounding would create more clean and healthy air in the surroundings. Such an improved air purifier is also very useful for offices having the " sick office "
35 syndrome.

The improved multi function air purifier can be fitted a first indicator and a second indicator to show the condition of use of the first fabric filter and the condition of use of the second fabric filter. The
5 first fabric filter and second fabric filter can be replaced if the indicators showed the first and second fabric filters are to be replaced.

10 In a domestic environment, the improved multi function air purifier removes from the surrounding air water moisture and contaminants such as air pollutants, dust and dirt. Improvement in air quality and humidity level is thus achieved.

15 For commercial use, the multi function air purifier improves the air quality surrounding the office especially offices affected by the " sick office syndrome " by producing " negative ions " and infrared for clean and healthy air. It also improves air circulation and humidity level.

20 For industrial use, the deodorant process improves the quality of surrounding air achieving total control over the environment and giving protection from harmful gas and is also anti bacteria.

25 The invention can be fitted into an receptacle or outer casing so that it also serves as a home or office decorative piece. Examples of such receptacle or outer casing envisage are flower vase or a four sided picture frame or other form of office or home decorative piece.

30 While an embodiment of the invention have been described, it should be apparent, however, that various modifications, rearrangements, substitutions alterations and adaptations to those embodiments may occur to persons skilled in the art with the attainment of some or all of the advantages of the present invention. Accordingly, it should be clearly understood that the present invention is not intended to be limited by the particular features and structures hereinbefore described and depicted in the accompanying

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drawing. It is therefore intended to cover all such modifications, alterations and adaptations without departing from the scope and spirit of the present invention as defined by the appended claims.

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ADVANTAGEOUS EFFECTS OF THE INVENTION

The invention is an air purifier with multiple functions of air purification, sterilization, removing all dust, dirt and contaminants, foul
10 odor and giving out purified air with a fragrance and creates clean and healthy air.

By incorporating the multiple function air purifier into a decorative receptacle or outer casing, the invention has another function as a
15 home or office or factory decorative piece and need not be viewed as an unsightly equipment without any aesthetic benefit.

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CLAIMS

1. A multi function air purifier for taking air from the surrounding, the
5 multi function air purifier having a housing with:-

an air funnel, with a large air inlet for intake of air from
the surrounding and a narrow neck ending with a small air
outlet for outflow of air;

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an electrically driven fan fitted inside the air funnel,

a container with a mouth and air outlets, the mouth of
the container adapted to fit into the narrow neck of the
15 air funnel,

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a liquid filter in the container;

a first fabric filter enclosing the air funnel and container; and

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a second fabric filter overlaying the first fabric filter;

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characterized by the electrically driven fan creating a suction force to
take in air from the surrounding, the air being forced into the large
air inlet of the air funnel and through the small air outlet and the
mouth of the container, the air passing through the liquid filter in the
container, causing removal of air particles, contaminants, cigarette
smoke, foul odor to produce clean air, the clean air exiting from the
liquid filter into the air outlets in the container, then through the first
30 fabric filter and finally through the second fabric filter into the
surrounding air.

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2. The liquid filter of the multi function air purifier as claimed in Claim
1, wherein the liquid filter can be water or any suitable mixture of
35 water and liquid deodorant for removal of air particles, contaminants,
foul odor.

3. The liquid filter of the multi function air purifier as claimed in Claim 1, wherein the liquid filter can be water or any suitable mixture of water and liquid deodorant for removal of air particles, contaminants, foul odor and containing a liquid fragrance to add a fragrance to the purified air as it goes into the surroundings.
4. The first fabric filter of the multi function air purifier as claimed in Claim 1, wherein the first fabric filter is a NENOSCIENCE FABRIC containing Copper/Zeolite which consisting of aluminum ,silicon, and sodium which acts to remove ammonia, hydrogen sulfide, trimethylamine and methyl mercaptan and is anti bacteria.
5. The second fabric filter of the multi function air purifier as claimed in Claim 1, wherein the second fabric filter is a NENOSCIENCE FABRIC containing natural minerals which produces negative ion and infrared for clean and healthy air.
6. The first fabric filter of the multi function air purifier as claimed in Claim 1, wherein the first fabric filter is replaceable and washed in accordance to instructions after a period of use.
7. The second fabric filter of the multi function air purifier as claimed in Claim 1, wherein the second fabric filter is replaceable and washed in accordance to instructions after a period of use.
8. A multi function air purifier as claimed in claim 1 having additionally an indicator for the first fabric filter to show the condition of use of the first fabric filter.
9. A multi function air purifier as claimed in claim 1 having additionally an indicator for the second fabric filter to show the condition of use of the second fabric filter.

10. A multi function air purifier as claimed in claim 1 which can be
fitted into an external receptacle or casing so as to have a
secondary function as an accessory or decorative item for the home
5 or office.

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