

No. 816,371.

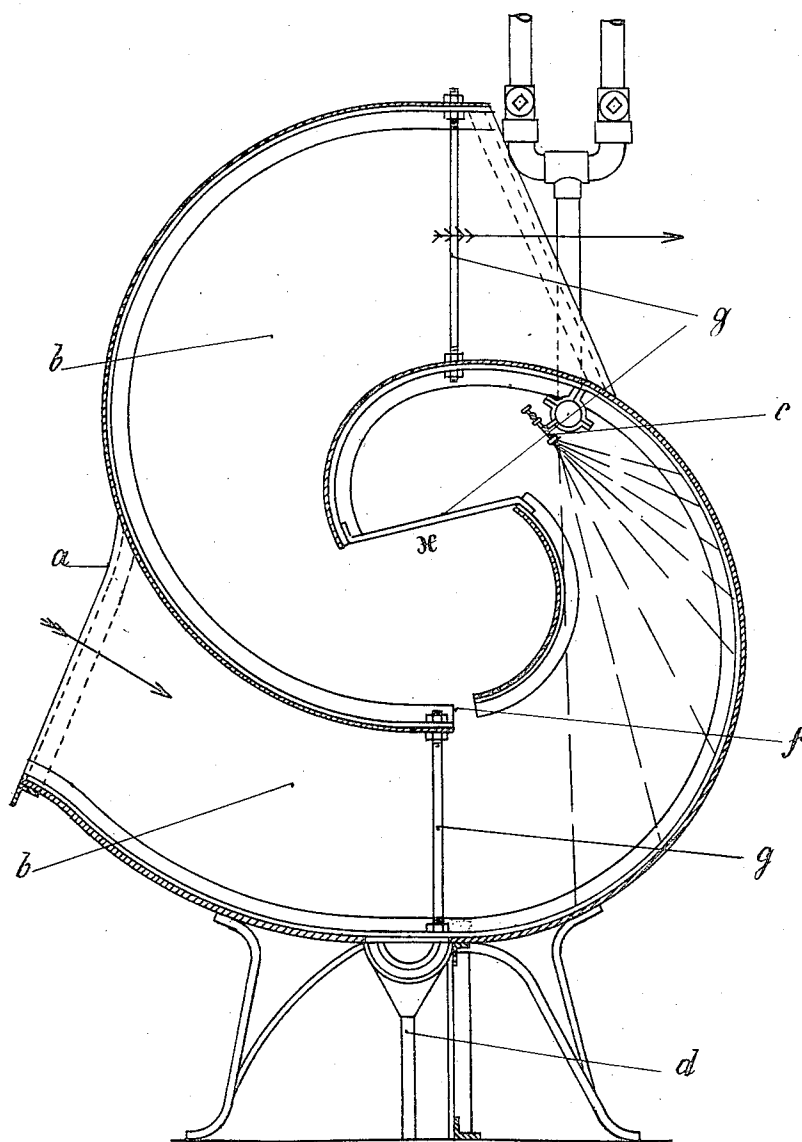
PATENTED MAR. 27, 1906.

H. PLATZ.
AIR PURIFIER.

APPLICATION FILED OCT. 18, 1905.

2 SHEETS—SHEET 1.

Fig. 1.



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Frank Reinhold

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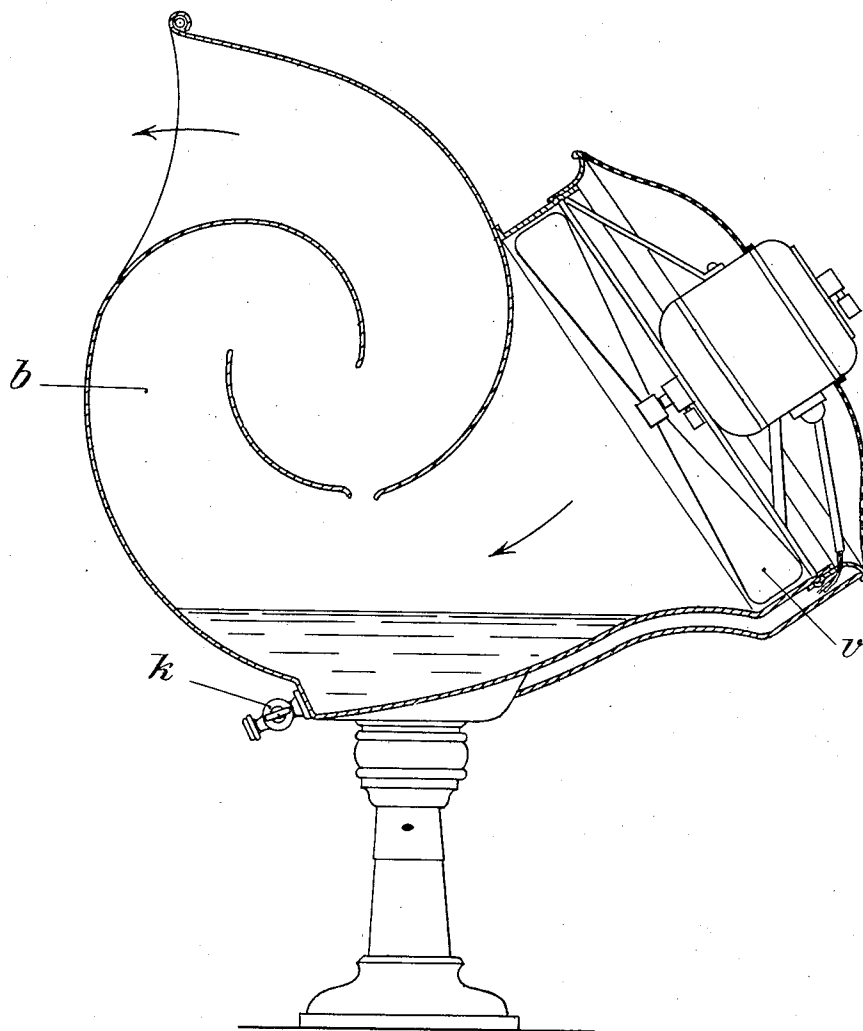
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2 SHEETS—SHEET 2.

Fig. 2.



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UNITED STATES PATENT OFFICE.

HEINRICH PLATZ, OF MUNICH, GERMANY, ASSIGNOR TO THE FIRM OF
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AIR-PURIFIER.

No. 816,371.

Specification of Letters Patent.

Patented March 27, 1906.

Application filed October 18, 1905. Serial No. 283,322.

To all whom it may concern:

Be it known that I, HEINRICH PLATZ, engineer, a citizen of Germany, residing at Munich, Bavaria, Germany, have invented certain new and useful Improvements in Air-Purifiers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to that class of air purifiers or disinfectors in which the air is freed of the dust suspended therein by centrifugal power in that it is forced through spiral or curved channels; and the invention consists in forcing the air through two spiral or convolute channels having their smaller ends connected together, so that the air entering at one of the enlarged ends will attain the greatest speed at the juncture of the two spirals, where it will be partially reversed in its direction of movement, and at this point of juncture an atomizer for water or any suitable disinfecting fluid is provided, so that at the point of greatest centrifugal force the air will meet a layer of finely-divided liquid with which it will be intimately mixed and freed from any dust which may not have already been deposited on the walls of the housing.

In order to render the present invention easily intelligible, reference is had to the accompanying drawings, in which the invention is represented, in—

Figure 1, in a longitudinal vertical section.
Fig. 2 shows a longitudinal vertical section of a modification.

The device, Fig. 1, consists of two funnel-shaped convolute channels *b*, interwound and having their smaller ends curled toward and opening into each other at their point of juncture, as at *x*, thus forming an obvolute. The enlarged end *a* of the lower funnel is the air-inlet and the enlarged end of the upper funnel the outlet, as represented by the arrows.
At the lowest point in the lower funnel an outlet *d* for the liquid is provided, as also at *f* at the lowest point of the upper funnel. Close to the point of juncture of the two funnels and at the smallest cross-section of the channel thus formed an atomizer *c* is provided, to which water or other liquid may be fed by any suitable means which sprays the liquid against the walls of the channel. The whole housing may be strengthened by suitable stays, as at *g g*.

Means may also be employed for heating or cooling the air, which may also be forced through the apparatus by any suitable apparatus.

On entering the apparatus the heavier particles of dust suspended in the air will be thrown against the walls by the centrifugal force, whence they will be washed off by the liquid streaming down the walls. Owing to the fact that the atomizer is situated at the smallest cross-section of the housing, the air will pass through the layer of finely-divided liquid at the moment of its greatest speed, and thus the contact will be most energetic and intimate, whereupon the air slows down again toward the outlet of the apparatus. The whirl caused by the partial reversal of the direction of motion of the air in the obvolute channel will also have the effect of separating out particles of dust and other impurities.

In Fig. 2 is represented a section of a modification of the air-purifier in which the atomizer may be omitted. The washing of the air is effected by a quantity of water contained in the lowest part of the lower channel close after the air entrance and narrowing the section of this channel at this point only immaterially. A certain quantity of this water is carried along by the air sucked in by the ventilator or fan *v* and atomized by the walls of the channel, thus washing and cleaning the air. The lower channel *b* being thus formed as a water-container is provided with a tap *k* for letting out from time to time the dirty water. If it is desired to cool the air to be cleaned or washed when streaming through this apparatus, ice may be put into the lower channel *b*. The melted ice may be let out through the tap *k* or drain-pipe *d*.

I claim as my invention—

1. An air-purifier consisting of a housing having formed therein channels in the shape of superposed funnels having their smaller ends curled toward each other and opening into each other one funnel serving as an inlet and the other as an outlet.

2. An air-purifier consisting of a housing having formed therein channels in the shape of superposed curled funnels having their smaller ends engaging with and opening into each other and means for spraying a liquid over the wall of one of said channels one funnel serving as an inlet and the other as an outlet.

3. An air-purifier consisting of a housing

having formed therein channels having the shape of superposed funnels having their ends curled within each other and opening up into each other, the upper and lower enlarged ends forming the outlet and inlet and an atomizer mounted within the said channel at the point of its smallest cross-section.

4. An air-purifier consisting of a housing having formed therein channels being arranged in the form of superposed funnels having their smaller ends engaging with and opening into each other, the one funnel serving as an inlet and the other as an outlet and of a container being arranged in the lower funnel for taking up water or ice.

5. An air-purifier consisting of a housing having formed therein an obvolute channel with successively converging and diverging

walls, and means for impregnating the air with moisture during its passage there- through.

6. An air-purifier consisting of a housing having formed therein two spiral channels connecting at their smaller inturned ends, a spray device arranged in the channels near the point of junction and operating in a direction opposed to the flow of the air through the channels, and a drain leading from said channel.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

HEINRICH PLATZ.

Witnesses:

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MATHILDE K. HELD.