

(No Model.)

P. BREEN.
AIR PURIFIER.

No. 266,267.

Patented Oct. 24, 1882.

Fig. 1

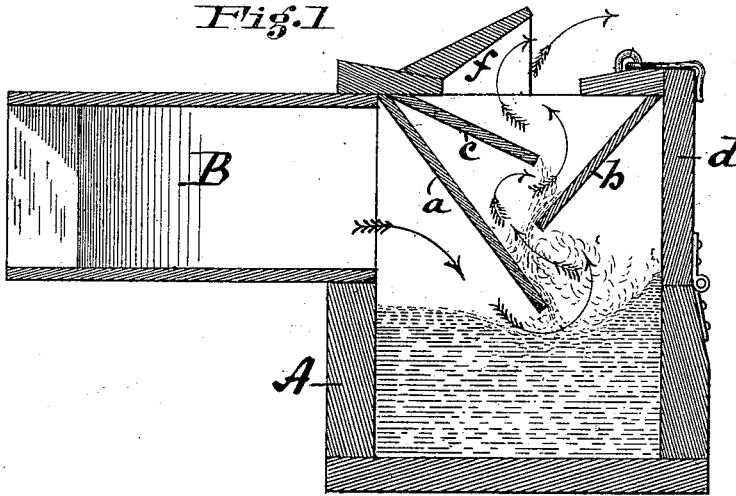
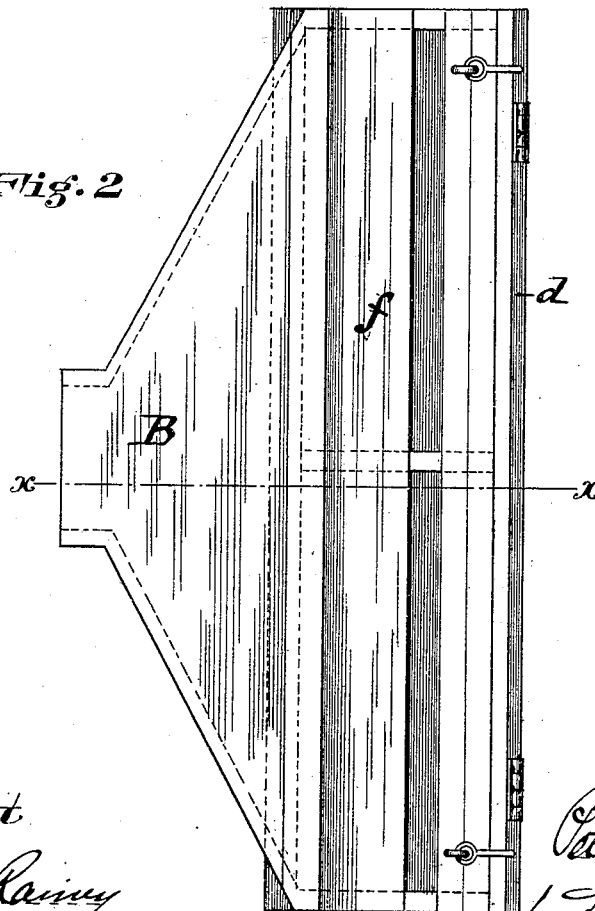


Fig. 2



Attest

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AIR-PURIFIER.

SPECIFICATION forming part of Letters Patent No. 266,267, dated October 24, 1882.

Application filed April 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, PETER BREEN, a citizen of the United States, residing at Cincinnati, Ohio, have invented new and useful Improvements in Air-Purifying Apparatus, of which the following is a specification.

My invention relates to devices to be used for the purpose of purifying and cleansing air from particles of dust, &c., held in suspension therein, and may be applied with advantage to the discharge-conduit of the air-blast used for conveying "shavings," &c., to the boiler-room in furniture-factories, and the like. In such and similar factories it is common to employ a blast of air, conducted in suitable tubes, as the moving force for conveying shavings, chippings, and other fine refuse used as fuel for generating steam into a common receptacle or chamber adjoining the furnace, whence the air is permitted to escape through proper outlets to the outside. In this case, however, the escaping air is charged with particles of sawdust, fine shavings, &c., which, besides being a nuisance to persons passing by or working in the vicinity, settle over out-buildings, lumber, &c., thus covering them with a highly-dangerous deposit of inflammable material in its most combustible form. These objections my invention is designed to remedy; and to this end it consists in the construction and arrangement of apparatus, as hereinafter more fully set forth.

My invention is exhibited in the accompanying drawings, in which Figure 1 is a cross-sectional elevation of the water-box and its deflecting-partitions, taken through the plane of *xx*, Fig. 2; and Fig. 2 is a plan view of the water-box complete.

The apparatus exhibited in the drawings is designed to be used at the outlet end of the air-conduit leading from the shaving-room of furniture-factories, planing-mills, and the like; but, as will be obvious, it may be used in connection with the ventilating air-inlets of railway-cars, flouring-mills, &c.

A in the drawings designates a water box or trough, of any convenient length and size, into which enters the air-conduit B. Water is kept in the trough at a convenient height, and in front of the mouth of the air-conduit B, and extending downward to near the level of the

water, is arranged a deflecting-partition, *a*, by which the incoming current of air is turned downward against the surface of the water. A second deflecting-partition, *b*, is arranged approximately at right angles with the first, depending from the opposite side of the box and terminating above the end of the latter, but leaving between the two a sufficient passage for the air. The first partition is arranged so that the space between it and the level of the water is insufficient for the passage of the air without displacing the water, which, by the mobility of the latter, is forced beyond the partition *a*. As the water tends to seek its level it tends to flow back into the depression thus formed beneath the end of the partition *a*, and by this action the water is sprayed and thrown upward by the air-currents against the under side of the partition *b*, whence it flows downward and drips from the lower end of partition *b* across the intervening space upon the partition *a*, and thence from its lower end across the air-space to the body of liquid in the trough. The course of the air is indicated by the arrows.

My invention is operative and useful to a practicable degree with only the apparatus above described; but it will be obvious that the principle involved in the arrangement of the partitions so as to catch and drip the water across the air-channel may be extended to any number of partitions thus arranged. In practice I find it desirable to add a third deflecting-partition, *C*, arranged above the first and extending far enough to drip upon the second partition *b*. A deflector, *f*, may also be arranged to exhaust the air in a particular direction when necessary.

Where a constant supply of water can be had—as from city mains or any other source of supply—it is desirable to provide for maintaining the water in the trough at a uniform level and restore the loss by evaporation. To this end the ordinary float-regulator may be used and attached to a stop-cock upon the supply-pipe.

In order to afford means of cleaning the trough from the accumulation of trash, the upper and front portion, *d*, of the trough or box is removably attached by hinges, as shown, so as to be readily opened, and is secured by a

hook and staple or some other convenient fastening.

Having described my invention, I claim and desire to secure by Letters Patent—

5 In an air-purifier, a partition arranged in a box containing a body of water in such manner as to deflect the air against the surface of the water at an angle, so as to spray the same, in combination with one or more partitions arranged in the subsequent path of the air, so as

to catch the water-particles and drip them across the air-passage, substantially as set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

PETER BREEN.

Witnesses:

L. M. HOSEA,

GEO. B. MUSCHLER.