

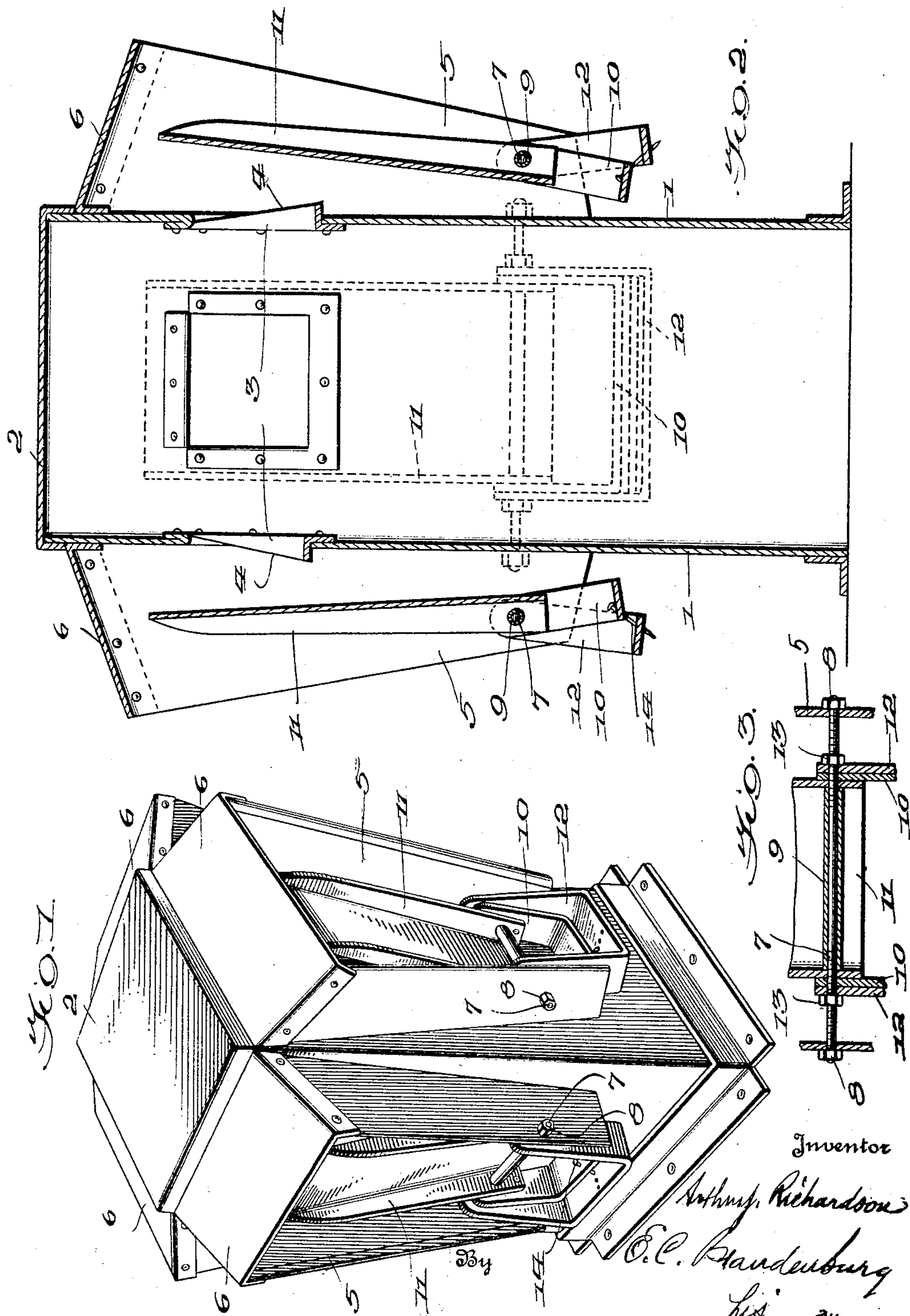
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VENTILATOR

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UNITED STATES PATENT OFFICE

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VENTILATOR

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This invention relates to an improvement in ventilators.

The object of the invention is to prevent down drafts in chimneys, smoke stacks or the like, and also to prevent gases, odors, etc. that may be the result of such down drafts and to exclude all rain or other moisture from leaking into the chimney.

A further object of the invention is to provide dampers for the ventilator which are entirely separate and independent from each other, so as to be free for individual and separate actuation regardless of the actuation of the others.

These dampers may be adjusted to any positions for regulating the desired amount of opening of each of them in order that the draft of the chimney may be positively regulated and controlled. There are preferably four openings or outlets through the ventilator from the chimney, which are of a size such that the aggregate of all of these openings is at least equal to the size of the chimney opening. In this way, when the dampers are open there is a full and complete draft through the chimney which may be regulated by adjusting the positions of the dampers.

In the accompanying drawing:

Fig. 1 is a perspective view of the invention;

Fig. 2 is a vertical sectional view thereof; and

Fig. 3 is a detail sectional view through a portion of one of the dampers.

The walls of the ventilator are designated generally by the numeral 1, being closed at the top by a cap 2. The ventilator may be secured to the top of a chimney or smoke stack in the usual way, so as to completely cover the same in order to regulate and control the discharge of smoke and products of combustion from the chimney. The walls 1 each have an opening 3 therein, about which are out-turned flanges 4 acting as stops for the dampers and to cooperate therewith to close the openings 3. The drawing illustrates four sides to the ventilator, in all of which there are four openings, all of which openings preferably have an aggregate size

at least equal to the size of the chimney opening, so as to have a full draft through the ventilator when the dampers are opened.

Extending outwardly from each of the sides 1 and secured thereto are spaced apart wings 5 closed at the top edges by top plates 6. The wings 5 are disposed on opposite sides of each of the openings 3.

A bolt 7 extends through each of the adjacent wings 5 and is held against removal by nuts 8, which screw on the opposite ends of this bolt. Sleeved over the bolt intermediate the two wings 5 is a sleeve 9 and mounted on the bolt externally of the ends of the sleeve is a supporting yoke 10, to which is fixed a damper 11. Also loosely mounted on the bolt to turn thereon is an adjusting yoke 12, the yokes 10 and 12 being frictionally held in place on the bolt 7 by means of nuts 13, which are threaded on the ends of the bolt outside of the adjustable yoke 12, so as to permit the relative adjustment of these and if desired the locking of them in their adjusted positions.

If desired, fastening devices such as cotter pins 14 may be inserted between the yokes 10 and 12 to hold them in their adjusted positions.

The dampers 11 stand upright in the space between the wings 5 in front of the openings 3 and are freely mounted between the wings 5 by the bolts 7, so as to be free to swing in or out according to the relative forces operated thereon from the inside or outside. The yoke 10 normally acts as a weight to balance each of the dampers 11 while the yoke 12, which is adjustable relative thereto, acts as a counter-balance to be adjusted so as to change the center of gravity of the damper in order that it will normally be suspended in the desired position relative to the corresponding opening 3 through the side of the ventilator.

The yokes 12 may be adjusted to regulate the amount of draft through the openings of the ventilator, after which they may be tightened by the lock nuts 13, which securely or frictionally hold them in their adjusted positions against accidental displacement and

maintain the desired amount of draft through the chimney.

The free mounting or swinging of each of the dampers enables them to be individually
 5 closed by the action of the wind on one or more of them or enables all of them to close simultaneously in the event of a swirl of the wind entirely around the ventilator, but since
 10 this is only temporary and momentary it does not close the chimney for a sufficient length of time to back up the smoke therein. At the same time, the free mounting and suspending of the dampers in their upright positions allows them to be individually ad-
 15 justed and regulated without any connection between the opposite dampers or the use of rods or wires within the ventilator, thus greatly simplifying the structure, assembly and manner of adjustment of the dampers.

20 While the invention is illustrated in connection with a smoke stack or a chimney, it is applicable equally well to any type of opening, as for the ventilation of rooms or buildings, or one or more of the dampers may
 25 be applied to the windows or doors of a room for ventilating purposes. This construction allows consumption of the chimney gas by the provision of the dampers instead of allowing the greater part of it to escape.

30 I claim:

1. A ventilator including a casing having a plurality of openings therein, a damper for each of said openings and standing upright externally thereof, pivotal supporting
 35 means for each of the dampers connected with the lower ends thereof, and means connected with the pivotal supporting means and swingingly adjustable relative to the damper for adjusting the relative positions
 40 of the dampers to the openings.

2. In a ventilator, the combination of a casing having an opening, a damper for regulating the opening, pivotal supporting means for said damper, means connected
 45 with the pivotal supporting means and swingingly adjustable relative to the damper for regulating the normal disposition of the damper to the opening, and means for holding the regulating means in an adjusted
 50 position relative to the damper.

3. In a ventilator, the combination of a casing having an opening therein, a damper for regulating communication through said opening, pivotal supporting means for said
 55 damper, and a yoke adjustably connected with the pivotal supporting means and the damper and adjustable relative thereto for regulating the disposition of the damper relative to the opening.

60 4. In a ventilator, the combination of a casing having an opening therein, a damper for regulating communication through said opening, a bolt supporting said damper, a weight fixed to the damper, and a yoke ad-
 65 justably connected with the bolt and fric-

tionally connected with the damper for adjusting the relative disposition of the damper and opening.

5. In a device of the character described, the combination of a casing having a vent
 70 opening, a damper for regulating the opening, a pivot for supporting the damper, and to allow a swinging thereof relative to the opening, and means connected with said
 75 pivot and movable about the axis thereof for regulating the normal disposition of the damper to the opening.

6. In a device of the character described, the combination of a casing having a vent
 80 opening, a damper for regulating said opening, a journal pin pivotally supporting the damper, and means connected with the journal-pin and swingingly adjustable relative to the damper for adjusting the position of
 85 the damper to the opening, said means being connected with the damper only through the journal-pin.

In testimony whereof I affix my signature.

ARTHUR J. RICHARDSON.

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