

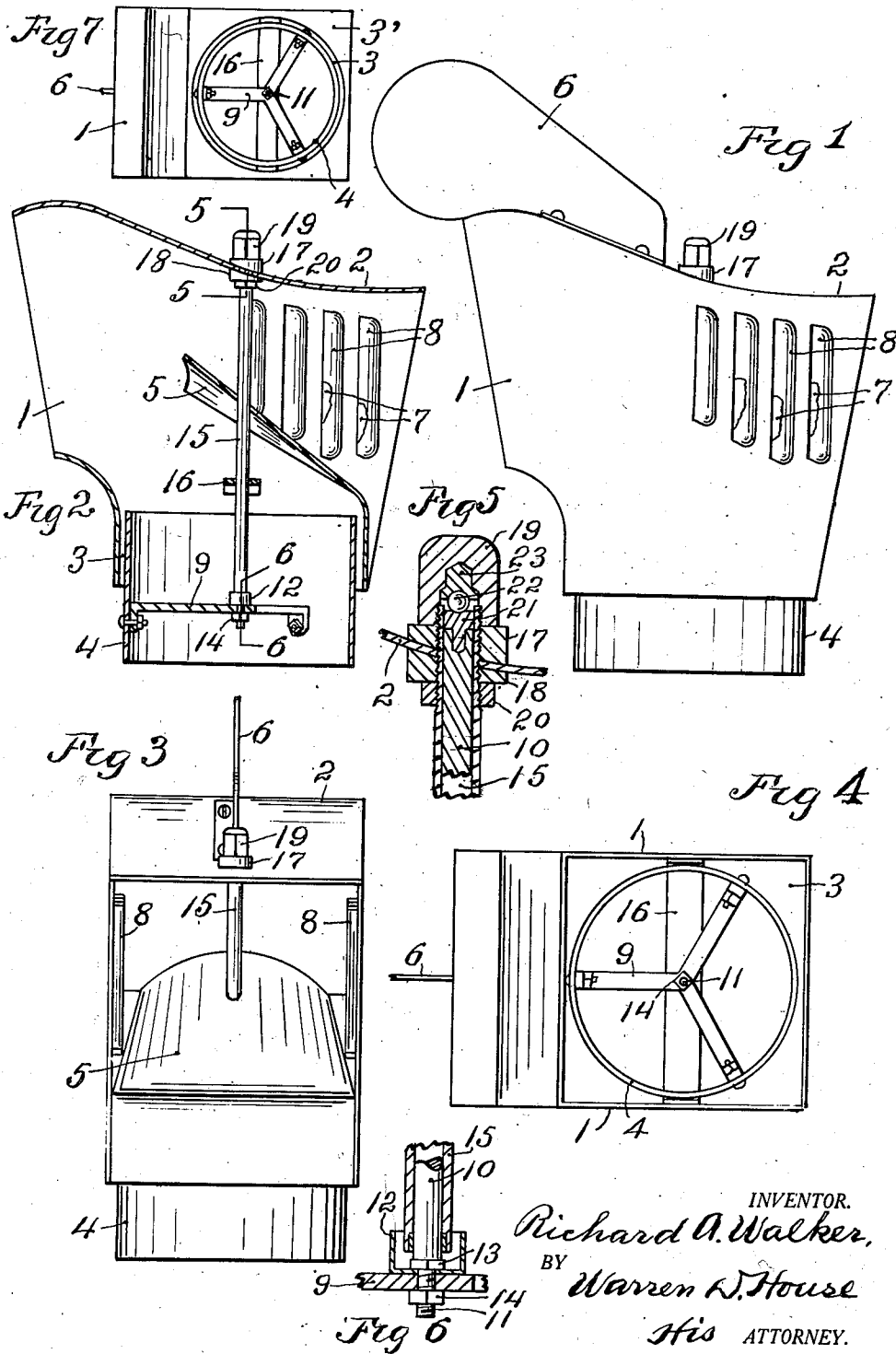
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VENTILATOR

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VENTILATOR

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5 Claims. (Cl. 98—70)

My invention relates to improvements in ventilators of a type provided with a rotary hood or cowl for use on a chimney top or in connection with a room for ventilation.

One object of my invention is the provision of a novel ventilator of the kind described, which is simple in structure, cheap to make, strong, durable, not likely to get out of order, easily and quickly installed by an unskilled person, and which is efficient in its operation.

Another object of the invention is the provision of a novel rotary hood having novel means by which the draft is greatly improved.

A further object of the invention is the provision of novel means for pivotally supporting the hood, which is simple, easily installed, and which reduces the resistance to rotation of the hood to a minimum.

The novel features of my invention are hereinafter fully described and claimed.

In the accompanying drawing, which illustrates my invention:

Fig. 1 is a side elevation of my improved ventilator.

Fig. 2 is a vertical side view of the ventilator shown in Fig. 1, the vane being omitted, and some parts shown in elevation and others in vertical section.

Fig. 3 is a front elevation of the ventilator.

Fig. 4 is a bottom view of the form of the ventilator in which the lower end of the hood has no bottom, but is wholly open.

Fig. 5 is an enlarged section on the line 5—5 of Fig. 2.

Fig. 6 is an enlarged section on the line 6—6 of Fig. 2.

Fig. 7 is a reduced bottom view of a modification in which the square lower end of the hood has a bottom with a circular opening in which is disposed the tubular circular base member.

Similar characters of reference designate similar parts in the different views.

1 designates the two opposite sides, and 2 the upper side of the hood, which in its lower side has an opening 3 into which the upper end of a support comprising a vertical tubular member 4 extends.

The hood has within it a Venturi member comprising a transverse plate 5 having a convex upper side and a concave lower side for a portion of its length. The Venturi member 5 extends to and between the sides 1 of the hood, and upwardly and rearwardly from the front end of the hood above and spaced from the tubular member 4, as shown in Fig. 2. The Venturi plate 5 pro-

vides respectively above and below it two passages which merge together at their rear ends and which respectively communicate with the front end of the hood and with the interior of the tubular supporting member 4.

Upon the upper side 2 of the hood at its rear end is a usual vane 6, disposed vertically in the median line of the top of the hood, and which normally swings the hood with its front end directed to the windward.

Each side 1 of the hood has between the upper side 2 of the hood and the Venturi member 5, means for admitting outside air and guiding it rearwardly through the hood. Such means, as shown, comprises vertical slots or passages 7, from the forward edges of which extend respectively inwardly and rearwardly guiding louvers 8. The outside air entering the hood through the slots or passages 7 is guided rearwardly, and adds its force to the air entering the hood through the front end thereof, thus providing an increased draft upwardly through the tubular member 4, and the air passage under the Venturi member 5.

For rotatably supporting the hood, the following described mechanism is provided.

9 designates a three arm bracket which has the ends of its arms fastened to the inner wall of the tubular member 4.

A vertical rod 10 has a lower end portion 11 of reduced diameter threaded and extended through a vertical central hole in the bracket 9, and through the bottom of an oil cup 12 on the upper side of the bracket 9, Figs. 2 and 6.

A nut 13 on the rod portion 11 in the cup 12, clamps the cup to the bracket 9, and a nut 14 on the portion 11 bears against the under side of the bracket 9, whereby the rod 10 is held rigidly fastened to the bracket 9.

Encircling the rod 10 and revoluble around the rod is a vertical tube 15, which extends upwardly through a transverse bar 16, the ends of which are attached to the inner sides of the sides 1 of the hood. The tube 15 also extends through a hole provided in the Venturi member 5. The upper end portion of the tube 15 is exteriorly threaded, said portion being extended through a hole provided in the upper side 2 of the hood.

Bearing against the upper and lower sides respectively of the upper side 2 of the hood are two collars 17 and 18. A nut 19 on the threaded upper end of the tube 15 clamps the upper collar 17 against the top 2 of the hood, and a nut 20 on the threaded part of the tube 15 clamps the

lower collar 18 against the under side of the top 2 of the hood.

In the upper end of the rod 10 is mounted a fiber pad 21 on the upper end of which rests a ball 22, which supports a pad 23 also of fiber, mounted in the nut 19, whereby the tube 15 and the hood are rotatably supported on the rod 10.

When the wind veers, the vane 6 swings the hood 1 and the tube 15 around on the rod 10 until the front end of the hood faces windward, at which time the wind entering the hood through its front end, and through the side slots or passages 7, passes out of the rear end of the hood. The louvers 8 guide the air entering through the slots or passages 7 rearwardly, thus adding force to the air current, whereby a strong upward draft is created through the supporting tubular base member 4 and through the passage in the hood under the Venturi member 5.

The modified form of the ventilator, shown in Fig. 7, corresponds in structure to the form shown in Fig. 2, excepting that in the form, shown in Fig. 7, the square lower end of the hood 1 is provided with a bottom 3' having a circular opening 3 through which extends the tubular base member 4. In some locations and conditions of wind currents, the presence of the bottom 3', effects an increased upward draft through the base member 4.

Other modifications of my invention, within the scope of the appended claims, may be made without departing from the spirit of my invention.

What I claim is:

1. In a ventilator of the kind described, a vertical tubular support, a hood open at its front and rear ends and having an opening in its lower side into which said support extends, and having within it a transverse Venturi member spaced from and extending upwardly and rearwardly over said support, and providing respectively above and below said member two passages merging together at their rear ends and respectively communicating with said tubular support and the front end of said hood, the sides of said hood between the upper side thereof and said Venturi member having each louver covered air intake passages, and means for revolubly supporting said hood on a vertical axis on said support, said hood having a vane disposed to normally swing said hood with its front end directed to the windward.

2. In a ventilator of the kind described, a vertical tubular supporting member, a hood open at its front and rear ends, and having in its lower side an opening into which extends said tubular member, and means revolubly supporting said hood on a vertical axis on said support, said hood having a vane disposed to normally swing said hood with its front end directed to the windward, said hood having within it a transverse Venturi member spaced from and extending upwardly and rearwardly over said tubular member, and providing two passages merging

together at their rear ends and respectively communicating with said tubular member and the front end of said hood, said hood having in each side between the upper side thereof and said Venturi member means for admitting air from the outside into said hood, said hood having means for guiding the air so admitted rearwardly.

3. In a ventilator of the kind described, a vertical support, a vertical rod, means rigidly supporting said rod at its lower end axially on said support, a tube encircling and axially revoluble on said rod and having an exteriorly threaded upper end, a hood open at its front and rear ends and having in its lower side an opening into which said support extends, and having within it a Venturi member extending upwardly and rearwardly above and spaced from said supporting member and transversely across said hood, the threaded upper end of said tube extending through the upper side of said hood, two nuts on said threaded portion of said tube respectively above and below the upper side of said hood, means held by said nuts clamped to the upper and lower sides of the top of said hood supporting said hood, and means on the upper end of said rod revolubly supporting said upper nut, and thereby said hood and said tube, said hood having a vane disposed to normally swing said hood with its front end directed to the windward.

4. In a ventilator of the kind described, a hood open at its front and rear ends, and having a draft opening in its lower side, and having within it a transverse Venturi member inclining upwardly and rearwardly over said opening and providing two passages merging at their rear ends and respectively communicating with said front end and said opening, each side of said hood having between said Venturi member and the upper side of said hood means for admitting outside air, said sides of said hood having means for guiding rearwardly the air so admitted, and means pivotally supporting said hood on a vertical axis.

5. In a ventilator of the kind described, a vertical tubular supporting member, a hood open at its front and rear ends and having in its lower side an opening into which discharges said tubular member, a vertical rod, means rigidly supporting said rod axially on said supporting member, a vertical tube encircling and revoluble around said rod and having an exteriorly threaded upper end portion extending through the upper side of said hood, two nuts mounted on said threaded portion respectively above and below said upper side, means between said nuts having clamping holding engagement with said upper side of said hood, and a ball supported upon the upper end of said rod and supporting revolubly the upper one of said nuts, and thereby, said tube and said hood.

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