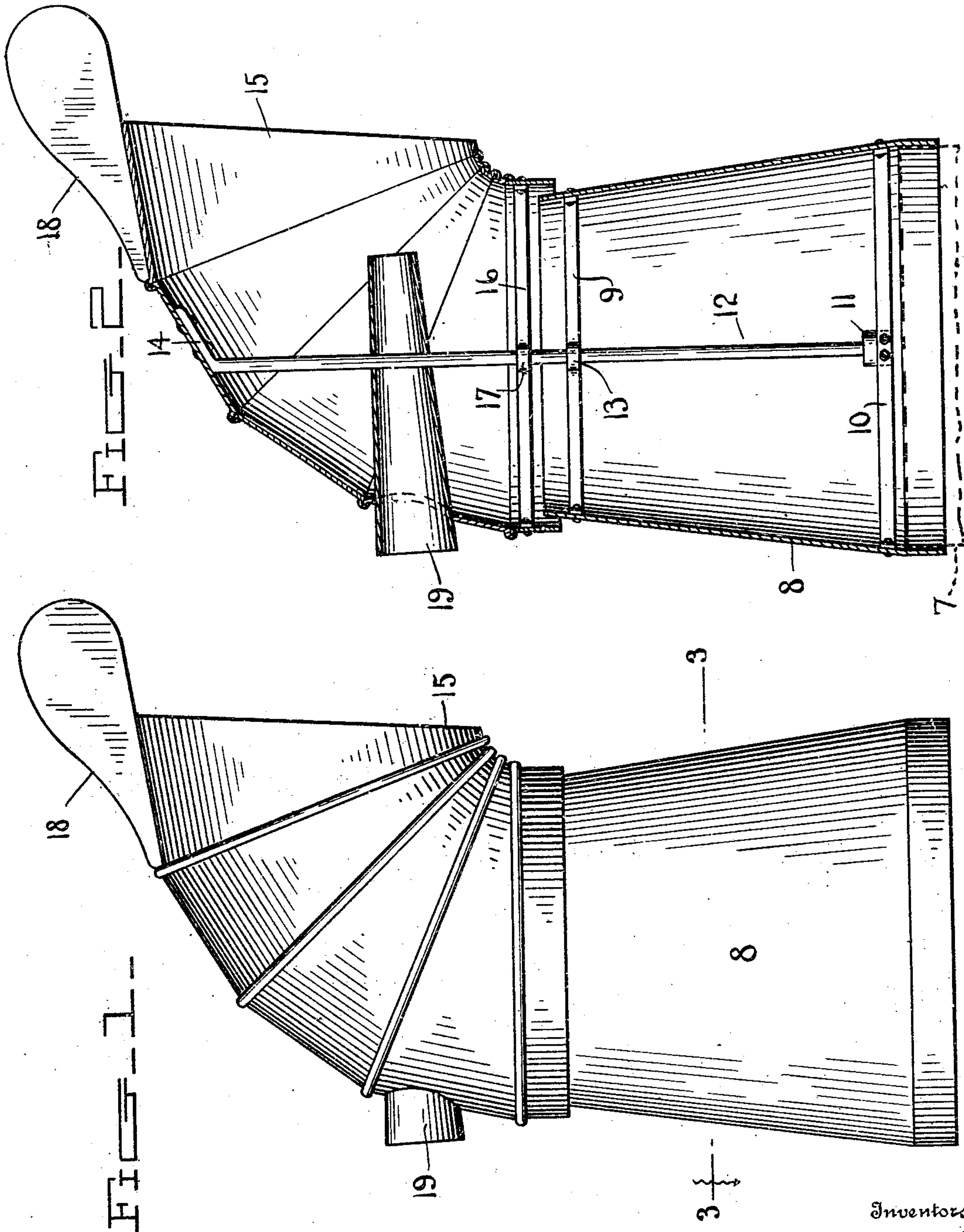


G. K. & A. A. LARSON.
 SUCTION VENTILATOR.
 APPLICATION FILED JAN. 27, 1909.

Patented Jan. 18, 1910.

2 SHEETS—SHEET 1.

946,941.



Witnesses

L. B. James
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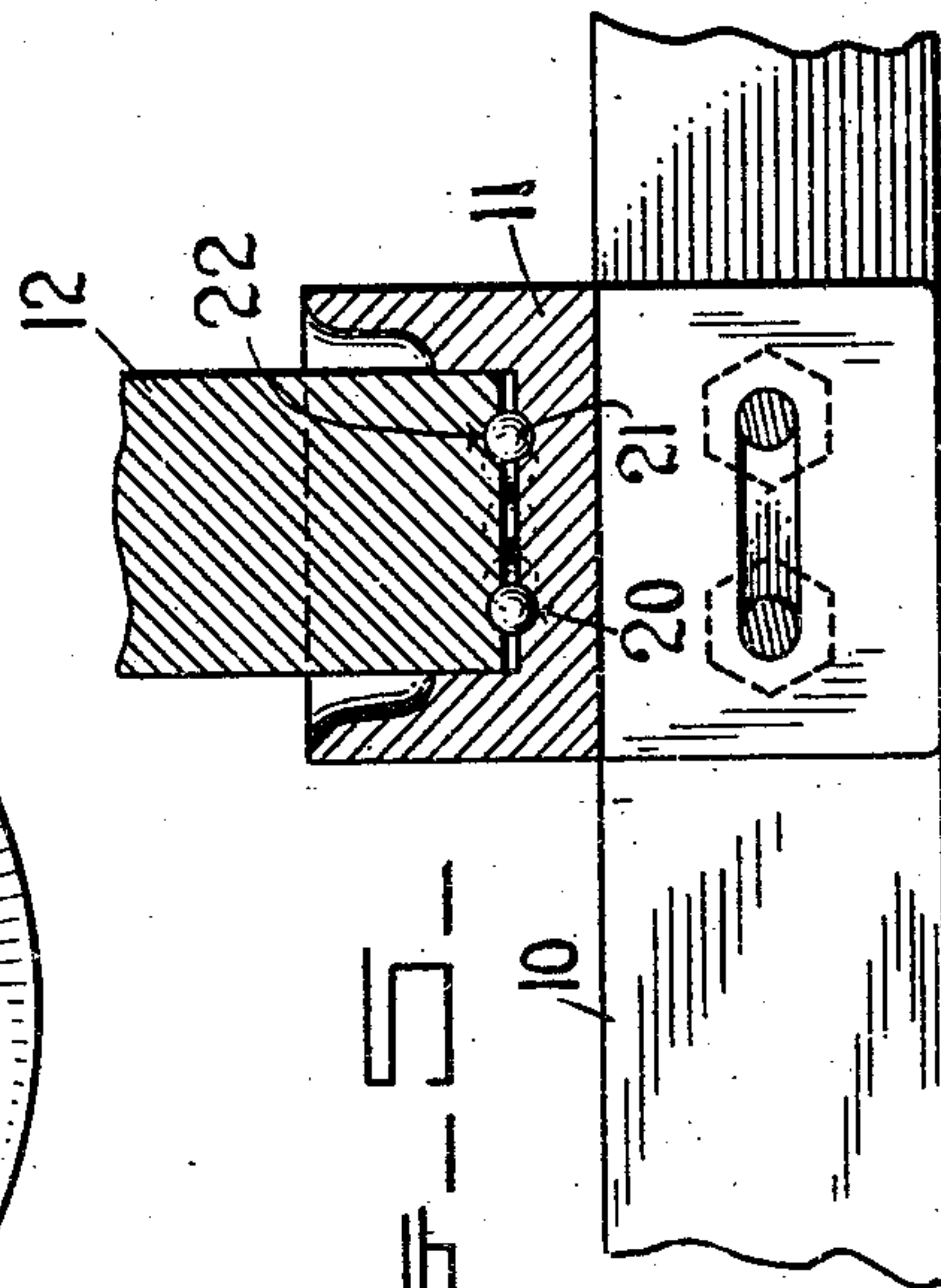
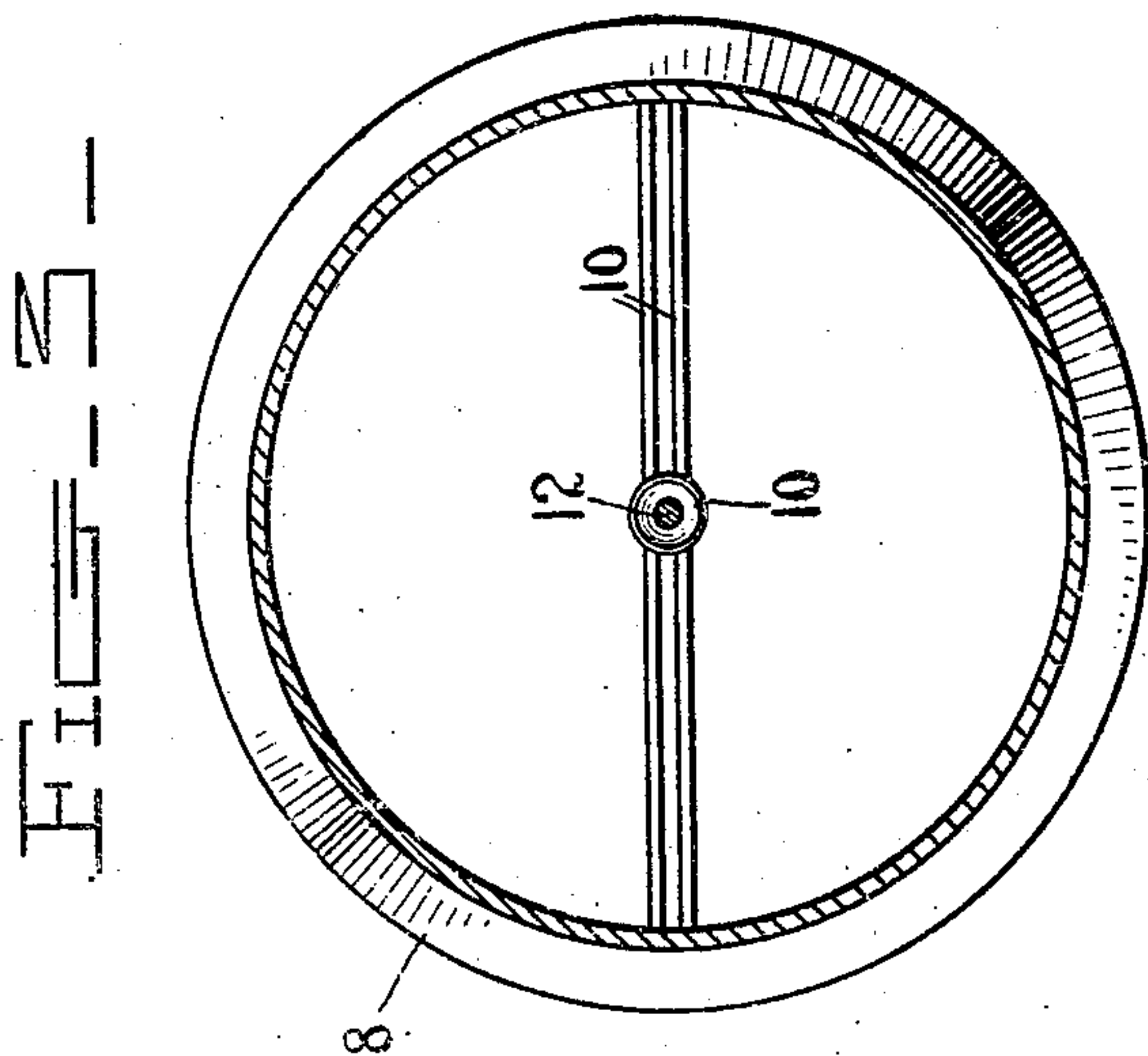
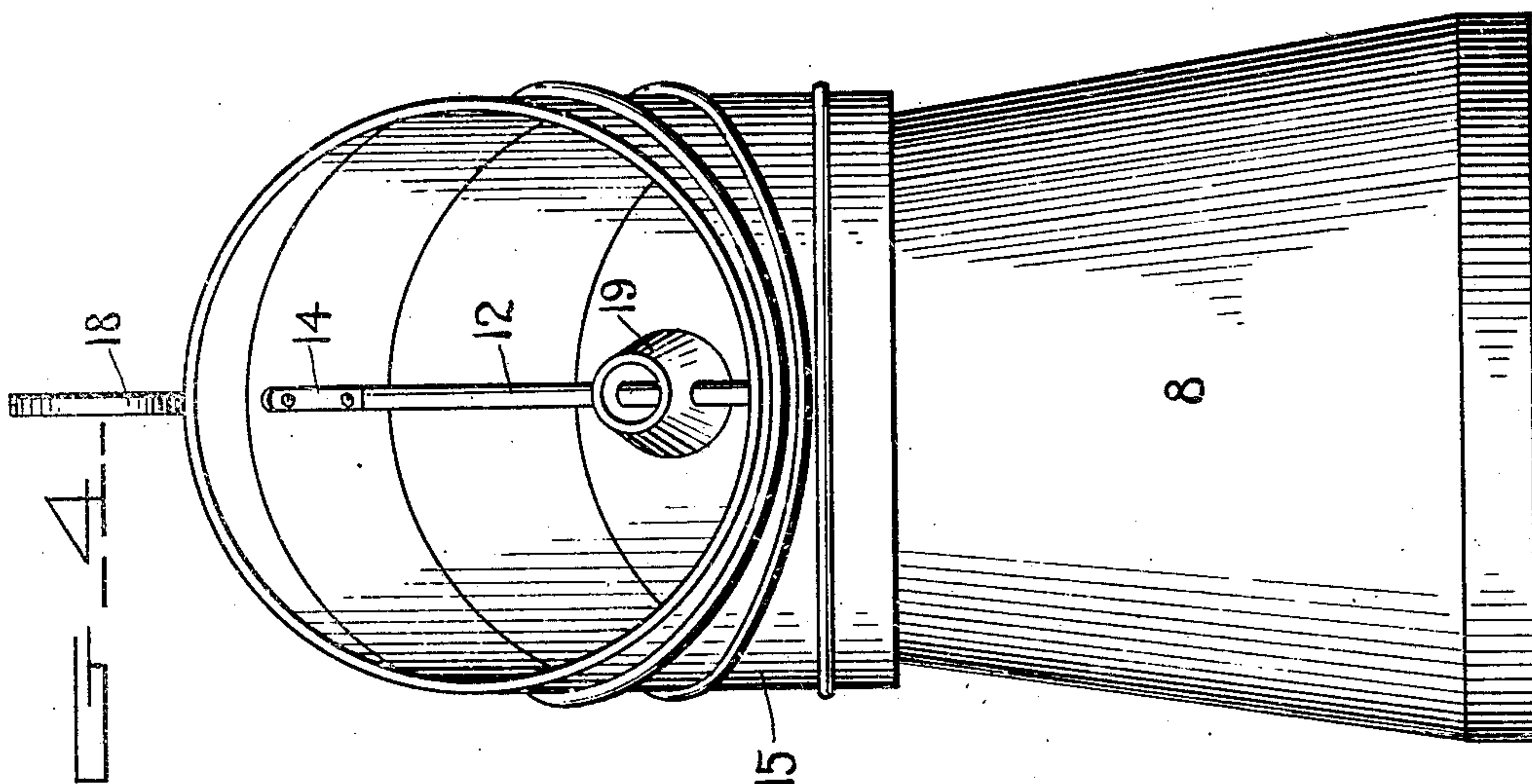
Attorneys

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UNITED STATES PATENT OFFICE.

GUST K. LARSON AND AUGUST A. LARSON, OF JOHNSONBURG, PENNSYLVANIA.

SUCTION-VENTILATOR.

946,941.

Specification of Letters Patent.

Patented Jan. 18, 1910.

Application filed January 27, 1909. Serial No. 474,576.

To all whom it may concern:

Be it known that we, GUST K. LARSON and AUGUST A. LARSON, citizens of the United States, residing at Johnsonburg, in the county of Elk, State of Pennsylvania, have invented certain new and useful Improvements in Suction-Ventilators; and we 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 invention relates to a ventilator and more particularly to the class of suction ventilators or hoods for effectively creating draft in flues or the like.

The primary object of the invention is the provision of a suction ventilator in which an increased and positive draft is effected through a flue or the like and which is extremely sensitive so as to immediately respond to changes in the direction of air currents so as to adjust itself by rotary movement to permit the discharge of smoke issuing from the chimney in the same direction in which the wind is blowing.

Another object of the invention is the provision of a suction ventilator in which there is provided an air tube or duct leading from the back of the cowl to its discharge opening so as to cause an increased suction in a flue or the like, thus enabling the gases or smoke to be drawn upward through the flue and out of the ventilator in a positive and effective manner.

A further object of the invention is the provision of a suction ventilator which will respond quickly and immediately by the changes of the wind so as to cause smoke and gases issuing from the ventilator to be discharged in the same direction in which the wind is blowing and at the same time effecting a suction in the chimney thus insuring an increased draft therethrough and thereby improving the discharging capacity of the chimney or the like.

With these and other objects in view the invention consists in the construction, combination and arrangement of parts as will be hereinafter more fully described in detail, illustrated in the accompanying drawings which disclose the preferred form of embodiment of the invention so as to enable those skilled in the art to practice the same and as brought out in the claim hereunto appended.

However, it is to be understood that changes, variations and modifications may be made such as come properly within the scope of the appended claim without departing from the spirit of the invention.

In the drawings: Figure 1 is a side elevation of the suction ventilator mounted upon a flue in accordance with our invention. Fig. 2 is a sectional view thereof. Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 1. Fig. 4 is a view looking toward the mouth of the ventilator. Fig. 5 is a fragmentary view partly in section of the cup bearing for the lower end of the rotary shaft of the ventilator.

Similar reference characters indicate corresponding parts throughout the several views in the drawings.

In the drawings the numeral 7 designates generally the upper end of a flue or stove pipe which is of cylindrical formation as of the ordinary construction. To the flue or stove pipe 7 is connected a hollow cylindrical base or tube 8 with which are secured upper and lower cross brackets 9 and 10 the latter having secured centrally thereto a cup-shaped bearing 11 in which is fitted the lower end of a rotatable spindle 12 which latter passes upwardly through the center of the flue and is surrounded by a collar 13 formed centrally in the bracket 9.

Secured to the offset end 14 of the spindle 12 is an elbow-shaped pipe forming a ventilator 15 the lower end of which encircles a portion of the upper edge of the flue 7 and secured within the ventilator 15 near its lower end is a bracket 16 the latter formed with a central collar 17 which surrounds the spindle 12 so as to rigidly support the ventilator and prevent any displacement thereof when rotating due to the changes of the wind.

Rising from the top of the ventilator 15 and projecting a slight distance beyond the mouth or discharge opening thereof is a wing or vane 18 which causes the ventilator to be turned by the wind and thereby permit smoke or gases from the flue to discharge in the direction of the wind and in this manner the said smoke or gases are prevented from being blown down into the flue.

Leading from a slight distance beyond the back of the ventilator 15 and projecting a considerable distance within the same at substantially right-angles to the axis of the

flue 7 and in the path of the mouth or discharge opening of the ventilator is a frusto-conical air tube or duct 19 through which a current of air passes while the wind is blowing so as to increase the suction or in other words establish a draft in the flue 7 as well as in the ventilator 15 thus causing gases or smoke to be drawn upward through the flue and out of the ventilator in the direction of current of the wind. It is clearly obvious that the current of air passing through the air tube or duct 19 draws the smoke or gases with it through the flue and ventilator and thereby increases the draft of the said flue.

Within the bottom of the cup-shaped bearing 11 is formed an annular raceway 20 in which are arranged a series of balls 21 the latter also engaging an annular raceway 22 formed in the lower end of the spindle 12 and in this manner when the spindle 12 is rotating the friction is reduced to a minimum. Also the balls 21 arranged within the cup-shaped member and their particular arrangement will enable the said spindle 12 to rotate freely so that the ventilator 15 will be extremely sensitive and there-

by respond instantly to the changes of the wind.

What is claimed is—

The combination with a stationary flue having a centrally located cup-shaped bearing therein, of a rotary hollow hood having a mouth portion with its free edge upwardly diverging with respect to a vertical plane at right angles to the vertical plane which passes through the center of the mouth and the axis of rotation of the hood, a forwardly tapering air tube leading into the hood and terminating beyond the axis thereof in the path of the mouth of the hood and having its upper and lower portions inclined rearwardly and downwardly, and a spindle fixed to the top of the hood and detachably engaging in the bearing to enable easy removal of the said hood.

In testimony whereof, we affix our signatures in presence of two witnesses.

GUST K. LARSON.

AUGUST A. LARSON.

Witnesses:

R. F. JONES,

CLINTON JONES.