

No. 871,146.

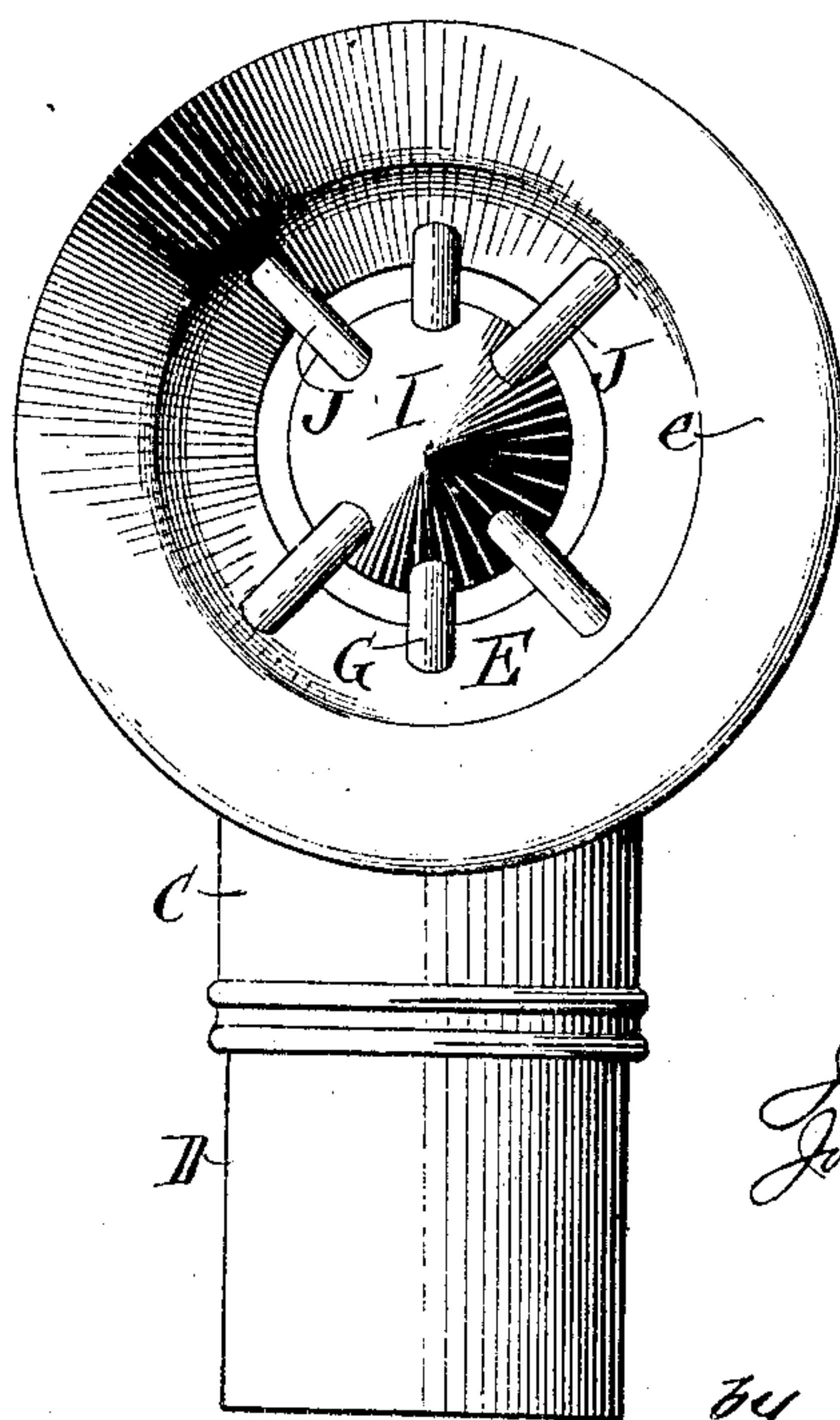
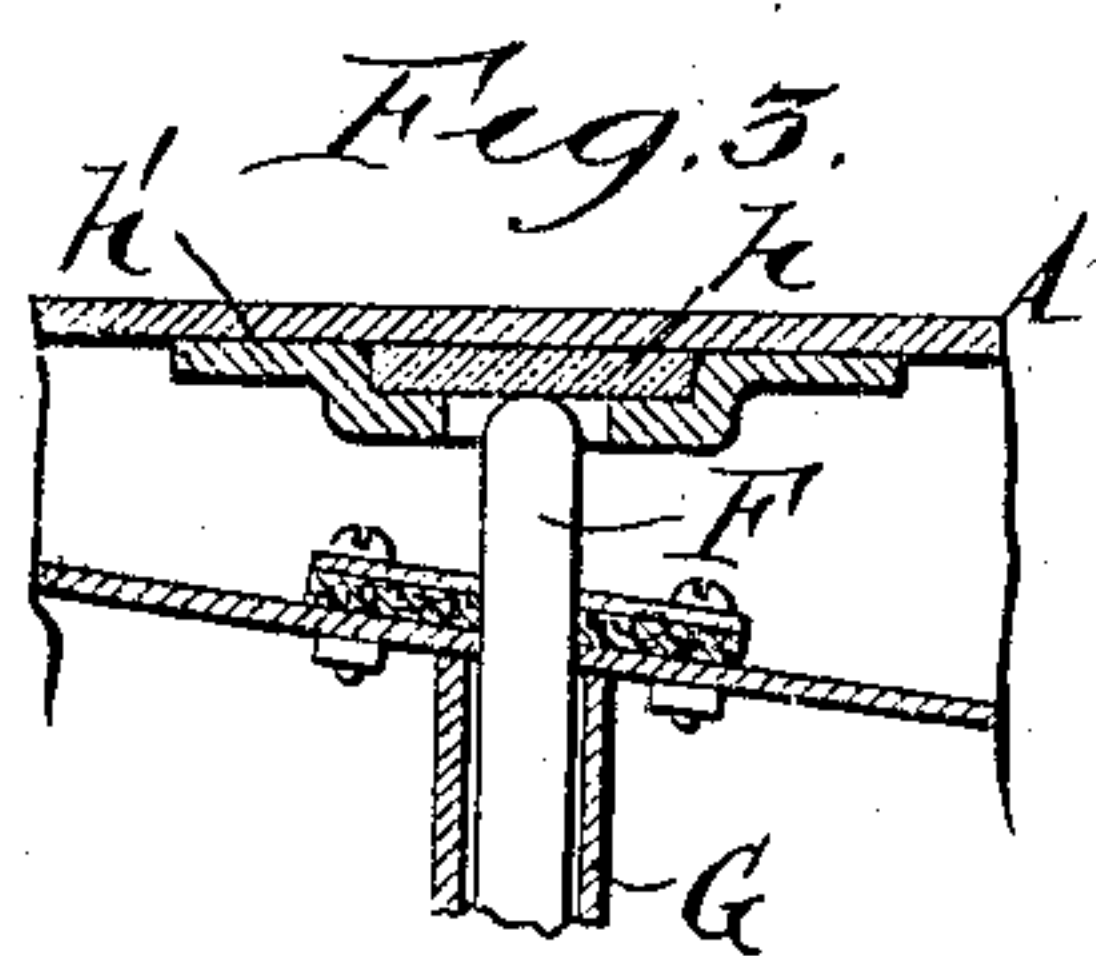
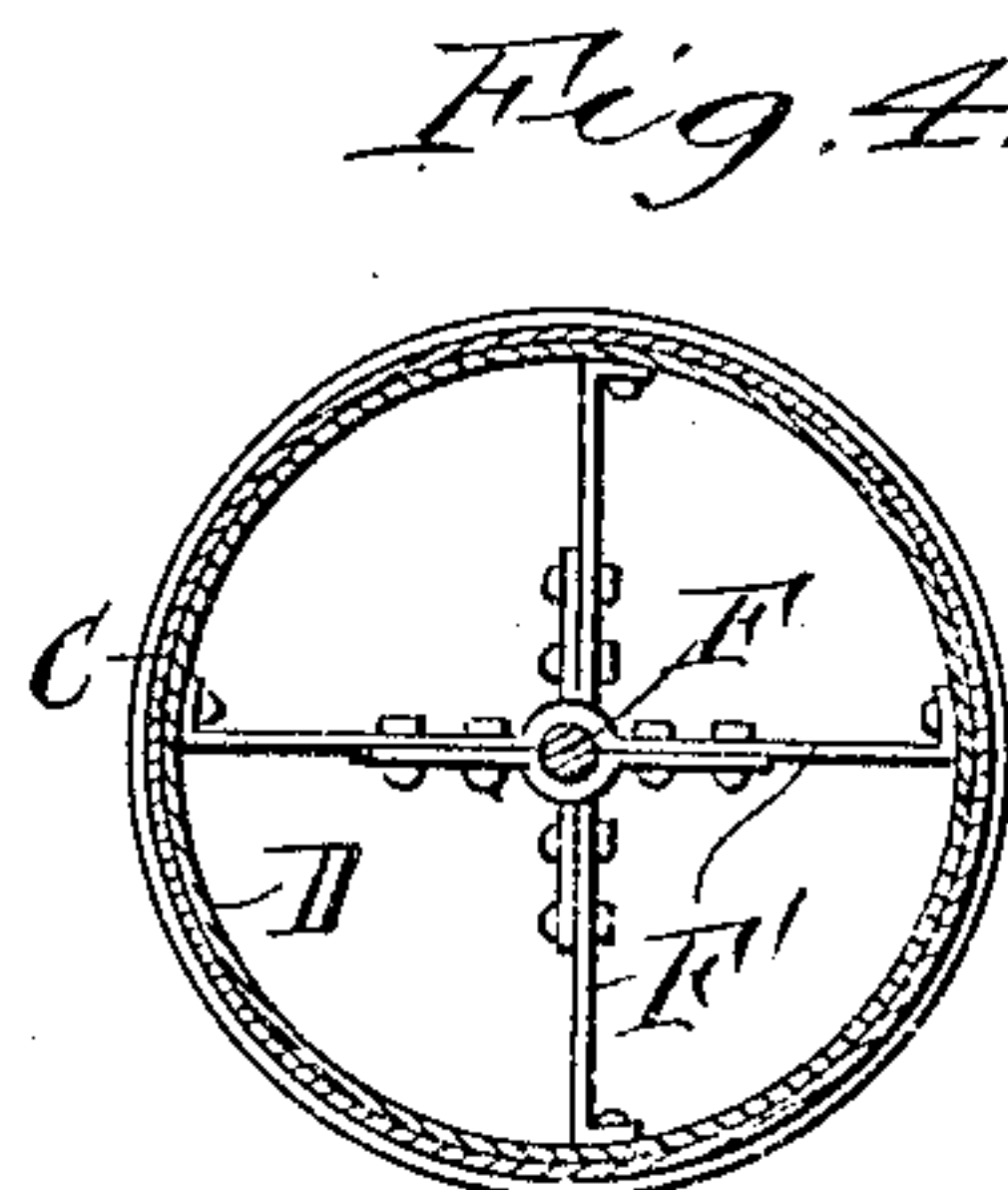
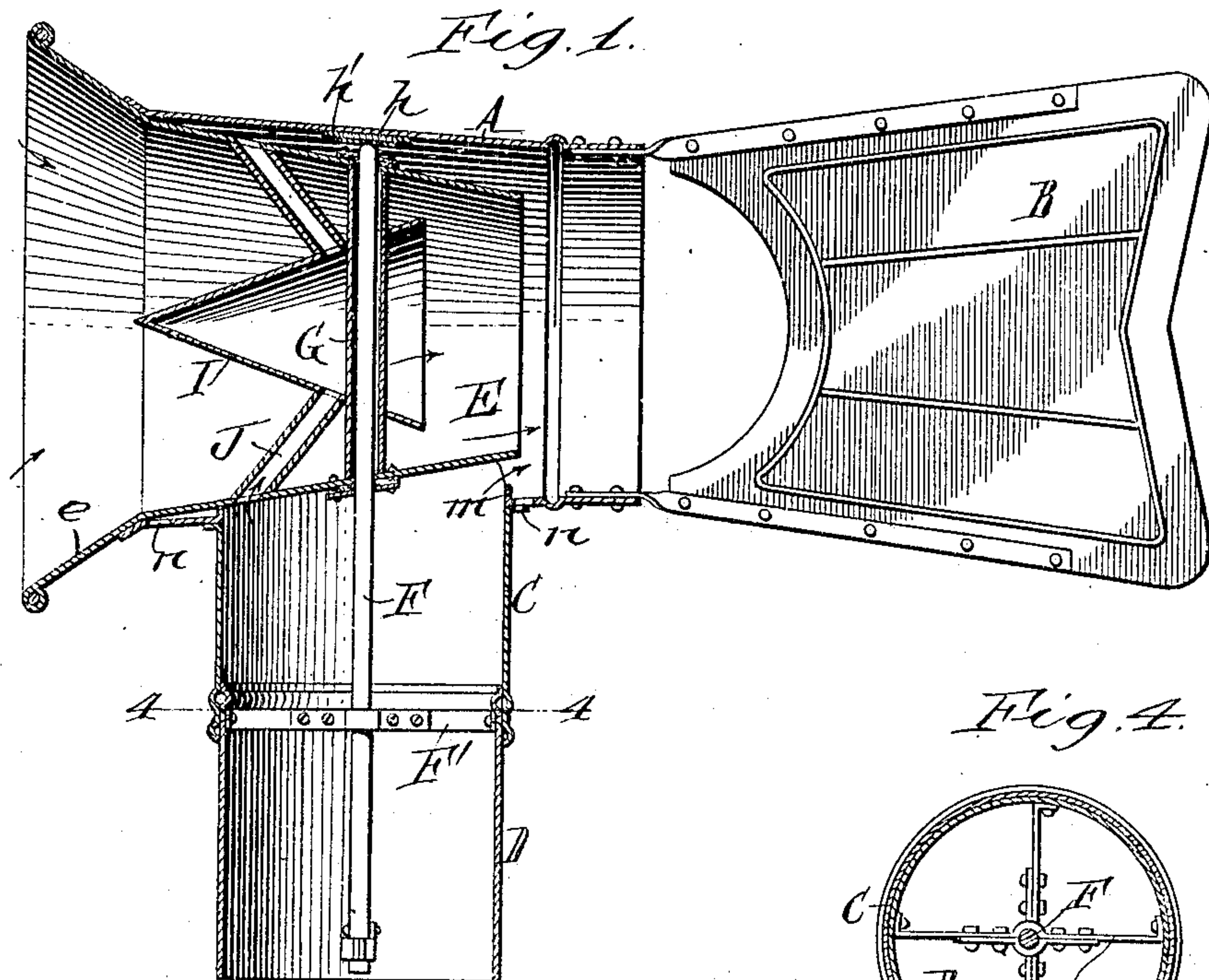
PATENTED NOV. 19, 1907.

J. C. ROTH & J. J. WELSHOFER.

VENTILATOR.

APPLICATION FILED MAR. 8, 1906.

2 SHEETS—SHEET 1.



Witnesses:
Louis W. Gratz.
Ruth Tarbell.

Joseph C. Rott,
John J. Welshofer,
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Attorneys.

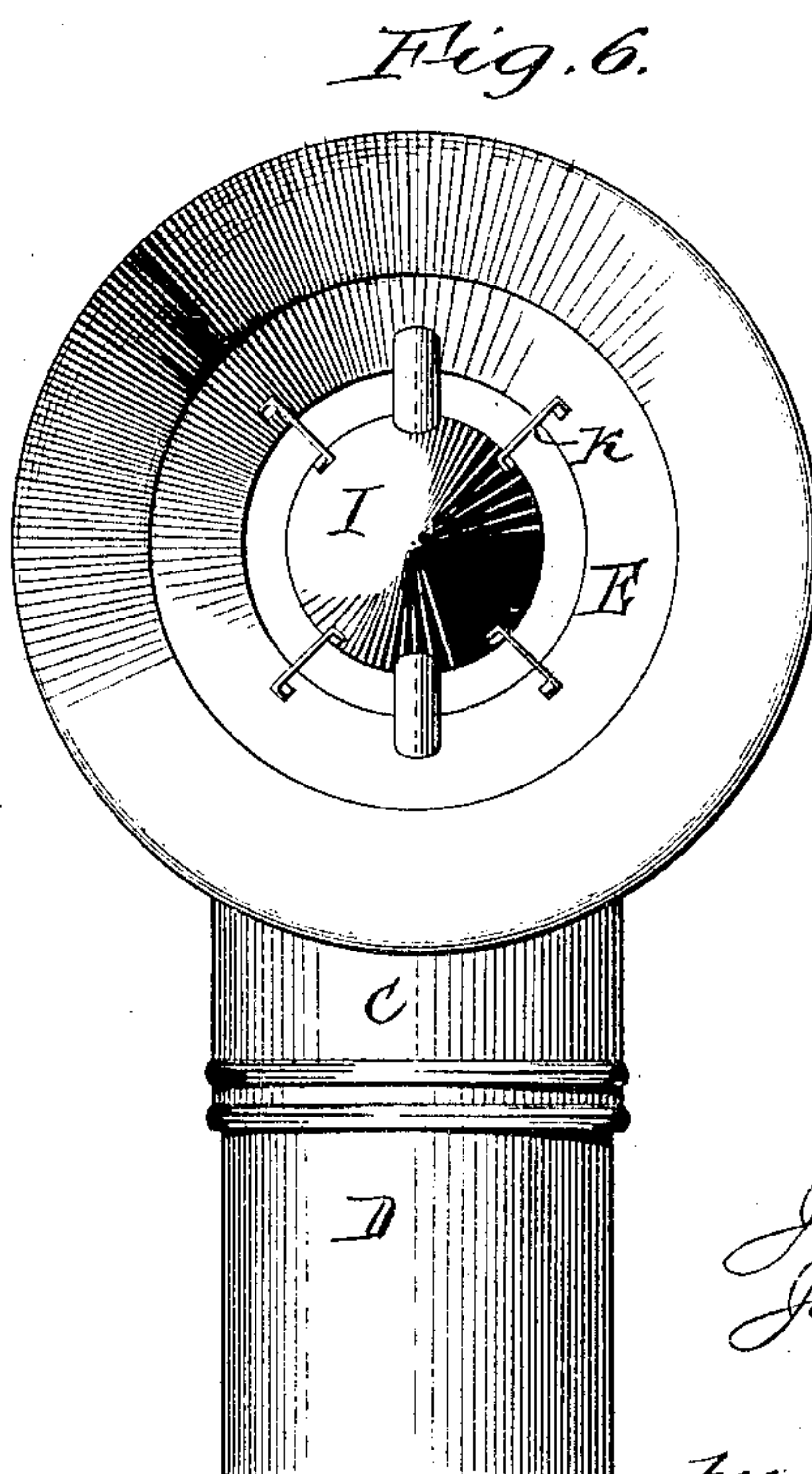
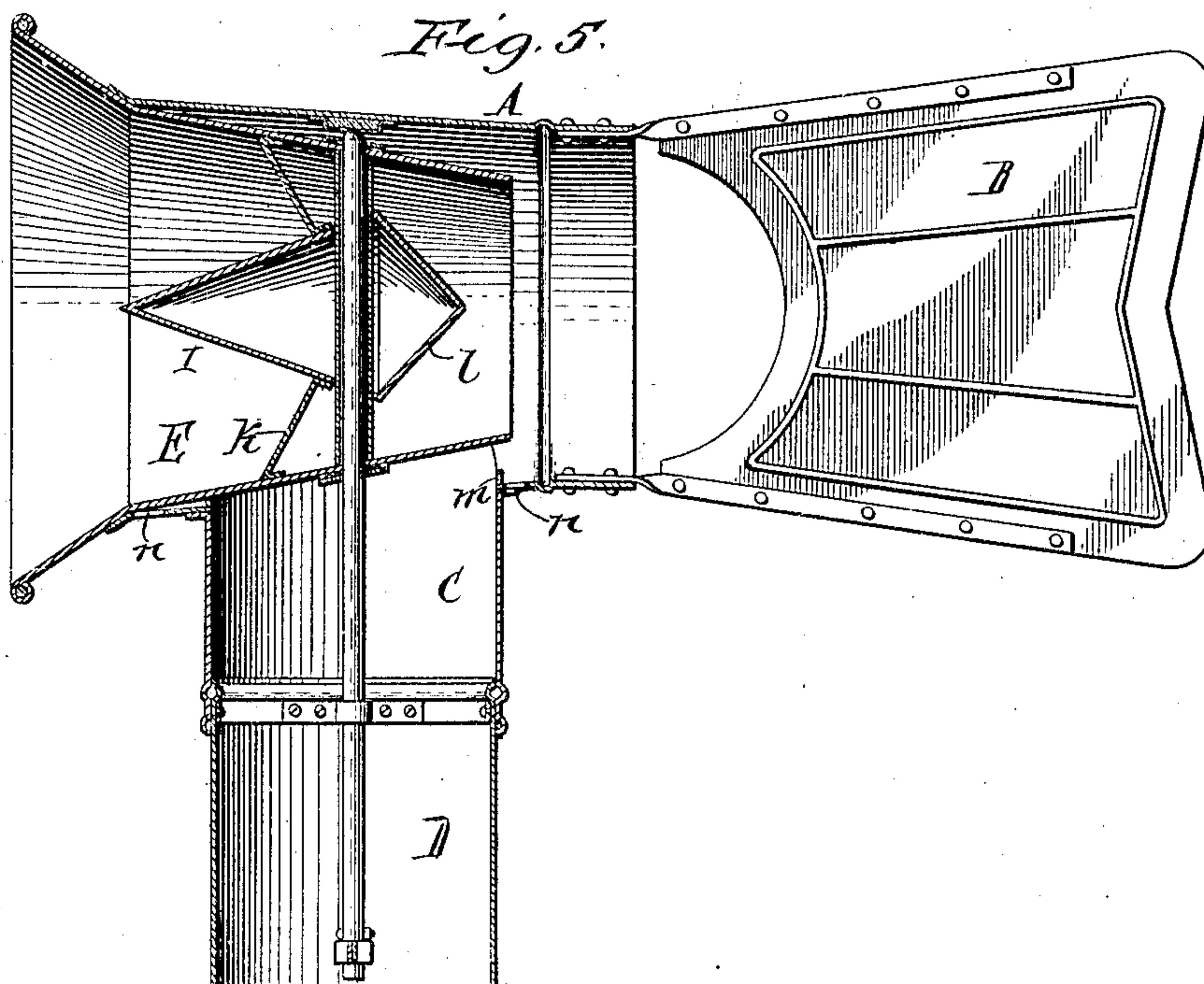
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

JOSEPH C. ROTH, OF WEST SENECA, AND JOHN J. WELSHOFER, OF BUFFALO, NEW YORK.

VENTILATOR.

No. 871,146.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed March 8, 1906. Serial No. 304,869.

To all whom it may concern:

Be it known that we, JOSEPH C. ROTH, a citizen of the United States, residing at West Seneca, and JOHN J. WELSHOFER, a citizen of the United States, residing at Buffalo, both in the county of Erie and State of New York, have invented a new and useful Improvement in Ventilators, of which the following is a specification.

10 This invention relates more particularly to ventilators of the rotary or swiveling type.

The object of the invention is to produce an efficient ventilator of simple construction which is adapted to railway-cars as well as 15 buildings of various kinds.

In the accompanying drawings consisting of two sheets:—Figure 1 is a sectional elevation of the improved ventilator. Fig. 2 is a front view thereof. Fig. 3 is an enlarged 20 fragmentary section of the swiveling casing showing its bearing. Fig. 4 is a horizontal section in line 4—4, Fig. 1. Fig. 5 is a sectional elevation of a modified construction of the device. Fig. 6 is a front view of the 25 same.

Similar letters of reference indicate corresponding parts throughout the several views.

A indicates the horizontal shell or casing of the ventilator which is preferably tapered 30 toward its open rear end and provided at that end with a vane B of any suitable form. On its under side between its ends the casing is provided with a depending hollow neck or tube C rigidly secured thereto and opening at 35 its upper end into the bottom of the casing. This neck has a telescopic connection with a fixed upright pipe D upon which it is free to turn, the neck fitting over the fixed pipe in the construction shown in the drawings. 40 When the ventilator is used on a railway car, the pipe D is secured in an opening in the car roof and connected at its lower end to a suitable ventilating pipe or flue not shown, which may be arranged lengthwise in the car under 45 the roof and provided at intervals with openings by which it communicates with the interior of the car.

E is an open-ended tube arranged lengthwise within the casing A and preferably tapered or constructed in the form of a truncated cone having a flared front end *e* which is secured in the adjacent end of the casing by soldering or otherwise, while its small rear end extends to or somewhat beyond the rear 50 side of the neck C. The large end of the tube E is tightly fitted in the casing, but the re-

maining portion thereof is separated from the casing by an intervening annular space.

The casing and the tube E are rotatably supported by an upright shaft or spindle F 60 secured in horizontal frames or bridge pieces F' fastened within the fixed pipe D. The upper portion of the spindle passes loosely through openings in the top and bottom of the conical tube and through an upright 65 sleeve G secured within said tube in line with said openings, the casing being provided in its top with an internal bearing plate *h* preferably of glass or other antifriction material which rests upon the upper end of the spindle. This bearing plate may be secured to 70 the casing by a cap *h'* having an opening for the passage of the spindle, as best shown in Fig. 3, or by any other suitable means. By this construction, the rotary head or casing 75 of the ventilator is firmly steadied on the fixed pipe D and at the same time capable of turning freely owing to the comparatively small contact between the casing and the top of the spindle. 80

I is a conical spreader or deflector arranged axially within the tapering tube E with its pointed end facing the front end of the ventilator and serving to direct the incoming air current outwardly toward the wall of said 85 tube, so as to exert the exhausting effect of the current closely to the upper end of the neck C and produce a vigorous draft or circulation through the same and the ventilating flue connected therewith. The spreader is 90 rigidly secured to the sleeve G which passes through it, and its large rear end is separated from the surrounding tube by a space of sufficient width to leave a proper passage for the air current. The sleeve G, while acting as a 95 support for the spreader, also serves as a guard or shield which prevents water from leaking through the shaft-opening in the bottom of the tube E into the upright pipe D.

In the use of the ventilator, the air current 100 entering the mouth of the tapering tube E is deflected outwardly by the spreader I, as hereinbefore described, producing a strong suction at the upper end of the neck C, whereby the air is exhausted from the latter 105 and the railway car or compartment connected therewith. To improve this ventilating action, the spreader I is preferably hollow and open at its rear end and its interior is connected with the space between 110 the casing and the tapering tube E by radial flues or pipes J, as shown in Figs. 1 and 2.

By this construction, the air current passing through the tube E also produces a partial vacuum at the large end of the spreader which causes the air in the neck C to be ex-
 5 hausted partly through the spreader and the flues J, especially those flues on the lower side of the spreader. These flues also serve to brace the spreader. While we prefer to use the flues J, they are not indispensable
 10 and may be omitted, if desired. Such a modified construction of the invention is shown in Figs. 5 and 6. In this case, the flues may be replaced by suitable braces *k* and the rear end of the spreader may be
 15 closed, as shown at *l*.

In order to prevent any water which may enter the casing from flowing into the neck C, the opening in the bottom of the casing which registers with the neck is preferably
 20 provided with an upwardly extending rim or guard *m*, and the casing is provided in its bottom on the outer side of the guard with a number of drain openings *n* for the escape of such water.

25 We claim as our invention:—

1. A ventilator comprising a casing having a neck or passage at its lower side, an open ended tube arranged lengthwise in the casing and extending across said neck or
 30 passage, a portion of said tube being sepa-

rated from the surrounding casing, a hollow spreading cone arranged axially in said tube and open at its rear end, and a flue or flues connecting the interior of said cone with the space between said tube and the casing, sub- 35
 stantially as set forth.

2. A ventilator comprising a shaft, a rotary casing mounted on the shaft and provided at its lower side with a neck or pas- 40
 sage, an open-ended tube arranged length- wise in the casing, an upright sleeve secured within said tube around the shaft, and a spreader arranged in said tube and secured upon said sleeve, substantially as set forth.

3. A ventilator, comprising a casing hav- 45
 ing a neck or passage at its lower side, a raised guard rim arranged in the casing at the upper end of said neck and a drain opening in the bottom of the casing, and an open- 50
 ended tube arranged lengthwise in the casing and extending across said neck or passage, substantially as set forth.

Witness our hands this 1st day of March, 1906.

JOSEPH C. ROTH.
 JOHN J. WELSHOFER.

Witnesses:

C. F. GEYER,
 E. M. GRAHAM.