(No Model.)

C. T. MURRAY.

EXHAUST VENTILATOR.

No. 407,488. Patented July 23, 1889.

Fig. 1.

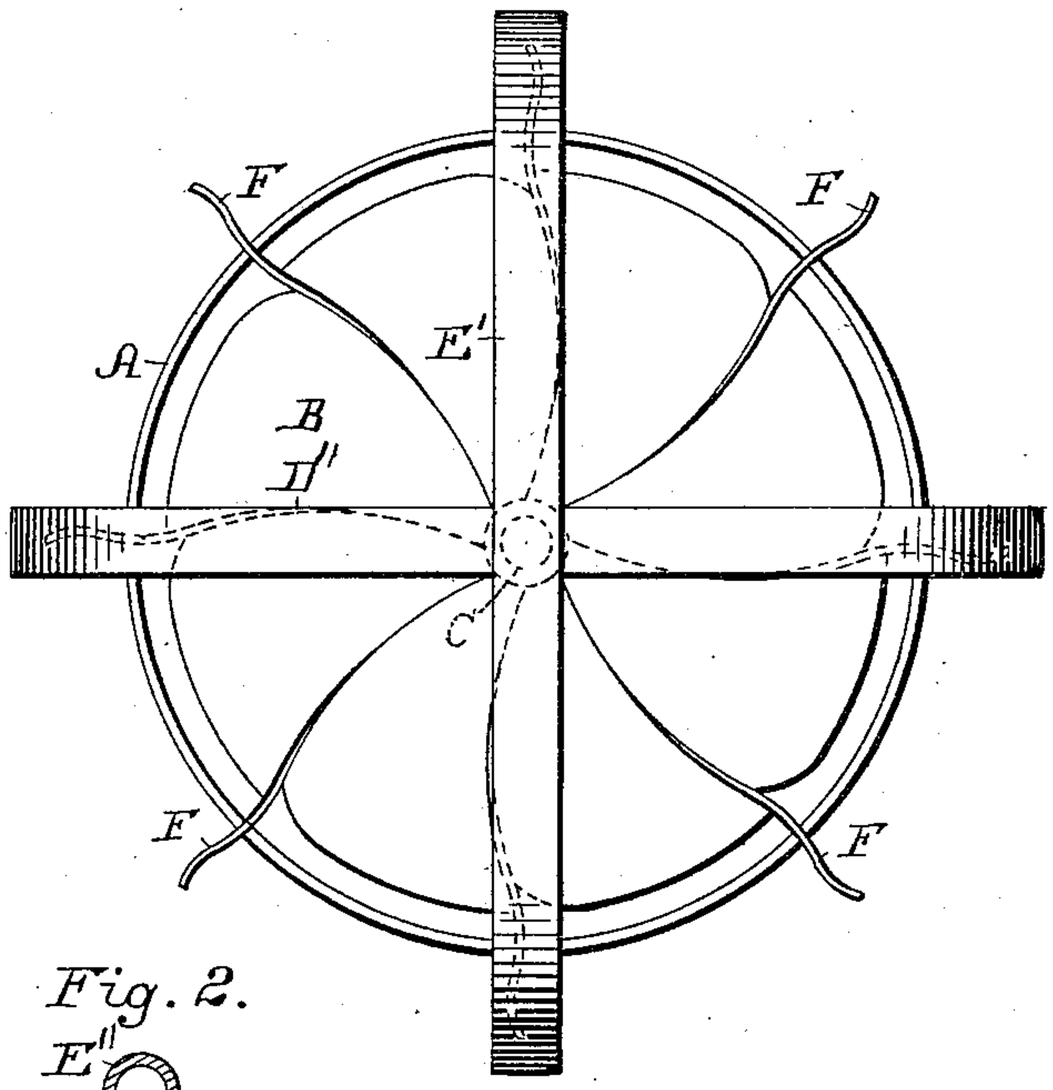


Fig. 2.

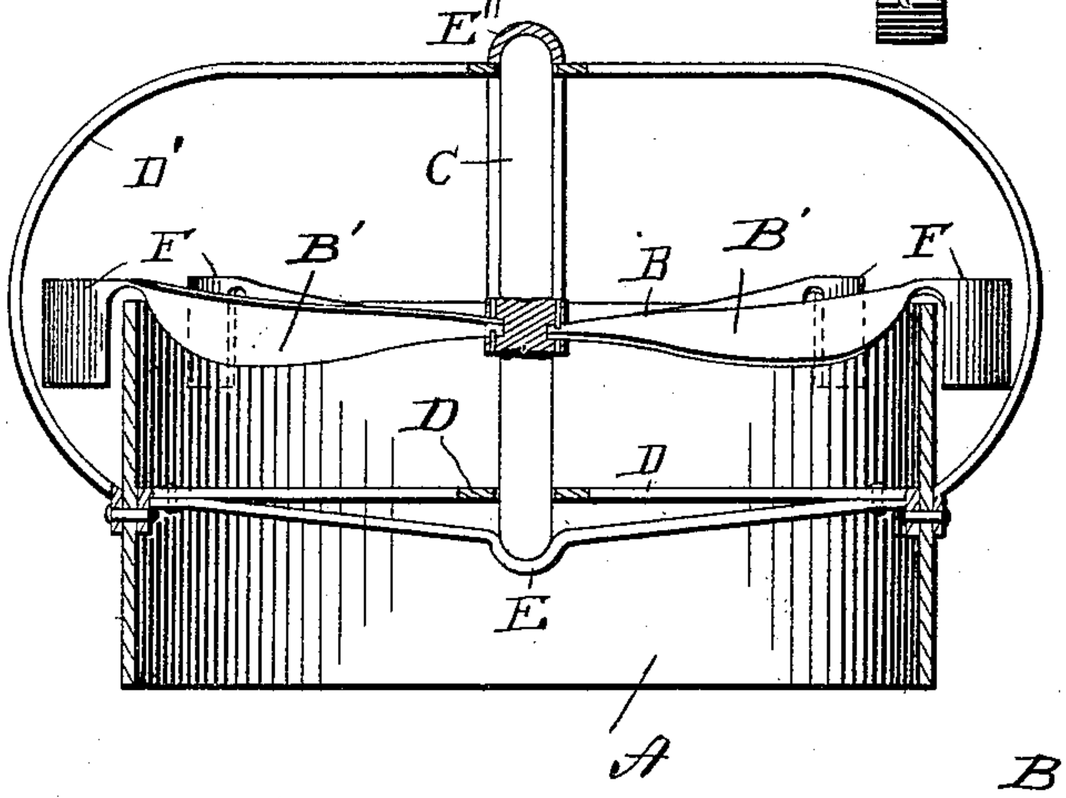
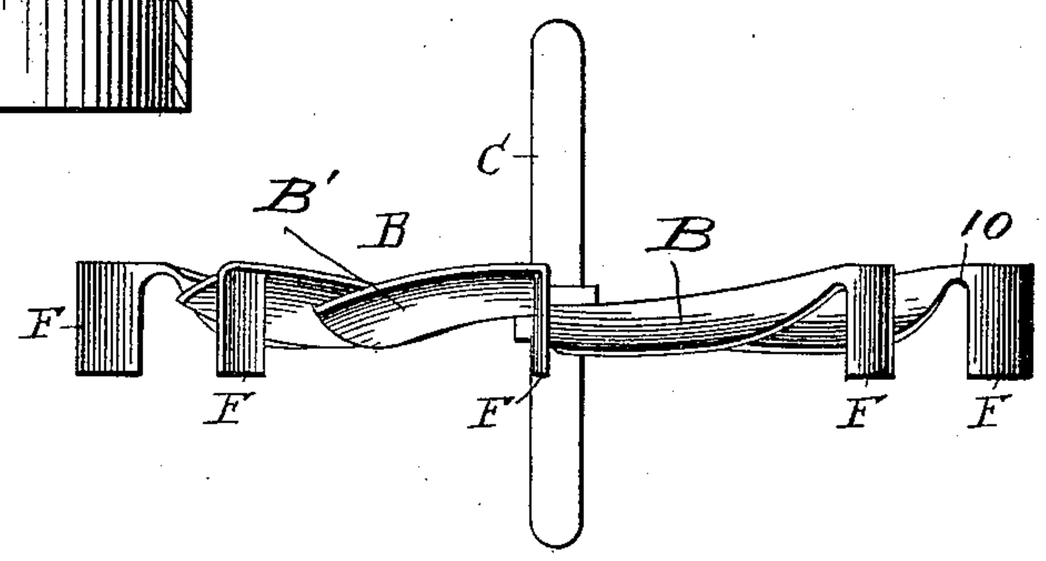


Fig. 3.



Witnesses

F. G. Fischer

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UNITED STATES PATENT OFFICE.

CHARLES T. MURRAY, OF KANSAS CITY, MISSOURI.

EXHAUST-VENTILATOR.

SPECIFICATION forming part of Letters Patent No. 407,488, dated July 23, 1889.

Application filed February 15, 1889. Serial No. 299,936. (No model.)

To all whom it may concern:

Be it known that I, CHARLES T. MURRAY, of Kansas City, Jackson county, Missouri, have invented certain new and useful Improvements in Exhaust-Ventilators, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention pertains to certain improvements in chimney cowls or ventilators, and relates particularly to the vane or wheel which is arranged therein to promote draft, the same consisting in the detailed construction and combination of parts, substantially as hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a plan view of my improved chimney or flue vane. Fig. 2 is a sectional elevation of the same, and Fig. 3 is a detached side view of the wheel or vane proper.

In the embodiment of my invention I employ, as usual, a circular or cylindric casing or ring A, centrally within, and to which is bolted crossing plates or bars D D, having a central opening therein, and below and to one of which bars or plates D is secured a centrally-stepped plate or support E.

B is the wheel or vane, having a central shaft C passed through the aperture or opening in the crossing bars or spider D, and bearing at its lower rounded end in the step or cavity in the support or plate E. The upper also rounded end of the shaft C bears in a concavity or step in the under side of one of the two curved crossing bars or yokes D′ E′, the shaft thus being sensitively journaled in position. The ends of the yokes or bars D′ E′ are suitably fastened to the outside of the ring or casing A. The wheel or vane consists of a series of circularly-arranged wings or plates B′, radially connected to the shaft C as a center, and dipping at about an angle of forty-five degrees, (more or less,) to readily permit of the impingement thereagainst of the ascending warm or rarefied air to effect the initial movement of the wheel or vane. The plates or wings B′ are curved upward and outward upon or at their lower edges toward their outer ends, and thence drop perpendicularly at their extreme outer ends, forming supplementary wings F thereon. These supplementary wings are arranged to stand outside of the casing or ring A, to receive the action of the wind or any currents of external air and out of the range of the upward current of air within the chimney, said upward current of air being caused by the rotary movement of the wings or plates B′, which are arranged below the upper edge of the casing out of the range of outside currents of air.

It will be understood that I do not restrict myself to the particular angle of disposition of the wings of the wheel or other non-essential points in the arrangement or construction of the individual parts of the wheel or its support, and that it may be used wherever a draft is required or desired to be created or set up either in a pipe or chimney-flue. It is of especial service in counteracting counter-currents of external air or winds arising, it may be, from the obstruction offered by high surrounding buildings or walls or other cause, owing to the fact that outside currents do not affect the wings or plates B′, which are fully shielded by the casing.

I am aware that it is not broadly new to provide chimney cowls or ventilators with rotary wheels or vanes provided with wings within and beyond the walls of the casing, whereby the outside currents of air effect the rotation of the wheel or vane and thereby exhaust the air within the chimney and cause an upward draft, and therefore I do not claim this construction; but it will be seen that the main or inner wings or plates are arranged within and below the upper edge of the casing and the supplementary wings are disposed beyond the walls of the casing and depend below the upper edge of the same, so as to be entirely unaffected by the draft within the chimney. It is essential that the body or greater portion of the inner wings or plates should be within or below the upper edge of the casing, in order to affect the column of air therein and not be affected by the outside air. Further, it will be seen that the improved wheel or vane is applicable to any cylindrical casing, as it is not necessary for its proper and satisfactory operation that the latter should be provided with hoods, deflectors, or other similar supplementary devices. This point is of special importance, inasmuch as it adds to the simplicity and cheapness of the ventilator.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a chimney cowl or ventilator, the combination, with a capless cylindrical casing A, provided with transverse supporting-bars, of the herein-described rotary wheel or vane provided with a central vertical shaft mounted on said supporting-bars, and consisting of a series of radially-disposed inclined plates or wings B′ B′, arranged entirely within and below the upper edge of the casing out of the range of external currents of air, and having their lower edges curved upwardly and outwardly to the upper edge of the casing, said plates or wings being provided with supplementary wings F, which depend from their extremities and are arranged below and outside of the upper edge of the casing, so as to rotate around the same out of the range of internal currents of air, all constructed substantially as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES T. MURRAY.

Witnesses:

GEO. L. JONES,

JAS. M. JONES.