

M. V. Nobles,
Fan Blower.

N^o 40,982.

Patented Dec. 15, 1863.

Fig. 2.

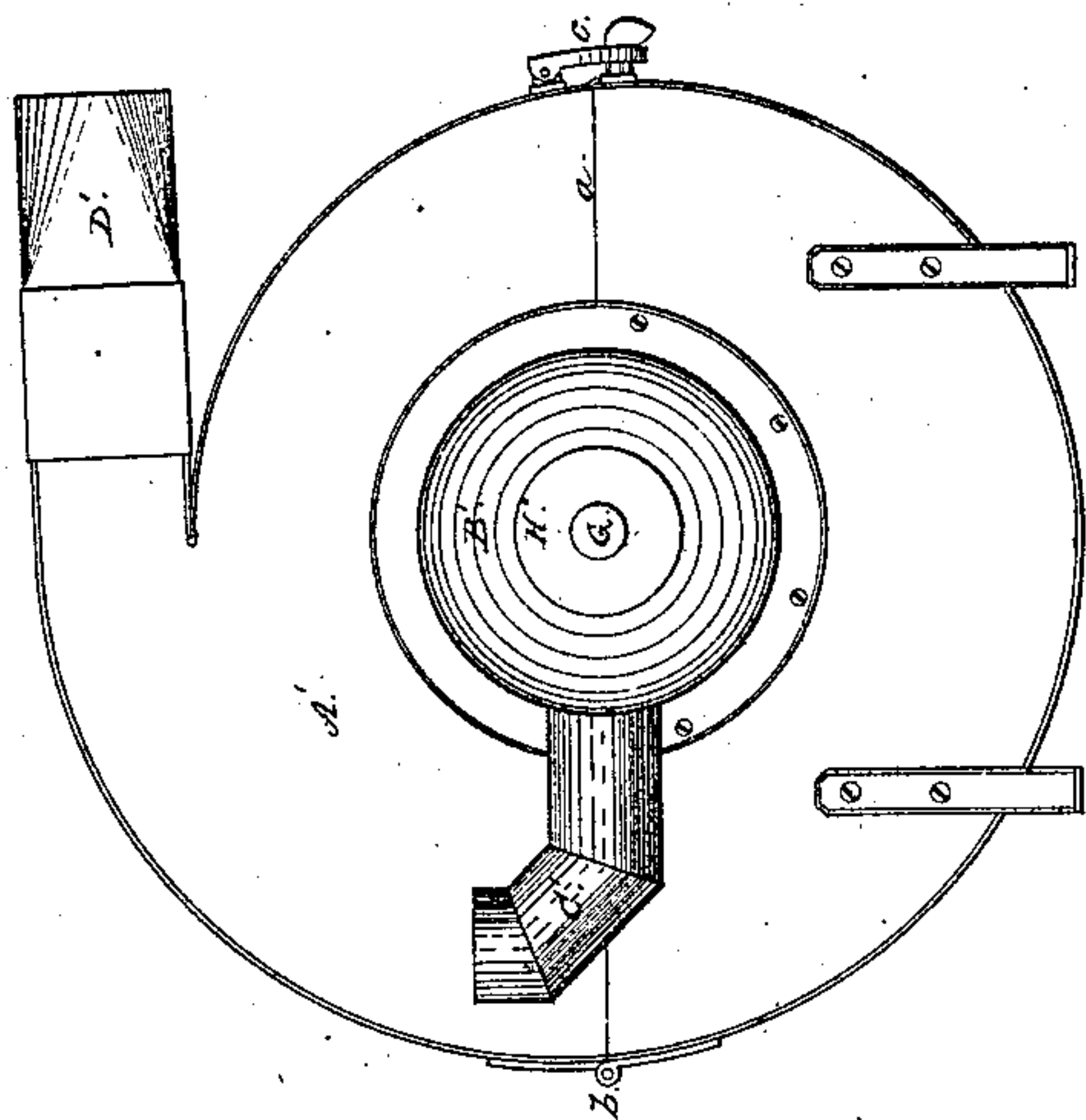


Fig. 3.

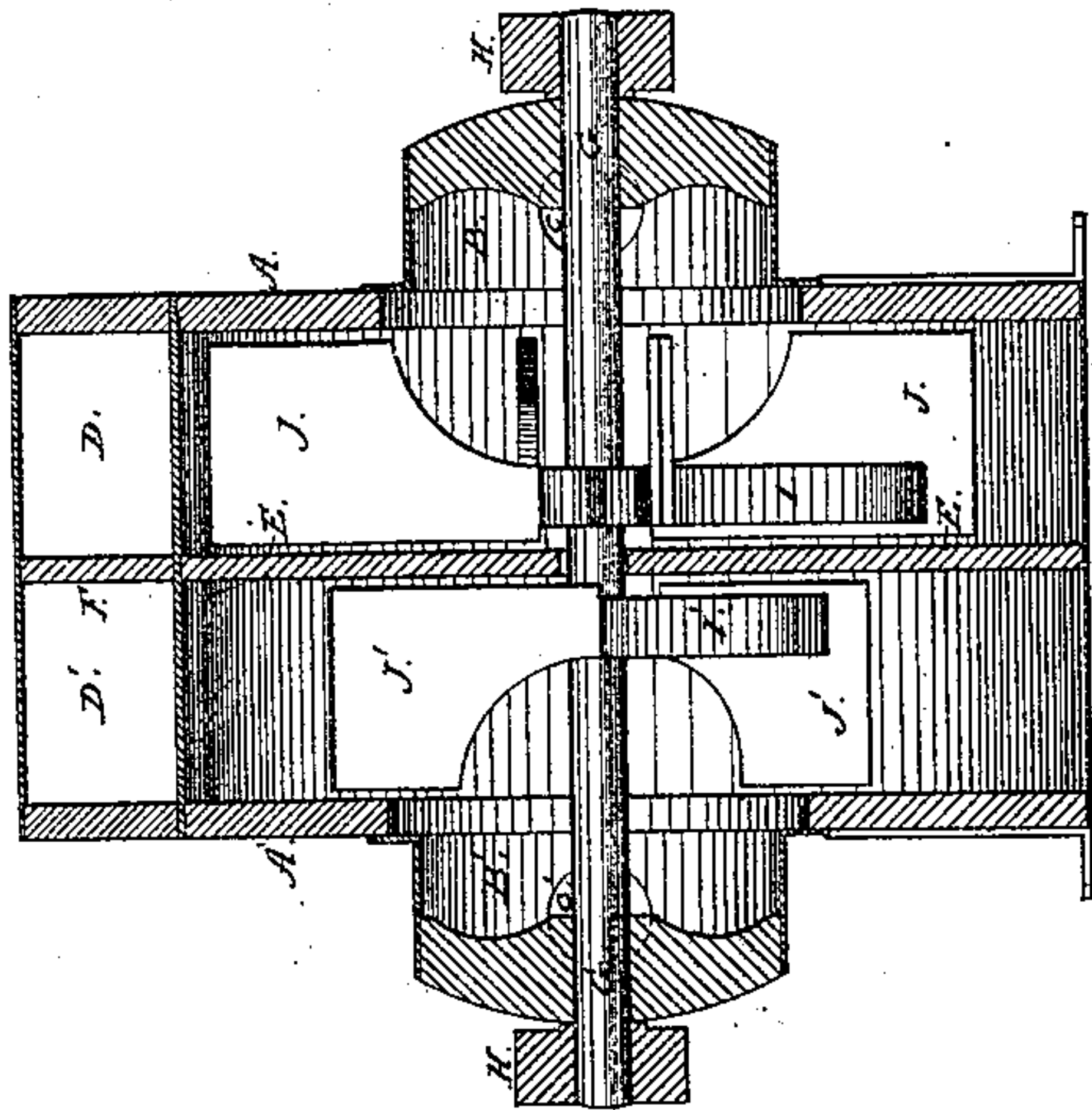
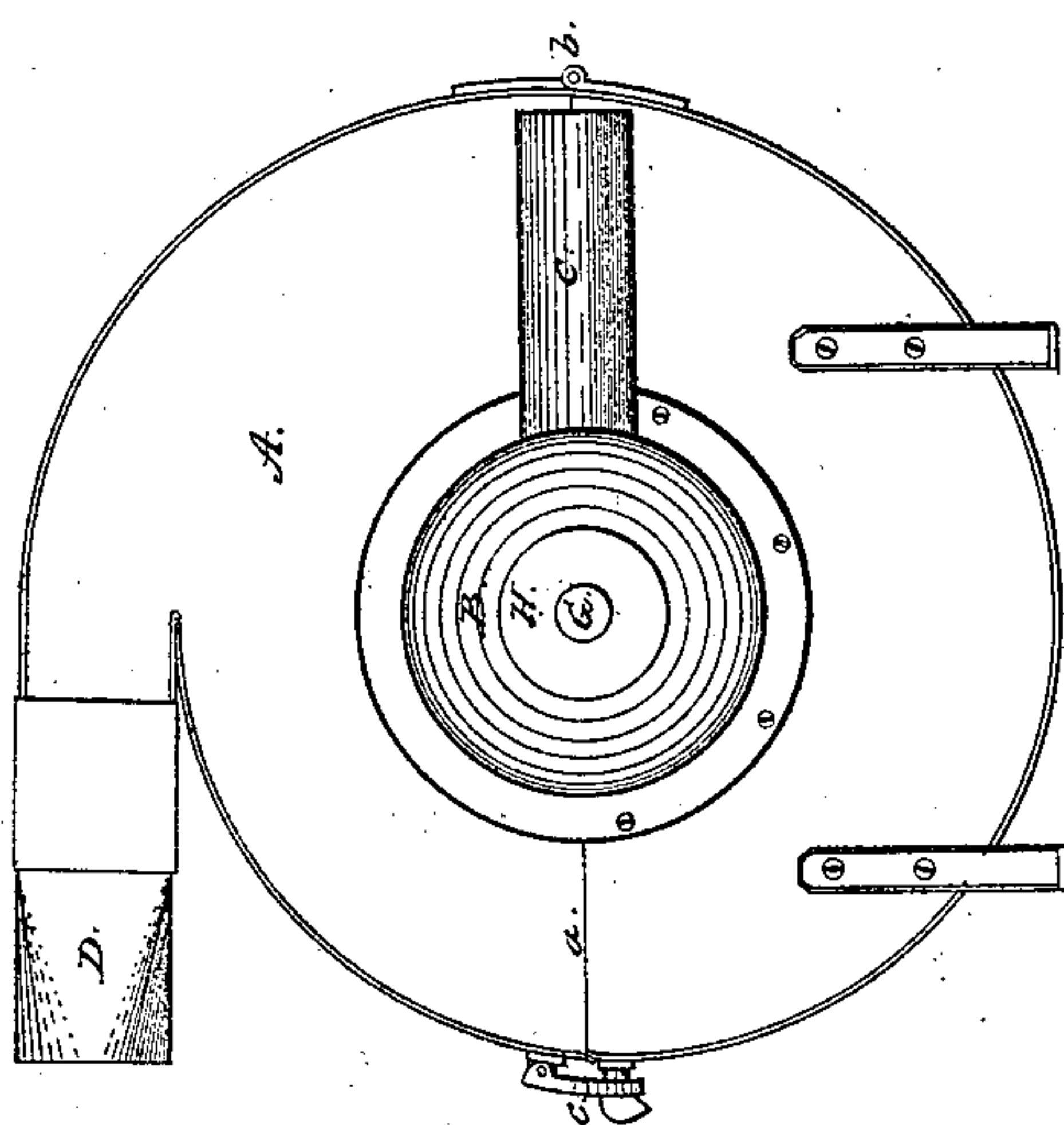


Fig. 1.



Witnesses;
P. E. Wilson
A. Moore
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Inventor;
Milton V. Nobles
By atty A. B. Sloughen

UNITED STATES PATENT OFFICE.

MILTON V. NOBLES, OF ST. ANTHONY, MINNESOTA, ASSIGNOR TO HIMSELF,
JOHN C. NOBLES, AND ELIZA C. SUYDAM.

IMPROVEMENT IN FAN-BLOWERS.

Specification forming part of Letters Patent No. 40,982, dated December 15, 1863.

To all whom it may concern:

Be it known that I, MILTON V. NOBLES, of St. Anthony, in the county of Ramsey and State of Minnesota, have invented certain new and useful Improvements in the Construction of Fan-Blowers for Ventilating and other Purposes; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 represents a view of one side of fan-case and its air-ducts. Fig. 2 represents a view of the opposite side and its air-ducts. Fig. 3 represents a vertical transverse section through the fan-case and the upper pair of air-ducts.

Similar letters of reference, where they occur in the separate figures, denote like parts of the apparatus in all the drawings.

I am aware that a fan has been used in a tight case with air-trunks leading to and from it to supply fresh air to an apartment or to expel foul air, one or the other, but not both; and I am also aware that an exhaust-fan has been used for drawing foul air from an apartment, leaving the pure air to find its way into said apartment without any artificial assistance. These things I do not claim as of my invention, as they only accomplish one-half of what is necessary in thorough ventilation.

My invention consists in gathering and expelling from an apartment of any kind the foul air or gases and at the same time and by the same apparatus drawing in fresh air from without and forcing it into the apartment to supply the place of that expelled, thus doing two things at one and the same time, or by one and the same operation, both of which are essential to a speedy change of air in the apartment to be ventilated, as will be explained.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

A A' represent the two exterior sides of a fan-case, the eyes of which are tightly closed up, as at B B', and from which closed up eyes pipes or air-ducts C C' lead to the points or places where the foul air is to be taken in and carried to, and where the fresh or pure air is

to come from, respectively. At the top of the fan-case there are two exit-ducts or air-trunks, D D', through one of which the impure air is carried out of the apartment, and through the other one of which the pure air is forced into the apartment from without the building, structure, or place to be ventilated. The interior of the fan case is divided by a partition, E, corresponding to the division-board F of the air-trunks D D'. A fan-shaft, G, extends through the fan-case from side to side, and may have on its projecting ends pulleys H H', by which it may be driven. Upon this shaft are arranged radial arms I I', carrying wings or blades J J', of any suitable number or shape, for creating both a suction and an exhaust current through the apparatus from the apartment to the external air and from the external air to the apartment, or counter-currents of foul and of pure air.

The fan-case may be divided horizontally, as at *a*, and be hinged, as at *b*, with a suitable tightening and holding catch or latch at *c*, for the purposes of access.

The operation of the apparatus is as follows: The pipe or air-duct C having, by hose or connecting-pipes of any kind, been introduced into the place or apartment to be ventilated and the duct D extended to the external air, where the foul air is to be discharged, and the duct C' similarly extended to where the fresh or pure air is to come from, and the duct D' terminated in the place or apartment to be ventilated or refurnished with pure air, the fan is set in motion, which draws in the foul air through C and expels it through D, and at the same time a volume of pure air is drawn in through the duct C' and driven into the room or apartment through D', thus in a few moments removing the foul air and replacing it by fresh and pure air by artificial and forced currents; and this process may be continuous or at intervals, as circumstances may require. The fresh air drawn in and distributed through the apartment may be cooled or moistened, or both, artificially, by drawing or expelling it through an ice-box, water-chamber, or otherwise.

For expelling smoke or gases from gun decks or towers, or for ventilating the holds of vessels, this apparatus is peculiarly applicable;

but may be applied to buildings, vaults, and other places. The fan is both a suction and forcing fan, taking from a specific place and forcing to another specific place the air within its influence, and it may be run in either direction without changing this characteristic of its operation; but in changing its motion the terminations of its inlets and exits should be arranged accordingly.

Having thus fully described the object and purpose of my invention, what I claim therein as new, and desire to secure by Letters Patent, is—

In combination with a fan-case having closed eyes and a divided fan, the double sets of inlet and exit air ducts or passages C C' and D D', constructed, arranged, and operating together for the purpose of drawing in and forcing through it counter-currents of pure and impure air, substantially as and for the purpose described.

MILTON V. NOBLES.

Witnesses:

JAS. ADRIAN SUYDAM,
CHARLES A. BEILBY.