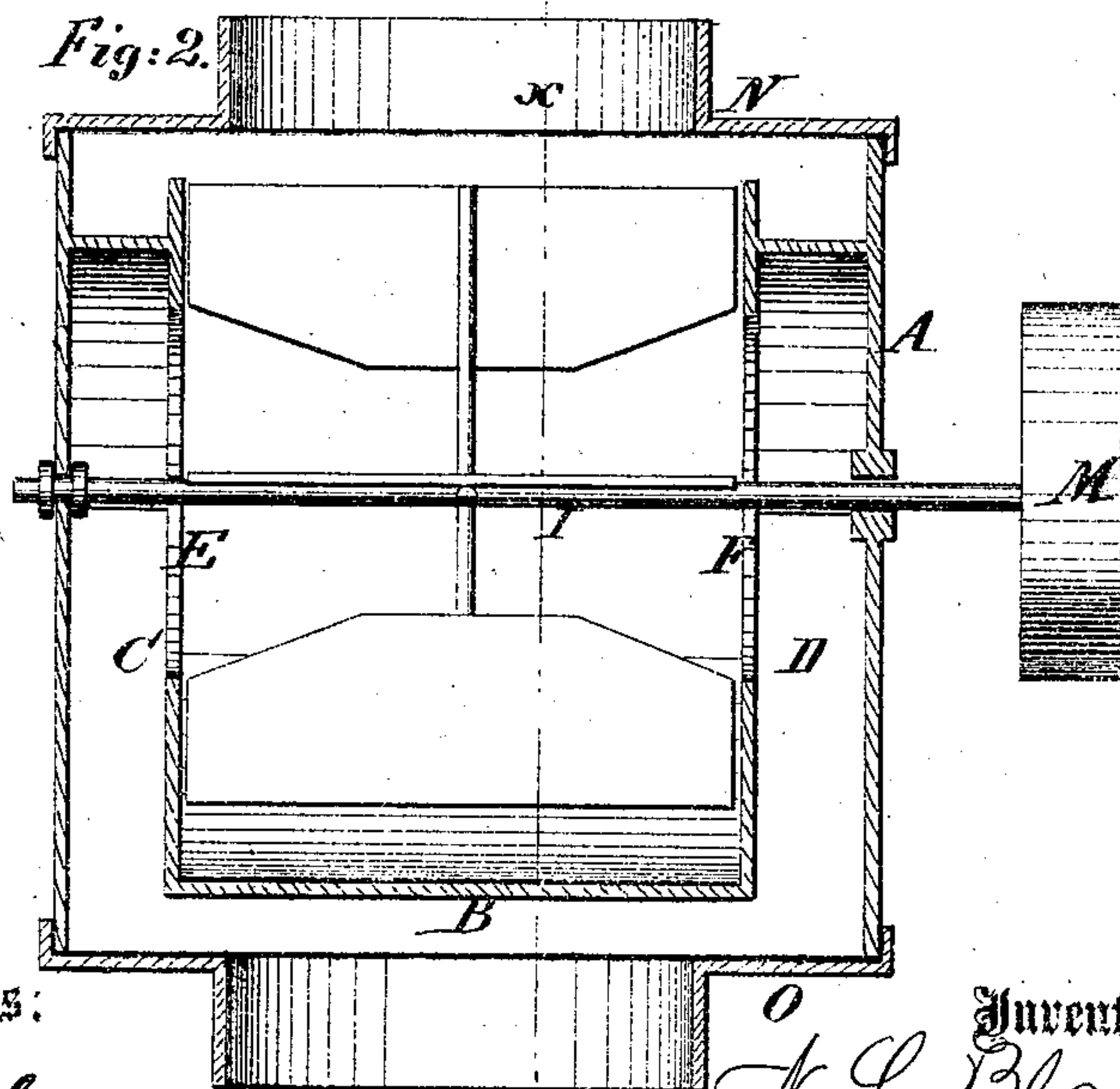
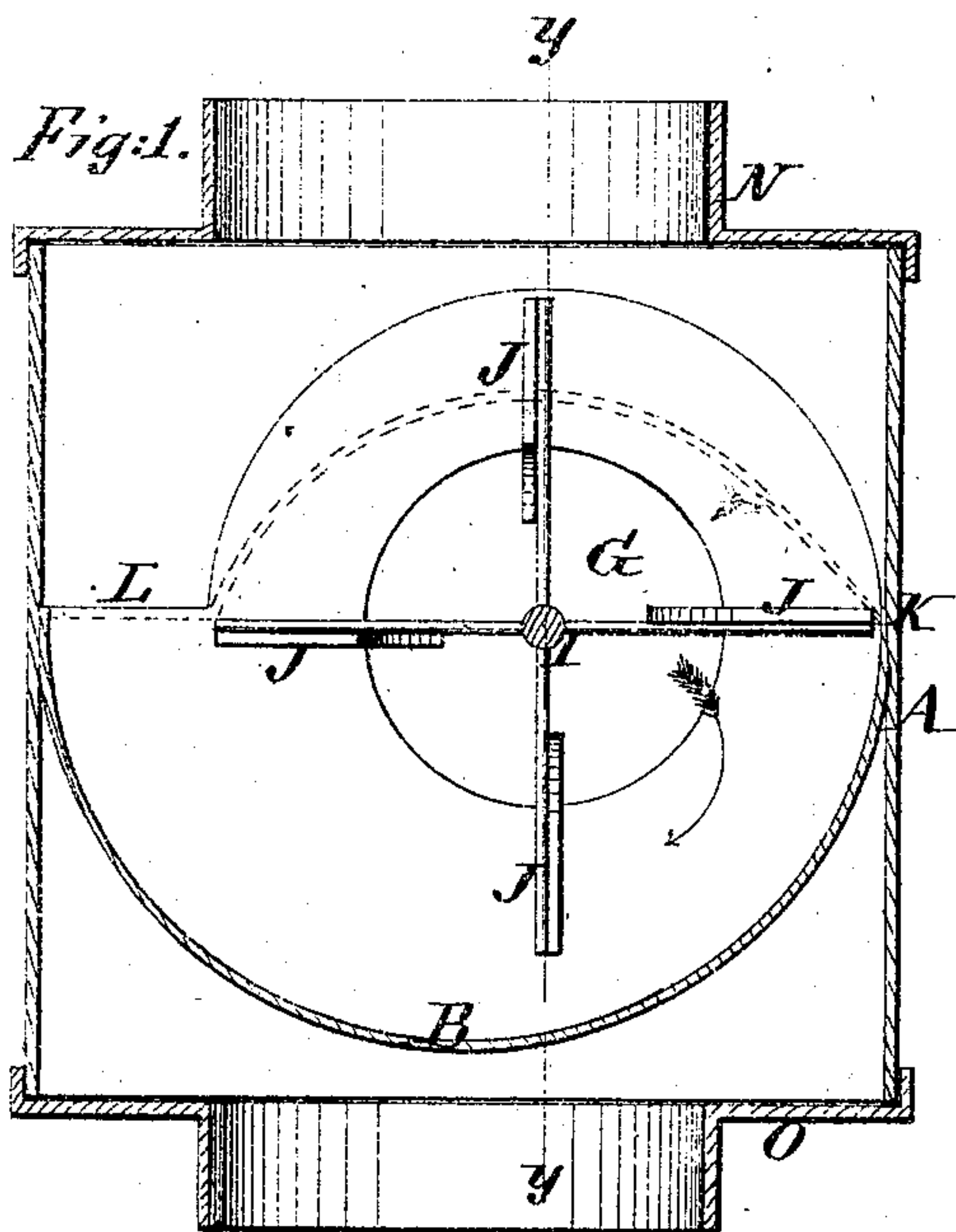


N.L. Blanchard, Blower for Chimney Stack.

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PATENTED JUL 25 1871



Witnesses:

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UNITED STATES PATENT OFFICE.

NATHANIEL L. BLANCHARD, OF SPUYTEN DUYVIL, NEW YORK.

IMPROVEMENT IN BLOWERS FOR CHIMNEY-STACKS.

Specification forming part of Letters Patent No. 117,252, dated July 25, 1871.

To all whom it may concern:

Be it known that I, NATHANIEL L. BLANCHARD, of Spuyten Duyvil, in the county of Westchester and State of New York, have invented a new and useful Improvement in Blower for Chimney-Stacks; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

The object of this invention is to furnish simple and efficient means for increasing the draught of chimneys, designed especially for the chimney-stacks of steam-engine boilers; and it consists in the arrangement of a simple fan-blower, operating to produce a continuous upward current, as hereinafter more fully described.

In the accompanying drawing, Figure 1 represents a vertical section of the arrangement on the line *xx* of Fig. 2. Fig. 2 is a horizontal section on the line *yy* of Fig. 1.

Similar letters of reference indicate corresponding parts.

A represents the blower-casing. B is a short section of a semi-cylinder with chambers C and D at its ends which communicate with the flue, and through which the smoke and products of combustion pass. E and F are the sides, which extend up from the curved portion B, with central orifices G G through them which communicate with the chambers C and D. The chambers C and D are closed at top, so that the smoke and gaseous products of combustion from the fire-box are compelled to pass from those chambers through these orifices, and are brought in contact with the wings of the blower. I is the shaft and J the wings of the blower.

It will be observed that the shaft is supported by the chimney or casing, and that it is placed one side of the center or in a position where the wings just clear the cylinder on one side, as seen

at K, and leave a broad opening on the other side, as seen at L. As the wings are made to revolve in the direction of the arrow, it will be seen that from the point K there will be a constantly-increasing current as the smoke and gases rush through the orifices G. The strength of the current will, of course, depend on the velocity with which the blower is revolved. The blower is driven by a belt on the pulley M from any convenient portion of the revolving machinery. In a round smoke-stack or chimney the flanged top and bottom plates (N and O) form the connection with the stack. In a brick chimney-stack the casing A may be dispensed with, as the semi-cylinder B and the chamber C D may be supported by the masonry.

After a good deal of experience I have found that it is more advantageous to draw the smoke and gases from the fire-box through the boiler-flues than to force or push them, as is usually done; and I have found that the simple fan-blower, when arranged as herein shown and described, answers the purpose admirably.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The top-closed chamber C D, the semi-cylindrical side and top-opened case B, the fan I J, and the top and bottom-opened case A N O, all arranged together between the fire-box and smoke-stack of an engine-boiler, and combined, as described, for the purpose of drawing the products of combustion from the fire-box through plate O into a close chamber, C D, which opens only into the sides of the fan-case, and of thence transferring said products directly into the smoke-stack, thus allowing no smoke or gas to reach the chimney without passing through the fan.

NATHANIEL L. BLANCHARD.

Witnesses:

GEO. W. MABEE,
ALEX. F. ROBERTS.