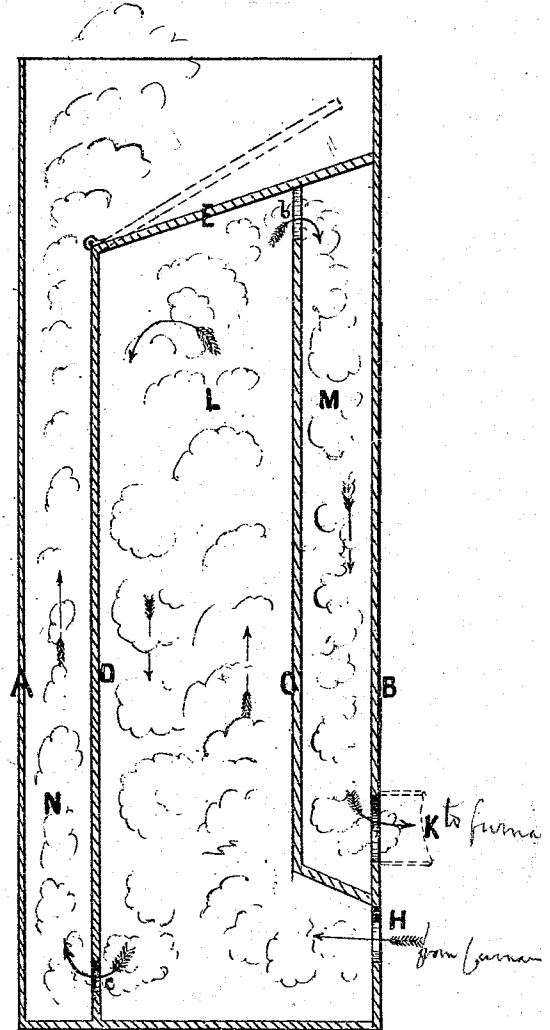
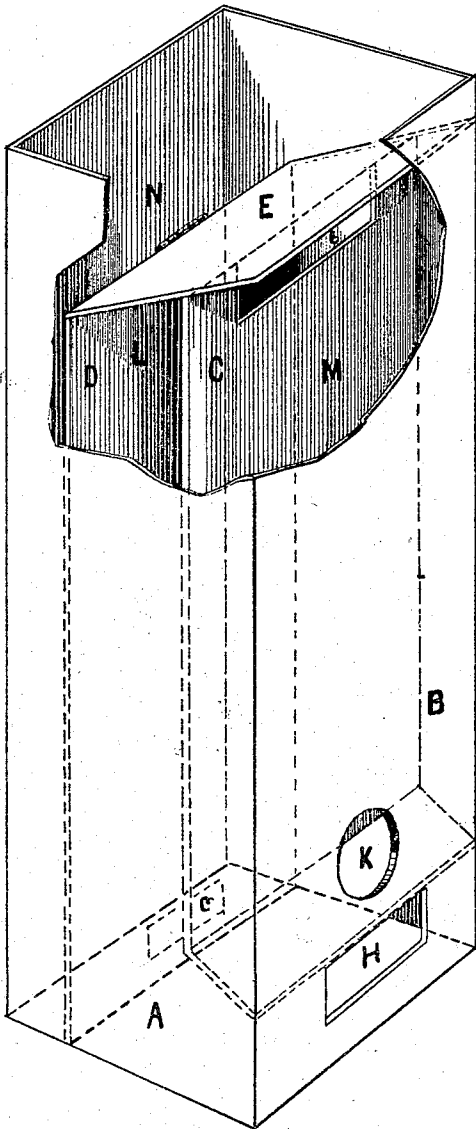


Oakman's Improved Chimney

117320

PATENTED JUL 25 1871



Witnesses

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UNITED STATES PATENT OFFICE.

SAMUEL OAKMAN, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CHIMNEYS.

Specification forming part of Letters Patent No. 117,320, dated July 25, 1871.

To all whom it may concern:

Be it known that I, SAMUEL OAKMAN, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Chimneys, of which the following is a specification:

It is well known to observing furnace-men that combustion is always more or less imperfect; that with the true products of combustion, carbonic-acid gas and water, there always escape from the chimney large quantities of lighter gases, such as carbonic oxide and carbureted hydrogen, which are combustible.

The nature of my invention consists in arranging, either directly or indirectly with the chimney, a separating-chamber, into which all the products of combustion flow, and in which the different gases are allowed to separate; the heavier incombustible ones collecting near the bottom are drawn off into the atmosphere, while the lighter and combustible ones are collected near the top, and from thence drawn off, mixed with atmospheric air, and returned to the fire; the object being to prevent smoke and obtain more perfect combustion, and, consequently, economy in fuel.

Figure 1 represents, in isometric perspective, one device for reducing my invention to practice. Fig. 2 is a vertical section of the same.

In the drawing, A B are the outer walls of a chimney, which is divided into three compartments by the two partition-walls D C. E is a movable top covering the apartments M and L. This top may be operated by any of the usual devices for such purposes. For the ordinary working of the furnace the top or cover E should be as shown in the drawing. But in case it is not desirable to operate the blower or artificial draught, the top may be open, as indicated by dotted lines in Fig. 2. This cover E may be also used to admit atmospheric air to the combustible gases in the flue M, which air, being mingled with

the gases, is carried to the furnace. The amount of air thus admitted may be regulated by the adjustment of the top E. The compartment L is connected with the furnace by the opening H, with the return-flue M by the opening b, and with the outlet-flue N by the opening c.

My improved chimney is intended to operate as follows: The products of combustion pass from the furnace through the opening H into the separating-chamber L. In this chamber the gases diffuse themselves and separate, the lighter combustible ones collecting near the top, while the heavier ones settle to the bottom. A current is constantly maintained in the small flue M, which draws away the lighter or combustible gases, which, after being mixed with a proper amount of atmospheric air, are returned to the furnace for combustion. This draught may be easily effected by a fan-blower, so placed that it may draw from the orifice K and discharge into the fire-box or ash-pit. The fresh air for mixing with the gases may be introduced at the blower or at any convenient point. The amount of fresh air to be introduced at the blower to assist in the combustion of gases may be regulated by suitable valves. The heavier gases, which accumulate near the bottom, are drawn off by the flue N and discharged into the open air. If desirable, the separating-chamber L may be made outside of and at a distance from the chimney, and connected to the same by proper flues.

I do not confine myself to any particular style of construction, as different furnaces will require special arrangements adapted to the use intended.

I claim as my invention—

The arrangement of a separating-chamber, L, with proper flues, in connection with a furnace, for the purpose set forth.

SAMUEL OAKMAN.

Witnesses:

WILLIAM EDSON,
FRANK G. PARKER.