

(No Model.)

W. A. WHITE.
FURNACE FOR HOT HOUSES.

No. 358,635.

Patented Mar. 1, 1887.

Fig. 2.

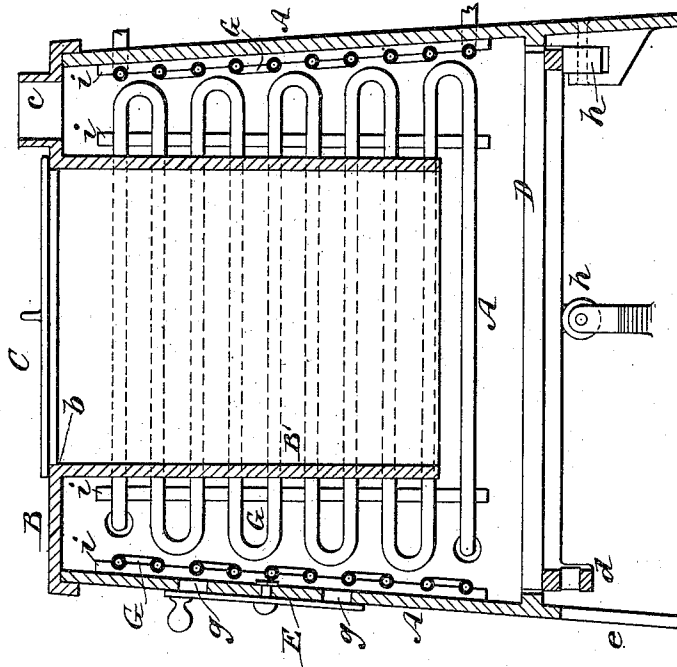
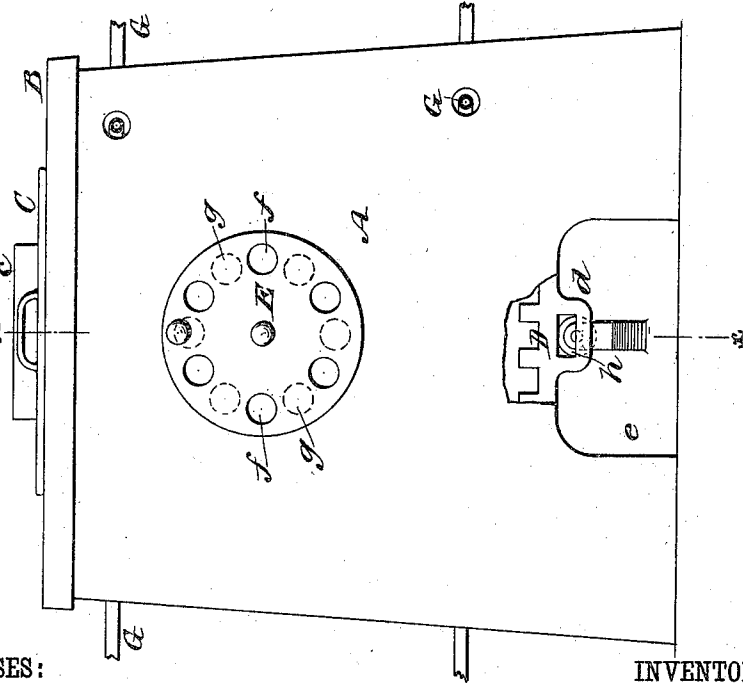


Fig. 1.



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FURNACE FOR HOT-HOUSES.

SPECIFICATION forming part of Letters Patent No. 358,635, dated March 1, 1887.

Application filed March 3, 1886. Serial No. 193,873. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ANTONY WHITE, of Staatsburg, in the county of Dutchess and State of New York, have invented new and useful Improvements in Furnaces for Hot-Houses, Green-Houses, and other like Structures, of which the following is a full, clear, and exact description.

This invention consists in a furnace of novel construction, substantially as hereinafter described and claimed, for heating hot-houses, green-houses, and for other horticultural uses or purposes, in which the heat derived from the combustion of the fuel in the furnace is transmitted, as required, by or through hot-water-circulating pipes.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 represents a front view of my improved furnace, and Fig. 2 a vertical section of the same upon the line $x x$ in Fig. 1.

A is the outside shell or body of the furnace, which is a magazine one. Said shell, which is cast all in one piece, is a many-sided one, it, as represented, being of a truncated pyramidal form, which shape will facilitate the molding and casting of it.

B is its top, also made of cast metal, and constructed to fit as a cap over the upper end of the shell or body A. Said top has likewise cast in one piece with it the magazine or fuel-supplying chamber B', having the feed-opening b in its top, covered by a lid, C, and preferably of circular construction. This forms a cheap and serviceable construction of magazine-furnace. The outlet for the products of combustion is formed by a nozzle, c , on the rear side of the top of the cap, and with which the chimney connects.

D is the grate of the furnace, arranged at a suitable distance below the magazine B', and of circular or other suitable form, to admit of its being rocked about a vertical axis for the purpose of clearing it—as, for instance, by inserting a "shaker" in a lower socket-like projection, d , on the front of the grate, and which is readily accessible by its exposure through a lower front opening or cut-away portion, e , in the front portion of the body A.

This opening e likewise serves for the removal of ashes, &c., passed through the grate and for supplying air to the fire to promote combustion and keep up the draft. Air also is admitted above the fire, when required, to retard combustion or lessen the draft, by a centrally-pivoted or circular damper, E, arranged upon the exterior of the shell A and provided with a series of apertures, f , put into or out of communication with a corresponding series of apertures, g , in the body or shell. By means of this damper, in connection with the opening e below the grate, the draft and heat of the furnace may be regulated with the greatest nicety.

The grate D is loosely fitted to rest upon a series of rollers, h , arranged at a suitable distance apart, around and within the shell A, and carried by brackets attached to the shell below the grate. This provides for an easy movement of the grate when shaking it, and will prevent the lodgment of cinder or ash around or about the grate, liable to interfere with the shaking of it.

Within the shell or body A, against two or more of the sides of said many-sided body, but separated therefrom—as by strips i —to provide for a free circulation of the heated gases about or on opposite sides of them, are arranged independent coils G, of return or serpentine construction, for heating water supplied to them from a tank or other suitable source and adapted to pass the water, heated by exposure of said coils to the fire, to and through outside circulating pipes (not shown here) for transmitting the heat derived from the furnace, as required. For this purpose the water may be introduced to each coil at its lower end and be discharged at its upper end for circulation through the outside pipes, the two ends of each coil suitably projecting through the sides of the body A to make the necessary connections. These coils G, too, will also serve to protect the sides of the furnace from being burned or injured by the action of the fire. Said coils may, if desired, be applied to all the sides of the furnace; but, whether two or more, they are in every case independent coils for supplying heated water in different directions and subject to separate control by suitable cocks in or connected with the trans-

mission-pipes, thus providing for throwing the flow of hot water into one portion of the structure to be heated and shutting it off from another, or regulating the supply in different
5 directions, as required. Said coils, too, being independent ones, may be separately removed or replaced as repair renders necessary.

The grate herein shown and described forms no part of the present invention; but I reserve
10 to myself the right to make a separate application therefor at some future time.

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

The combination, with the many-sided body 15 A, the top B, and magazine B', the cover C, and grate D, of the independent water-coils G and the separate spacing-strips *i*, separating said coils from the body, and whereby while
20 the walls of the body are protected from injury by said coils an increased freedom of circulation of the heated gases about the independent coils is obtained, as herein shown and described.

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Witnesses:

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