(No Model.) 3 Sheets—Sheet 1.

C. A. WELLINGTON.

OPEN FRONT STOVE.

No. 367,876. Patented Aug. 9, 1887.

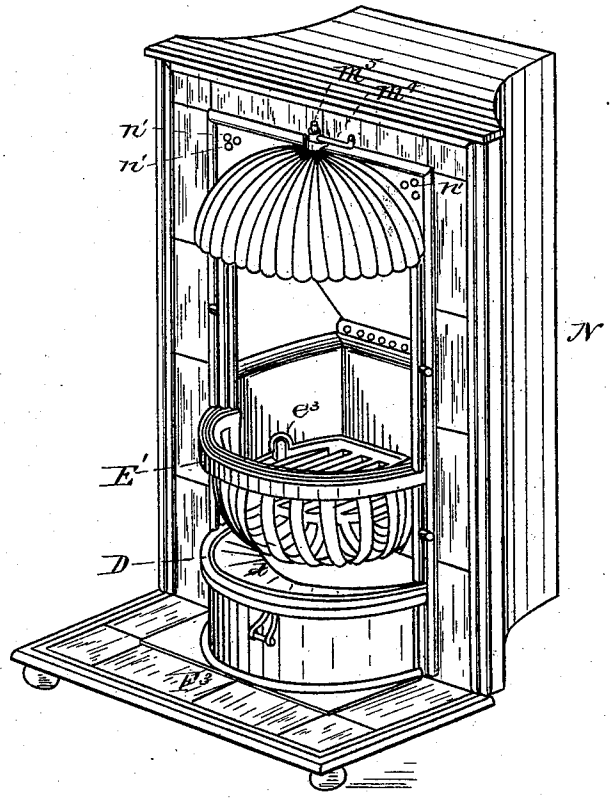


Fig. 1.

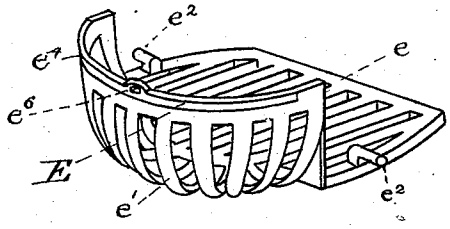


Fig. 2.

WITNESSES.

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Fred. B. Dolan.

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(No Model.) 3 Sheets—Sheet 2.

C. A. WELLINGTON.

OPEN FRONT STOVE.

No. 367,876. Patented Aug. 9, 1887.

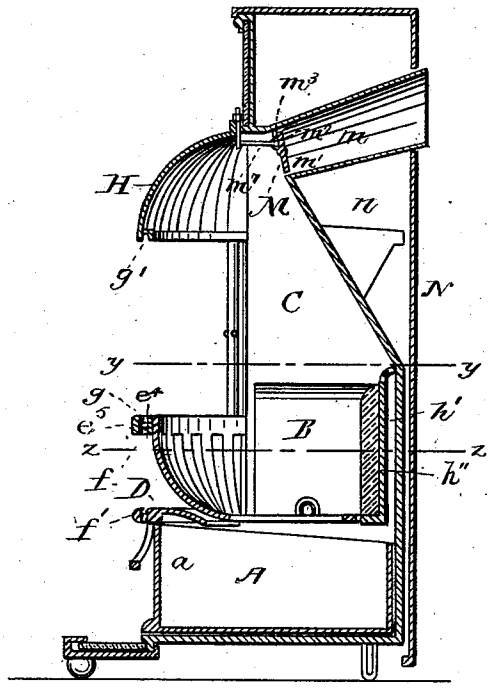


Fig. 3.

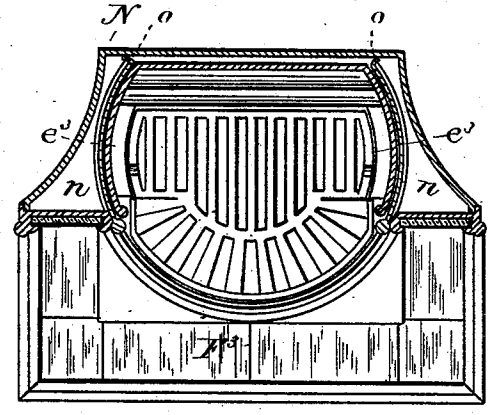


Fig. 4.

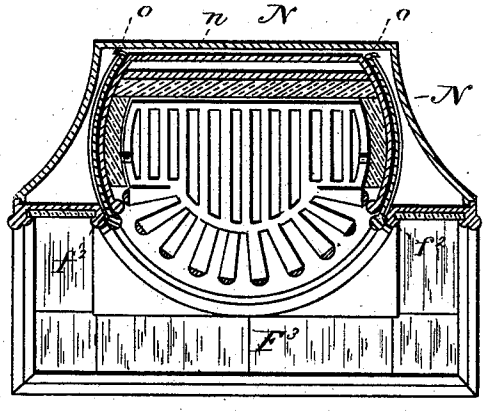


Fig. 5.

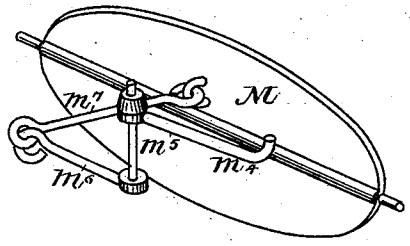


Fig. 6.

WITNESSES.

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(No Model.) 3 Sheets—Sheet 3.

C. A. WELLINGTON.

OPEN FRONT STOVE.

No. 367,876. Patented Aug. 9, 1887.

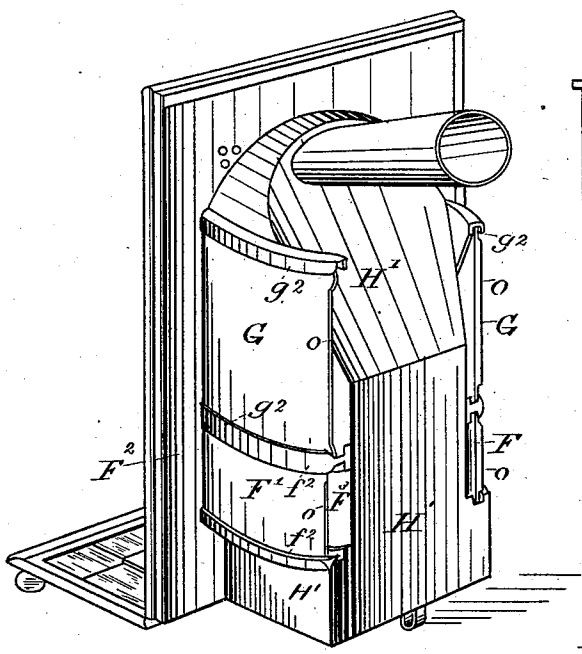


Fig. 6.

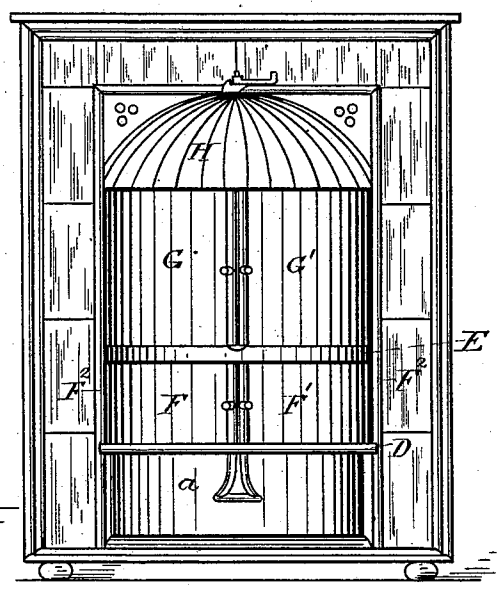


Fig. 7.

WITNESSES.

E. A. Thulen.

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by his attys
Clarke & Raymond

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UNITED STATES PATENT OFFICE.

CHARLES A. WELLINGTON, OF LEXINGTON, MASSACHUSETTS.

OPEN-GRATE STOVE.

SPECIFICATION forming part of Letters Patent No. 367,876, dated August 9, 1887.

Application filed June 17, 1884. Serial No. 135,094. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. WELLINGTON, of Lexington, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in Open-Grate Stoves, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature, in which—

Figure 1 is a view in perspective of a stove containing the features of my invention. Fig. 2 is a view in perspective of the grate. Fig. 3 is a vertical central section of the stove. Fig. 4 is a horizontal section on the line *y y* of Fig. 3. Fig. 5 is a horizontal section on the line *z z* of Fig. 3. Fig. 6 is a view in perspective of the back portion of the stove, showing the outer casing removed. Fig. 7 is a front elevation of the stove, representing the doors or sliding plates, hereinafter described, very nearly closed. Fig. 8 represents in perspective the damper and attachments for operating the same.

The invention relates to various details of construction, all of which are hereinafter more fully described.

Referring to the drawings, A represents the ash-pit, B the fire-pot, C the combustion-chamber. The ash-pit is made high and deep, to provide room or space for the large ash-pan *a*, the side and top edges of which, when in position in the ash-pit chamber, are outside the inner surface of the walls of the fire-pot.

Arranged to cover the front portion of the ash-pit is the curved plate D. This plate has three functions. First, it supports the sliding doors or front, hereinafter referred to; second, its upper surface, *d*, is inclined downward and inward, so that ashes falling thereon shall be guided into the ash-pan; and, third, it forms a partial division between the ash-pit chamber and the grate, and thereby serves in itself to some extent, and also in connection with the sliding plates and ash-pit, to regulate the combustion.

The grate E, preferably, is cast in one piece and has the flat grated portion or bottom *e* and the curved grated front *e'*, which is shaped and bears the relation to the flat section, shown in the drawings in Fig. 2. It is pivoted by the pivots or lugs e^2 to the side plates, e^3, so that the front portion of the grate may be moved upward and inward, and the rear portion downward, in dumping its contents into the ash pan or pit, and the ash pan and pit are made deep enough to receive the full contents of the grate when dumped into it in this manner. When the grate is in its normal position, its front edge, e^4, comes in contact with the curved metal rail or bar e^5 and fits very snugly along its entire edge thereto. The grate also has a hole, e^6, in its front edge for the reception of a poker-handle or any other device for lifting and dumping the same, and the curved metal rail is cut away somewhat opposite it to provide access to the hole. The curved rail has in its under side a groove, *f*, and this groove, in connection with the groove *f'* in the plate D, provides the supports and guides for the movable front plates, F F'. These plates, when not in use, are moved backward through slots f^2 in the wings F^2, and backward in guiding-grooves f^3 on the inner casing, F^3, of the stove. When moved forward so that their edges meet, they entirely close the grate-section between the lower plate, D, and the rail E'. The curved rail E also serves as a support for the combustion-chamber doors G G', and it has a narrow groove, *g*, by which their lower edge is guided. Their upper edge projects into a deeper recess, *g'*, in the under surface of the hood H. These sliding doors or sections are movable through slots or holes in the wings F^2, backward upon suitable guides or supports, g^2, and when not in use the entire front of the combustion-chamber is open or exposed, as in any open-grate stove; but when moved forward or closed they act to close the combustion-chamber and convert the stove, in connection with the closed front plates, F F', into a close stove; or they may be simply used as a blower. The hood projects well out from the upper portion of the casing of the stove, and sufficiently to form a cover to the combustion-chamber extending over the outer edge of the grate.

The side and rear casing of the stove is made of iron, and there is a flue, *h'*, between the rear wall of the combustion-chamber and the back portion of the casing, which connects the ash-pit space with the combustion-chamber, the flue being covered by a perforated ash or coal guard, *v*.

The side and rear casing may be cast in one

or more pieces, and the lateral extensions or wings F^2 furnish a support for tile or ornamental panels. F^3 represents the hearth, which preferably is of the same width as the frame and extensions.

A damper, M, is arranged in the direct escape-port m of the stove, which opens from the rear wall, near its top. This damper, preferably, is so shaped and pivoted that its lower portion, m', moves outwardly, and its upper portion, m^2, inwardly, as I find by this arrangement a quicker escape for the smoke and gases is provided. It has also a stop, m^3, against which the upper edge comes in contact and prevents the damper from being shut tightly, there being always a narrow opening along the under surface thereof.

The damper is operated by means of a lever or handle, m^4, pivoted to a rod, m^5, which extends through the hood and carries at its lower end an arm, m^6, whose end is connected with the upper portion of the damper by means of a link, m^7. The side and rear portions of the stove, when it is not used as a fire-place and inclosed by a wall, are covered with a metal casing, N, in a manner to provide the air-space n about the casing, and this shell is provided with the perforations and holes n', by which the air which enters through the lower end of the flues and becomes heated may escape into the room. The top of the outer casing is preferably lifted sufficiently from the remainder of the casing to provide a narrow slit on the front side and back, if desired, through which the heated air can escape. This casing is fastened to the body of the stove by bolts, or in any other desirable way.

Each of the doors or sliding sections has at its inner end a lug or stop, o, for limiting the extent of its outward movement.

The plate D preferably has holes extending from the groove f' downward and the full width of the groove, through which ashes or coal or other obstacles may escape or drop upon the movement of the lower edge of the plates therein, so that the movement of the plates shall not be interfered with. The ash-pan may project or extend forward sufficiently to come under these holes, if desired, so that the ashes or coal shall be pushed or fall directly into it. The groove g in the bar or rail E preferably should be made shallow, and the front wall of the groove preferably should not be continuous, but should have spaces upon the same or substantially the same plane as the lower surface of the groove, in order that the ashes, coal, or any obstacles may be easily thrown from the groove by the movement of the plates. The upper groove, g', should be considerably deep, and the doors when not heated must not fill it, for it is necessary to provide sufficient space for the upward expansion of the doors, when heated, to permit of their being moved when in an expanded condition.

It will be seen that by arranging the grate so that it dumps inwardly the ashes and coal are thrown backward, and that therefore ashes and dust are not so likely to escape into the groove; also, that the lower doors may be closed and the upper doors almost entirely closed, and still the grate can be dumped, as a space not wider than the poker or device used for lifting the grate between the front door is all that is necessary to provide for the dumping operation, if desired.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States—

The combination, in an open-grate stove or fire-place, of the grate A, having a curved outwardly-extending front section, the metal rail c^3, having the curved guiding-groove g in its upper surface and the curved guiding-groove f in its under surface, the plate D, having the curved guiding-groove f', the hood H, arranged to extend outwardly from the frame of the stove and having the curved guiding-groove g', the curved plates G G', movable on a circular path within the side walls of the fire-place to expose the full width of the combustion-chamber, the guides or supports g^2 for said plates, formed in continuation of the guiding-grooves g' g, the curved plates F F', arranged to be moved upon the arc of a circle, and supported when opened by the guides f^2, and when closed by the grooves f f', substantially as and for the purposes described.

CHARLES A. WELLINGTON.

Witnesses:
F. F. RAYMOND, 2d,
FRED. B. DOLAN.