

(No Model.)

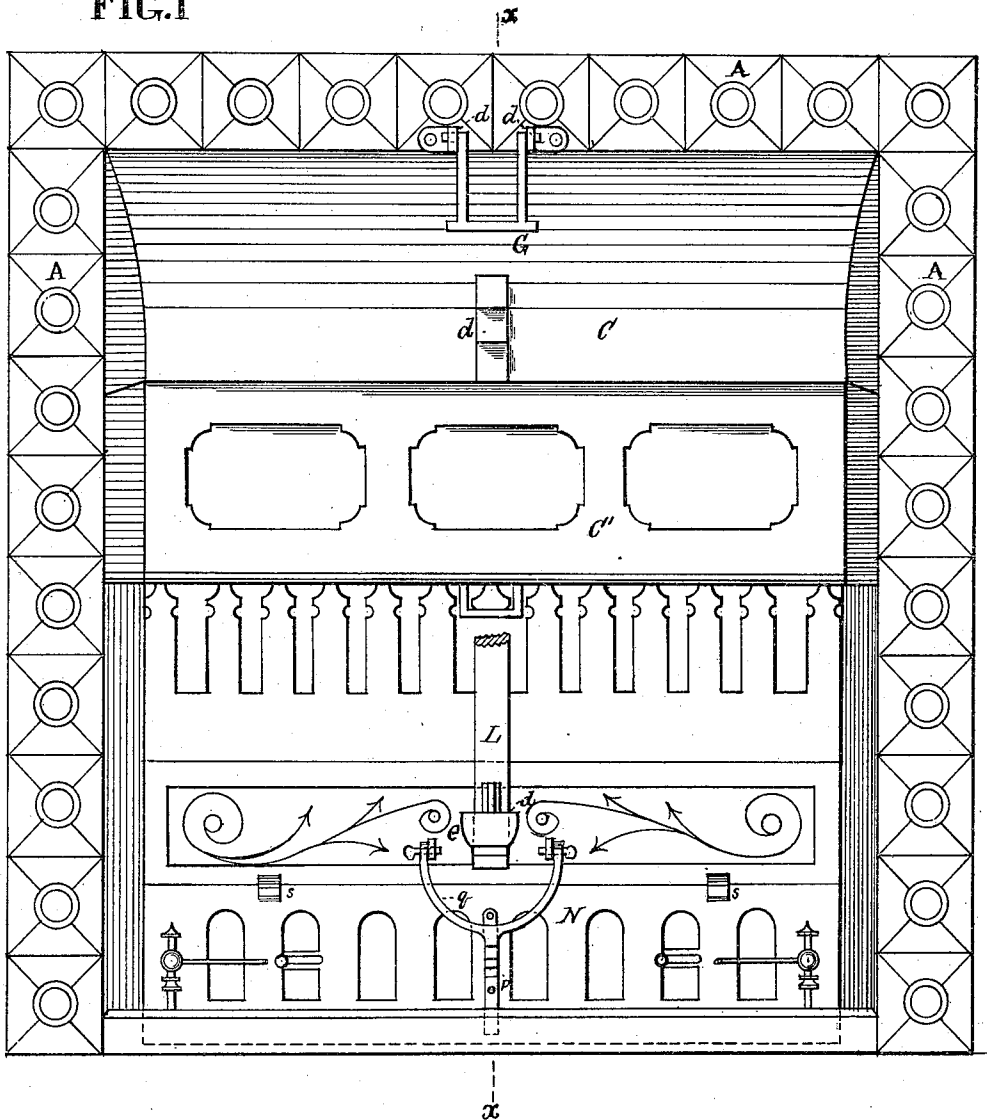
3 Sheets—Sheet 1.

J. H. McILVAIN.
OPEN FIRE GRATE.

No. 479,916.

Patented Aug. 2, 1892.

FIG. 1



WITNESSES

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FIG. 2

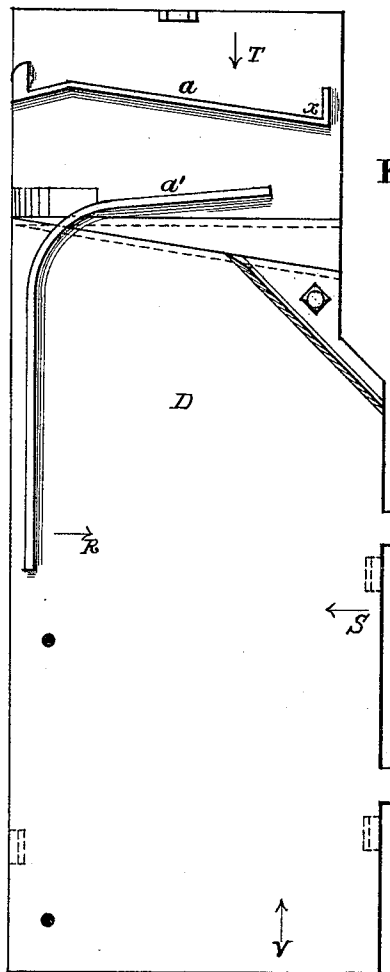


FIG. 3

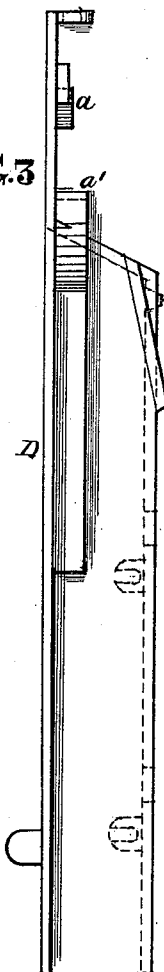


FIG. 4

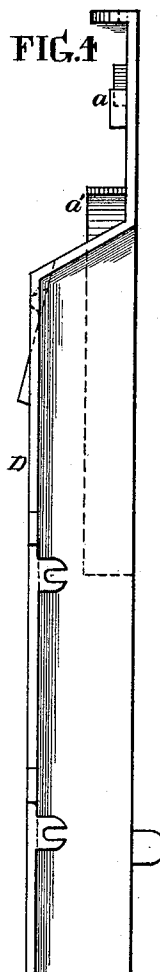


FIG. 5

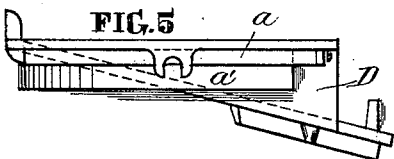


FIG. 6

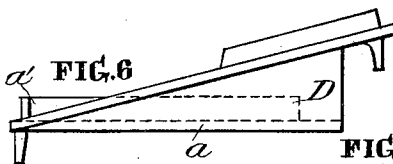


FIG. 7

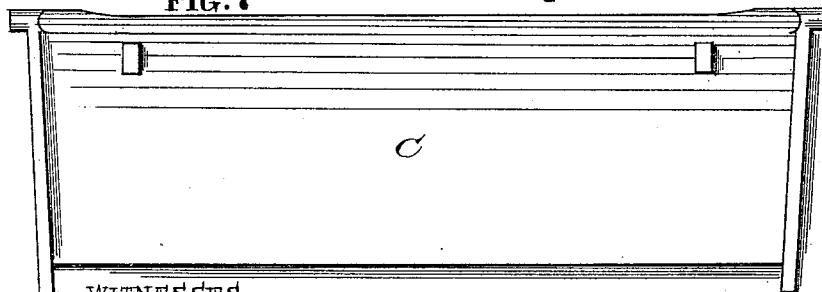
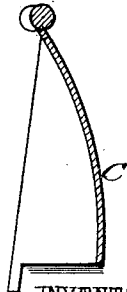


FIG. 8



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OPEN FIRE GRATE.

3 Sheets—Sheet 3.

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FIG. 9

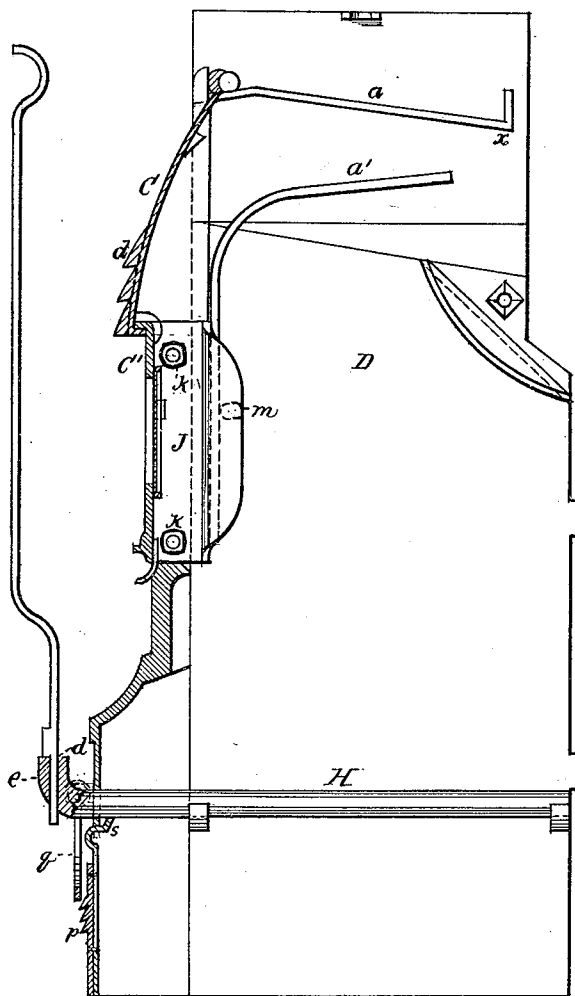


FIG. 10

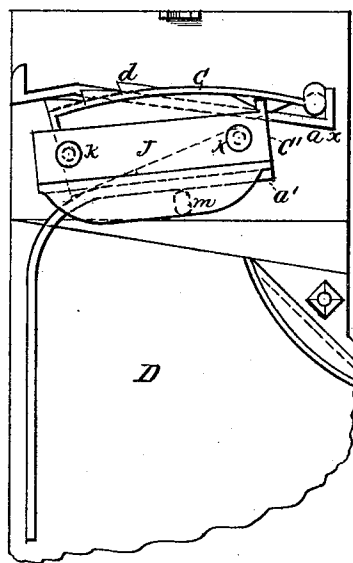


FIG. 12

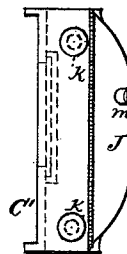
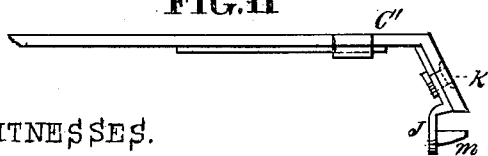


FIG. 11



WITNESSES.

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UNITED STATES PATENT OFFICE.

JOHN H. MCILVAIN, OF CAMDEN, NEW JERSEY, ASSIGNOR TO CHARLES F. BARTLETT, OF PHILADELPHIA, PENNSYLVANIA.

OPEN FIRE-GRATE.

SPECIFICATION forming part of Letters Patent No. 479,916, dated August 2, 1892.

Application filed July 8, 1890. Serial No. 358,072. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. MCILVAIN, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented certain new and useful Improvements in Open Fire-Grates, of which the following is a specification.

The invention relates particularly to an improvement in a segmental sliding cover or blower arranged in front of the portion of the grate that acts as a receptacle or fire-box for containing the fuel that serves the purposes during combustion of generating heat for radiation into an apartment. This cover is so arranged and connected with the jambs and front of the fireplace as to be capable of partial sliding movements over and upon fixed ways cast upon the jambs over and on which said cover slides, (when motion is imparted thereto by an operator,) so that when the coals of fire are sufficiently ignited and caused to slide inward within the fireplace out of view, whereby they rest upon cleats or ways rigid on the jambs formed thereon for their reception. A reverse movement by the same means employed to raise the portions of the blower causes a descending motion to be imparted thereto, thereby inclosing the fireplace and its contained mass of ignited coals, which when given draft below the grate causes increased ignition of fuel. When the coals are sufficiently ignited, the blower-covers are raised to permit of radiation of heat into the apartment. A slip-bar, detachable by hand, is arranged in sockets of the lower portion of the front of the fireplace to rock the grate-bars for the purpose of removing the ashes and débris caused by the consumption of fuel. The novel arrangement of the covers is designed especially for the purpose of always retaining the blower-cover in connection with the fireplace ready for use, obviating the necessity of removing the same to one side by hand when it becomes heated by the fire, and also decreases the danger incurred by contact of clothing of the operator with a heated cover or mass of fire.

I am aware that the accomplishment of the results obtained by the sliding cover have been attained by the use of cords with pul-

leys and weights to counterbalance the weight of the covers; but these are found in practice to be defective, because not durable and liable to become disordered by use or in the hands of careless operators, and when they become deranged it is almost impossible to remedy their defects without removing and rebuilding the fireplace. My invention is designed to overcome these defects and objections, as will be more fully understood from the following detailed description.

In the accompanying drawings, which make a part of this specification, Figure 1, Sheet No. 1, is a front elevation of a low-down grate, showing a face view of the segmental blowers or covers C C'. Fig. 2, Sheet No. 2, is a face view of one of the jambs D. Fig. 3 is an edge view of a jamb D, taken in the direction of the arrow R of Fig. 2. Fig. 4 is a like view of same in the direction of the arrow S. Fig. 5 is an end view of same, taken in the direction of the arrow T. Fig. 6 is a like view taken in the direction of the arrow V. Fig. 7 is an inner face view of blower or cover C. Fig. 8 is a vertical cross-section of same. Fig. 9, Sheet No. 3, is a vertical section taken through the line *xx* of Fig. 1, showing the blower and cover portions C C' in their positions while in use. Fig. 10 is a like view showing the covers C C' in their elevated positions. Fig. 11 is a plan or edge view of an end of the lower front cover C'. Fig. 12 is an end view of the cover portion C'.

Like letters of reference in all the figures indicate the same parts.

A is the front or casing of the grate, which surrounds the outer edges of the head and jambs of the fireplace.

C C' are respectively the upper and the lower segmental portions of the improved blower, which when in use to cause draft through the body of fuel during the process of combustion are in the position represented in Figs. 1 and 9; but when the coals are thoroughly ignited these portions are elevated by the operator into the positions they assume, (see Fig. 10,) with their inner edges resting upon the cleats *a a'*. (Seen in detail in Figs. 2, 3, 4, 5, 6, 9, and 10. See Sheets Nos. 2 and 3.) These cleats are cast upon the inner surfaces of the jambs D near their upper ends

on each side of the fireplace of sufficient strength to support the weight of their respective portions C C', when resting thereon. and the upper one *a* is so inclined downward
 5 at its inner end *x* as to retain the pieces on their respective cleats, and prevent their sliding downward accidentally and covering the fire. Secured to each end of the cover C' by the bolts *k* are the plates J, (see Figs. 9, 10, 11,
 10 and 12,) one on each side, having a lug *m* on each, which project laterally from the outer surfaces of said plates and engage with the inner surfaces of the cleats *a'*, which prevent the cover from being drawn outward from its
 15 connection with the cleat during any movement of raising and lowering said cover, the elongated vertical portion of the cleat *a'* acting as a guide and preventing said cover from being drawn out of place when drawn
 20 downward to cover the fire.

A series of ratchet-teeth *d* (see Fig. 1) are arranged one above the other (see Figs. 1 and 9) on the outer face of the upper cover C, one of which may be caused to engage with the
 25 pivoted handle G, that has play in the bearings *d*, which are rigid upon the head of the casing A to assist in maintaining the portions in their elevated position. The lower portion C' remains in connection with the portion C
 30 until released and lowered.

The apparatus is provided with the grate-bars H (see Fig. 9) and the slip rocking bar L, which passes through the loop *e* and its end resting in the socket *d*. By means of

said bar the grate is oscillated to clear it of
 35 ashes and cinders.

When access to the ash-pit is desired to remove the débris therein, the cover N is raised from the lower side, it being provided with hinges *s*, and one of the teeth *p* is caused to
 40 engage with the loop *q* for the purpose of retaining said cover in an elevated position.

I claim as my invention—

1. The segmental covers C C', constructed as herein shown and described, in combination with the jambs D, having the cleats and guides *a a'* formed upon their surfaces, substantially as and for the purpose set forth. 45

2. The cover C', having the plates J, provided with the lugs *m*, bolted to its ends or side portions for the purpose of preventing said cover from being drawn outward from connection with the cleats *a'* of the jambs D during the upward or downward movements of the said cover, substantially in the manner herein shown and described. 55

3. The combined mechanism for open grate or fireplace, consisting of the portions C C', plate J, bolted to the portion C', and the jambs D, having the cleats *a a'* cast upon their surfaces and adapted for the right and left hand sides of the fireplace, substantially as herein shown and described. 60

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Witnesses:

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