2 Sheets--Sheet 1.

J. J. McCORMICK

Magazine Fire-Place Stove.

No. 164,015. Patented June 1, 1875.

Fig. 1.

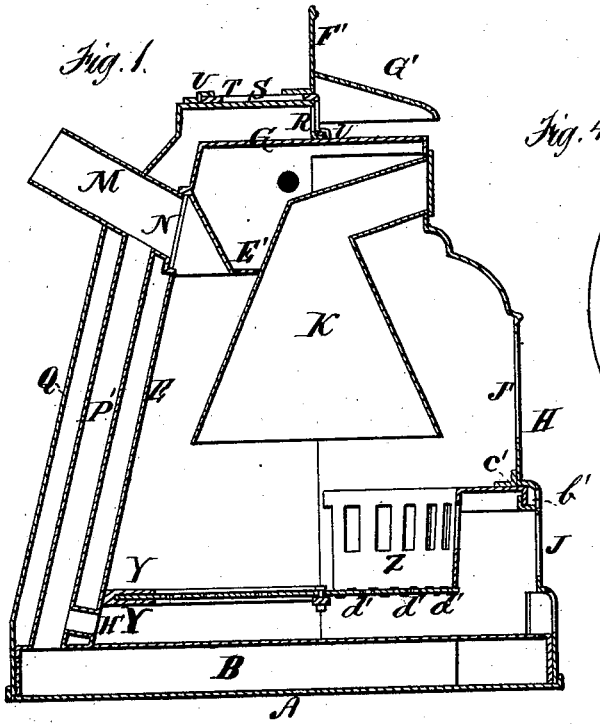


Fig. 4.

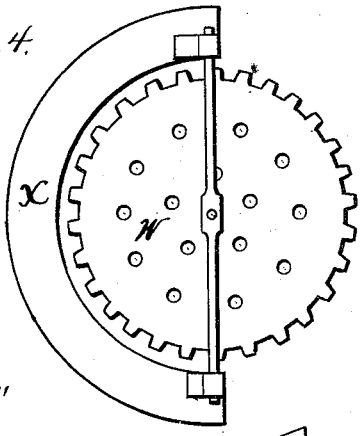


Fig. 5.

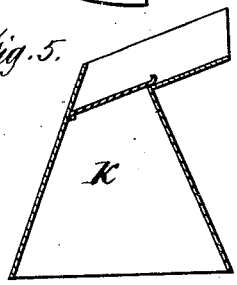


Fig. 2.

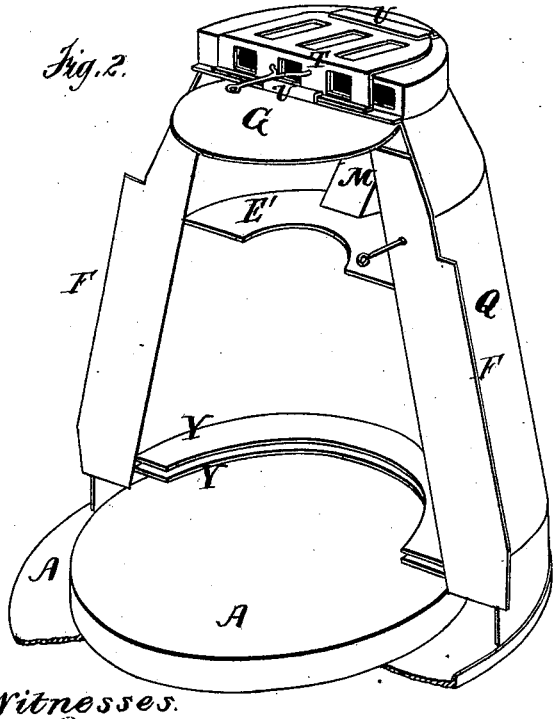
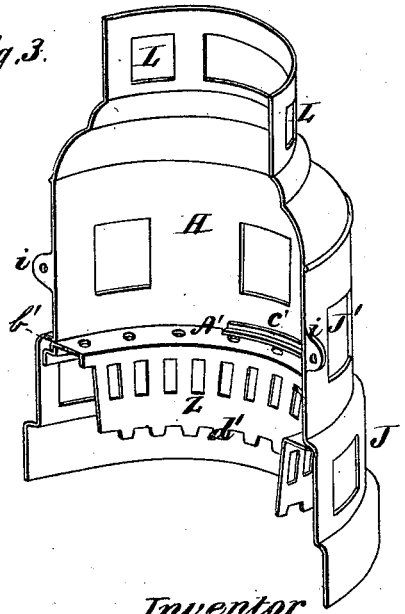


Fig. 3.



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2 Sheets--Sheet 2

J. J. McCORMICK

Magazine Fire-Place Stove.

No. 164,015. Patented June 1, 1875.

Fig. 6.

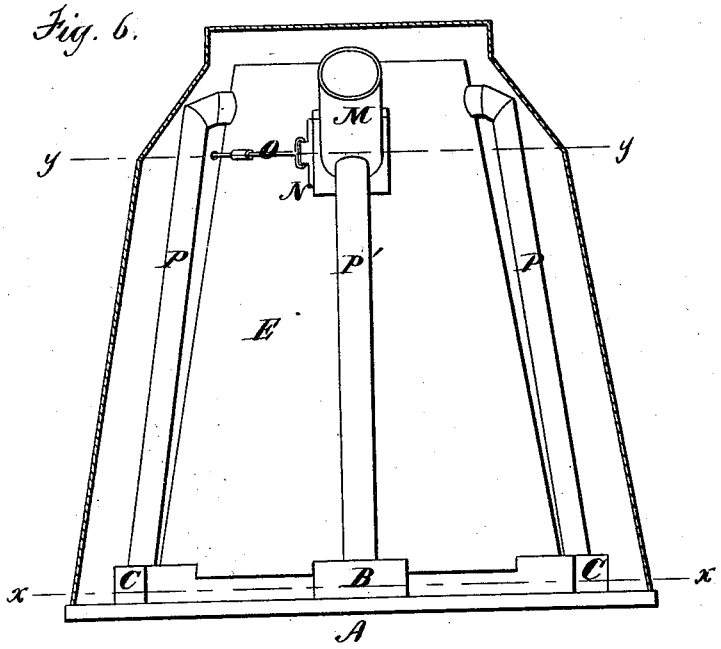


Fig. 7.

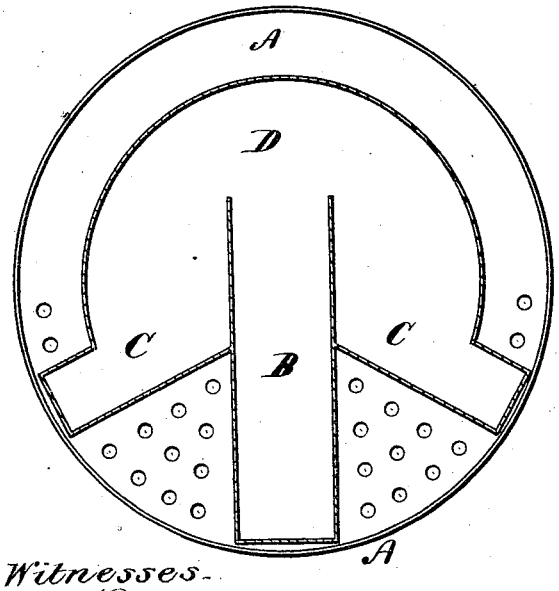
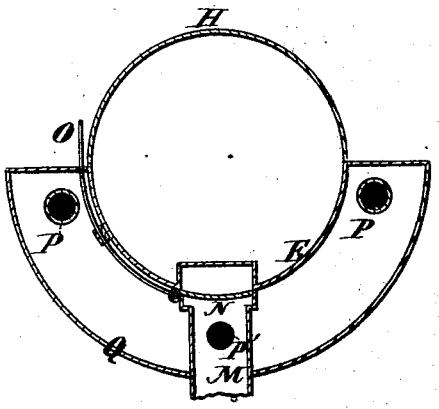


Fig. 8.



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UNITED STATES PATENT OFFICE.

JOSEPH J. McCORMICK, OF BALTIMORE, MARYLAND, ASSIGNOR TO BENTLEY C. BIBB, OF SAME PLACE.

IMPROVEMENT IN MAGAZINE FIRE-PLACE STOVES.

Specification forming part of Letters Patent No. **164,015**, dated June 1, 1875; application filed January 23, 1875.

To all whom it may concern:

Be it known that I, JOSEPH J. McCORMICK, of the city and county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Fire-Place Stoves; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1, Sheet 1, is a transverse vertical section of the stove, showing my improvements. Fig. 2, Sheet 1, is a perspective view of the rear half of the stove. Fig. 3, Sheet 1, is a perspective view of the front portion. Fig. 4, Sheet 1, is an inverted plan view of the grate detached from the stove. Fig. 5, Sheet 1, is a sectional view of the magazine detached from the stove. Fig. 6, Sheet 2, is a rear elevation of the stove with the supplemental back removed. Fig. 7, Sheet 2, is a horizontal section in the line *x x*, Fig. 6; and Fig. 8, Sheet 2, is a horizontal section in the line *y y*, Fig. 6.

Similar letters of reference in the accompanying drawings denote the same parts.

My invention has for its object to improve the construction and efficiency of fire-place and other stoves; and to this end it consists, first, in a fire-place stove or heater constructed in two vertical sections adapted to be separated vertically for access to the interior of the combustion-chamber, for the purposes of convenience in fitting it into the fire-place, and facilitating repairs, &c.; secondly, in providing a stove, constructed as last above stated, with a fuel-magazine detachably secured to the front section thereof, so that it may be removed with and from said section when the latter is removed from the rear section for repairs, convenience in fitting, &c.; thirdly, in providing a stove or heater, constructed in two vertical sections, as above stated, with a removable pivoted grate fitted in guides secured to the rear section of the stove, for convenience in making repairs, &c.; fourthly, in providing a stove or heater constructed in two vertical sections, as above stated, with a reciprocating fire-pot front, serrated at its lower edge, and connected with peripheral teeth upon the pivoted grate, located at a short distance from the lower bank of mica windows, and working in guides secured to the front section of the stove for ready removal, protection of the micas, and a means of operating the grate; fifthly, in the combination of three horizontal base-flues, the central one of which extends well to the front of the flue-chamber, with two diving-flues and a rising flue, for the purposes of conducting the heat from the top to the base of the stove, causing it to make the circuit of the flue-chamber, and conducting it to the pipe which conveys it to the room above, after it has partially warmed the room containing the stove.

In the accompanying drawings, A is the circular base of the stove, formed with the central horizontal flue B, and the two horizontal side flues C C, all communicating at their inner ends with the flue-chamber D under the fire-pot. The horizontal flue B is extended well to the front of the flue-chamber D, for the purpose of causing the heat to make the circuit of the flue-chamber before entering the said flue B. E is the rear section or back of the stove, made in the form of a half-conical frustum with outward-projecting side flanges F at the front edges, and an overhanging circular plate, G, at the top.

The back may be made in the form of a half-cylinder, or even with angles, if desired; but for convenience and economy I prefer the half-conical form shown.

H is the front of the stove, formed to correspond with the back section, to which it is attached by any suitable means that will admit of its ready removal.

In this example of my invention I have shown lugs *i* formed upon the edges of the front section, and adapted to fit over bolts or loops secured to the flanges of the rear section. If bolts are employed, they are necessarily provided with nuts to screw down upon the lugs; but if loops are used, they are passed through the lugs to receive suitable holding-pins.

Instead of forming lugs upon the edges of the front section, continuous side flanges may be employed the same as upon the back E.

By this method of construction the stove

may be divided longitudinally for access to the interior in case repairs are needed, and for convenience in fitting it into the fire-place. The front is further provided with two banks of mica windows, J J′, and also carries the magazine K, as shown in Fig. 1. Upon each side of the feed-door or mouth of the magazine other mica windows L are arranged, so that there are in effect three banks of windows. By connecting the magazine directly to the front it is easily removed with the latter when access is to be had to the interior of the stove.

In case a top feed is desired the magazine is suspended directly from the top plate G, and may or may not be removable.

M is the pipe at the upper end of the back, by which the products of combustion are conducted into the chimney, and N is the damper for opening and closing the same when the rod O is operated at the front of the stove. P P′ are vertical flues arranged outside or in rear of the stove-back to connect the base-flues B and C C with the pipe M and upper end of the stove, respectively. The rear ends of the base-flues project beyond the plane of the stove-back for the above purpose, their arrangement being shown clearly in Fig. 6. These various flues, together with the back of the stove, are inclosed by a supplemental back, Q, which rests upon the rear of the base A, extends forward so as to bear against the side flanges of the back, and projects over the circular top plate G, closing down upon the latter with close contact. The space inclosed by this supplemental back forms a hot-air reservoir, to which fresh air is supplied through the perforations in the base of the stove.

When the air becomes heated by contact with the stove and flues it is either discharged directly into the room containing the stove or into the chimney for passage to the rooms above by the following means: The overhanging ledge or top of the supplemental back is formed with two registers, one, R, through the front, and the other, S, through the top, which are adapted to be opened and closed by the slotted angular plate T, as shown in Fig. 2. The slots in the overhanging ledge are so arranged that those in the front are open when the top ones are closed, and vice versa. The front slots supply hot air from the reservoir to the room containing the stove, while the top slots supply it to the pipe which conveys it to the upper room. The sliding register-plate is guided by ears U upon the ledge, and operated by a suitable handle, as shown. By this means a large quantity of hot air is held in reserve within the stove, which can be discharged at will for rapidly heating a room. W is the grate, pivoted upon a tilting-bar, which in its turn is hung in the ends of a semicircular plate, X. This plate is supported and held between two similarly-shaped plates, Y, secured to the back of the stove, or within a groove formed in said back. Suitable stops at the ends of the plate X prevent it from sliding between the double plates when the grate is shaken. Z is the front of the fire-pot, made in the form of a semicircular screen, and having a top flange, A′, by which it is supported and guided upon the front of the stove. This flange extends just above the lower bank of mica windows, and is bent down at its outer edge, so as to fit within a corresponding guide-flange, *b′*, in the stove front. A strip, *c′*, also attached to the stove front above the flange of the screen holds the latter to its place.

The flange A′ supports the body of the screen at some distance from the stove front, so that a considerable space is formed between the two, which serves as a hot-air reservoir or passage at the front of the heater. From this passage the hot air escapes upward at the front of the stove, through perforations in the flange A′, shown in Fig. 3. The lower edge of the semicircular fire-pot screen is formed with teeth *d′*, which engage with corresponding teeth upon the edge of the grate, for the purpose of shaking the latter, by reciprocating the fire-pot front in its guides. This movement of the screen is effected by a suitable shaking-handle, inserted through the front of the stove.

By constructing the screen as above described, it prevents the ashes, &c., from banking up the lower row of mica windows, and at the same time permits a full view of the fire. Its combination with the fire-grate adapts both to be kept clear of accumulated ashes and cinders, while both are easily separated for repairs, &c., when the front of the stove is removed, as above described.

E′ is a deflecting-plate, secured to the interior of the stove back, near the top of the magazine, being hollowed out to receive the latter, as shown. This plate serves a double purpose, to wit: First, it guides the products of combustion directly into the chimney, through the pipe M, when the direct draft is open; secondly, when the direct draft is closed the products of combustion strike the deflecting-plate E′, pass forward, and to the top of the stove, thence into the base-flues C C, through the side flues P, thence into the central base flue B, and from the latter through the central pipe P, and the pipe M, to the chimney. F′ is the frame of the stove, fitting against the joint formed by the flanges of the front and back sections, and extending above the top register in the form of a perforated covering-screen, as shown at G′, in Fig. 1.

The frame is employed to cover the joint between the stove and fire-place, and form an ornamental trimming in the usual manner.

The arrangement of the base flues, in connection with the vertical flues, directs the course of the draft to the best advantage for radiating the heat into the room with the stove, while the heat from the reservoir is being discharged through the top register to warm the rooms above.

An opening, H′, through the back of the

stove, connects the space under the fire-grate with the central vertical flue P′, so that when the damper N is closed, and the grate shaken, the dust and light ashes will pass down under the grate, and thence through opening H′, central pipe P′, and pipe M, into the chimney. By this means the dust is prevented from being thrown into the room.

Having thus described my invention, what I claim is—

1. In a fire-place stove or heater, the combination of two vertical sections, adapted to be separated vertically, for access to the interior of the combustion-chamber, substantially as and for the purposes set forth.

2. In combination with a stove or heater, constructed in two vertical sections, adapted to be separated vertically, for access to the interior of the combustion-chamber, the fuel-magazine K, detachably secured to the front section of the stove, substantially as and for the purpose set forth.

3. In combination with a stove or heater, constructed in two vertical sections, adapted to be separated vertically for access to the interior of the combustion-chamber, the pivoted grate W, supported in the removable stop-plate X, adapted to fit the guides Y, secured to the rear section of the stove, substantially as and for the purpose set forth.

4. In combination with a stove or heater, constructed in two vertical sections, adapted to be separated vertically, for access to the interior of the combustion-chamber, the reciprocating fire-pot front Z, serrated at its lower edge, connected with the peripheral teeth of the pivoted grate W, and located a short distance from the lower bank of micas J, substantially as and for the purpose set forth.

5. In combination, the horizontal base flue B, extended well to the front of the flue-chamber D, the base flues C C, diving-flues P P, and rising flue P′, substantially as and for the purposes set forth.

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