No. 714,399. Patented Nov. 25, 1902.

J. K. ROSS.

OPEN FIREPLACE STOVE.

(Application filed Oct. 5, 1901.)

(No Model.)

Fig. 5.

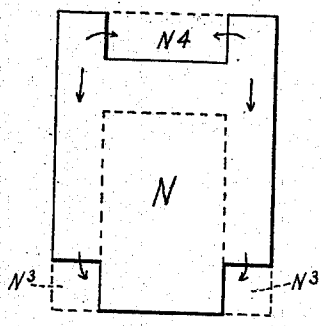


Fig. 2.

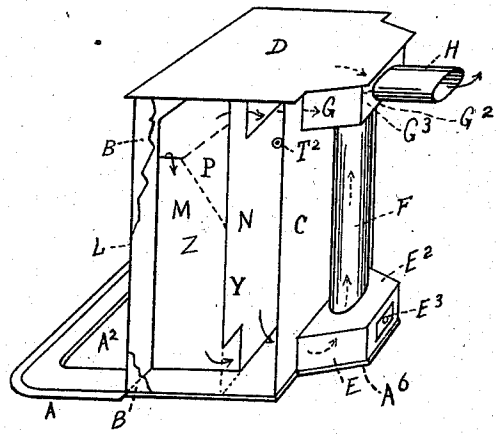
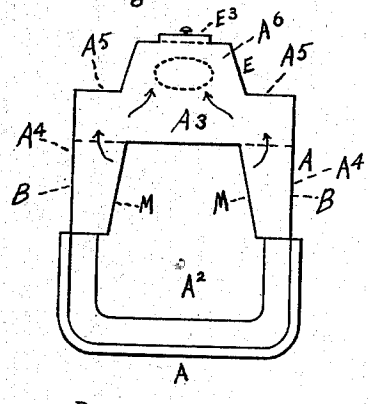


Fig. 3



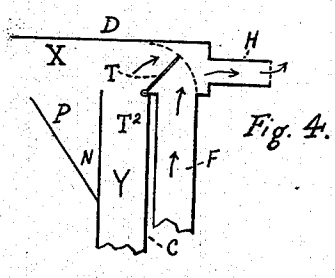
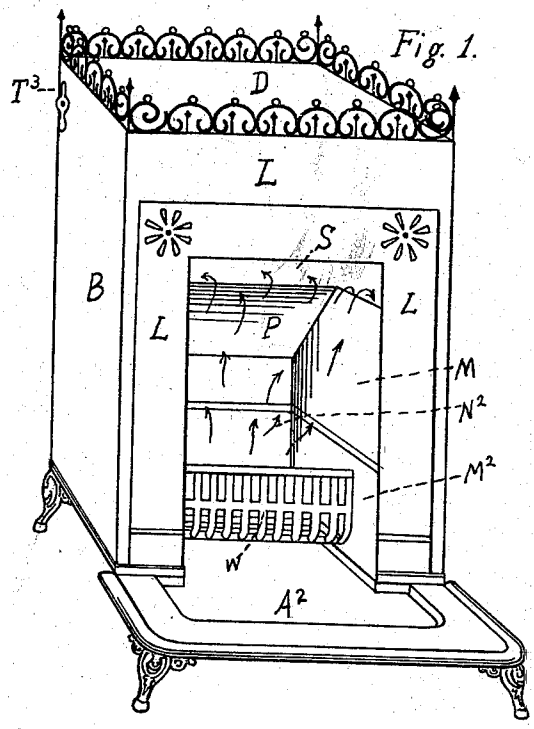


Fig. 4.

Fig. 1.



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OPEN-FIREPLACE STOVE.

SPECIFICATION forming part of Letters Patent No. 714,399, dated November 25, 1902.

Application filed October 5, 1901. Serial No. 77,678. (No model.)

To all whom it may concern:

Be it known that I, JAMES K. ROSS, a citizen of the United States, and a resident of the city of Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Open-Fireplace Stoves, of which the following is a specification.

The principal object of my invention is substantially to secure a more perfect healthful heat and a more thorough ventilation.

The several features of my invention and the various advantages resulting from their use conjointly or otherwise will be apparent from the following description and claims.

In the accompanying drawings, making a part of this specification, and in which similar letters of reference indicate corresponding parts, Figure 1 is a view in perspective of my stove, showing the front and side and the upper surface of the hearth and of the stove-body. Fig. 2 gives a perspective view of the stove when viewed from a position at a distance to one side of the stove and in the rear of the latter. Herein the relative position and construction of the sides and back of the fireplace and the position of the flues is illustrated by dotted lines. Fig. 3 shows in plan the hearth and bottom plate adapted to be connected to the other exterior fittings and to the interior fittings. Fig. 4 gives a perspective view of the upper rear chamber and exit and damper, the side of the vertical flue and the end of the chamber being removed to disclose the damper for controlling and giving direction to the draft through the stove. Fig. 5 is an elevation of the middle or back radiating-plate, which is placed at right angles to the side plates and attached substantially as indicated in Fig. 2. The various arrows in the several pictures show the direction and course of the draft under given positions of the controlling-damper.

I will now proceed to describe my invention in detail.

A indicates the bottom plate of the stove. One portion A^2 constitutes the hearth-plate of the stove. Upon the remaining portion A^3 of the stove-plate the sides and vertical interior fittings and ash-chamber are located. Thus B B are the exterior side plates of the stove and which respectively rest upon the bottom plate at or near the edges A^4 A^4 thereof. The exterior back plate of the stove rests upon the bottom plate A at or near the rear edge A^5.

D indicates the top plate fixed upon the exterior walls of the stove.

At the rear of the back C is a small low-down chamber E, whose walls are supported upon the rear portion A^6 of the bottom plate. The latter constitutes the floor of this chamber. This chamber E is provided at the rear with a door E^3, whereby this chamber and the bottom of the adjacent flue can be reached and cleaned of soot or ashes, &c., which may from time to time accumulate therein. Beneath the top D and at the rear of the back is a chamber G. The top stove-plate D forms the top of the chamber G. Connected to the top part E^2 of the chamber E and to the bottom G^2 of the chamber G is the conduit (flue) F. This conduit F connects the interior of the chamber E with the interior of the chamber G. This conduit F is preferably entirely out of contact with the back stove-plate C. Connected to the rear wall G^3 of the chamber G is the flue H, which is the exit-passage for the chamber G.

The fireplace has the side walls M M and vertical back N. The bottom plate of the stove is the bottom of the fireplace and may be lined with brick in the usual manner. The fireplace has a grate W of suitable form. These side walls and the back may have suitable linings. One style of such linings, as M^2 and N^2, is shown. The back of the fireplace has also a deflection-plate P, which forms the upper portion of the fireback and the roof over a part of the top of the fireplace. The back plate N does not stop at the sides M M and at the deflecting-plate P, but extends laterally to the stove extension-walls B B and upwardly to the top plate D. This plate has openings N^3 N^3—that is, it is cut away at the lower corner portions—and it also has an opening N^4 at the middle of its top portion.

The front plate L of the stove covers the space between each inner wall M and the adjacent outer wall B and also covers the front of the flue S, which extends from the top of plate P to the roof.

A damper T is present in the upper rear

portion of the stove and controls and regulates the passage of the volatile products and the heated air arising therewith into the chamber G. The damper-rod T^2 is operated by a handle T^3.

Various parts of the stove are fastened or connected together in any of the well-known methods. Hence a description of such methods is properly omitted herefrom.

The mode in which my invention operates is as follows: Fuel being placed in the grate and set on fire, heat generated radiates from the front of the fire. The side walls becoming hot also radiate heat, and the hearth (bottom) plate A becoming hot also radiates heat below and above. The volatile products of combustion, together with more or less heated air, rise and are by plate P deflected forward and at their first opportunity pass up through the throat S and into the chamber X. If the damper T be open, these heated volatile elements will pass directly into chamber G and thence will exit through the flue H. Ordinarily it will be desirable to obtain all of the heat which is practicable from the fuel. In such a case I close the damper T. The heated elements passing through the throat and into the chamber X will reach the damper and being prevented by the closed damper from passing directly into chamber G and attempting to find an outlet will pass down the back flue Y and the side flues Z Z and in so doing will give off much of their heat to the adjacent exterior walls of the stove. The heated elements will then from the side flues pass through the openings N^3 in the back plate and join the heated elements in the flue Y and all will pass into the lower chamber E and then through the outer flue F into chamber G and then pass out through the exit-passage H. During such travel these heated elements will have raised the temperature of the chamber E and flue F and have kept chamber G and exit-conduit H hot.

It will be observed that various advantages result from my improved construction of stove.

An open fireplace is a desideratum. In connection therewith by my improvements I am enabled to cause the entire exterior surface of the stove to be uniformly heated. The heat generated is distributed with remarkable and exceptional evenness and in greater bulk with the expenditure of less force. I am thereby enabled to warm the room or a large space in front and around the stove generally by the radiation, as aforementioned. Thus I counteract and, in fact, prevent the unpleasant chill which is ordinarily experienced while facing the heated glare radiating mainly from the front portion of the ordinary open fire.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. An open fireplace having deflecting radiating-plate P, throat S, upper chamber X connected to such throat, and directly beneath the top D, side descending flues Z, Z, and back descending flue Y, each connected at its top to chamber X, and the lower exterior chamber E connected to the lower rear portion of flue Y, exterior flue F connected to the upper part of chamber E, upper chamber G, connected to the upper end of the flue F and in front of the chamber X, and damper T for controlling the passage of the volatile matters of the fire, from chamber X, into chamber G, substantially as and for the purposes specified.

2. In an open-air fireplace-stove, the fireplace, having the inner walls M, M, and back wall N, deflecting radiating-plate P, upper chamber X, whose roof is the stove-top, rear lower exterior chamber E and upper exterior chamber G, and exterior rear flue F connecting the flues E and G, exit-orifice H connected to chamber G, side flues, each formed between the walls M and B, and connected above to chamber X, rear flue Y formed by the back of the stove and the plate N, extending to chamber X, damper for controlling the connection between chamber X and chamber G, passages N^3 at and through the lower corners of plate N, all substantially as and for the purposes specified.

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Attest:

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