

S. H. La RUE.
Base-Burning Stoves.

No. 158,847.

Patented Jan. 19, 1875.

Fig. 1

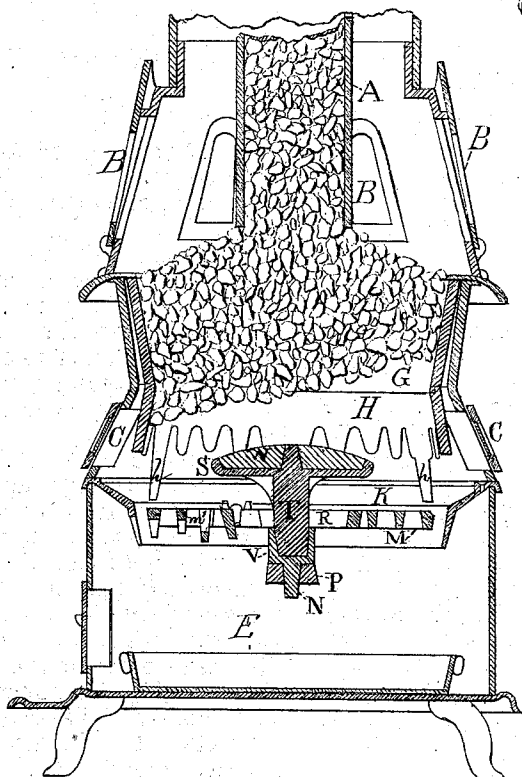


Fig. 2

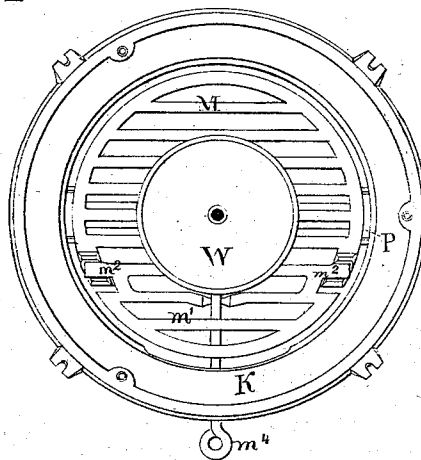
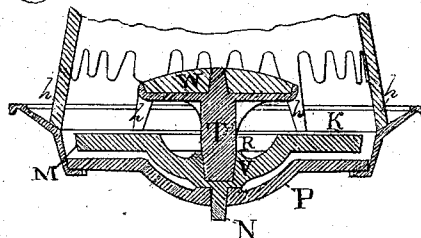


Fig. 3



Witnesses { D. L. Shivers
John F. Grant

Inventor.
Silas H. La Rue

UNITED STATES PATENT OFFICE.

SILAS H. LA RUE, OF PHILADELPHIA, ASSIGNOR OF ONE-HALF HIS RIGHT
TO CHARLES M. RUNK, JONATHAN W. GRUBB, AND FRED. A. R. BALDWIN,
OF ALLENTOWN, PENNSYLVANIA.

IMPROVEMENT IN BASE-BURNING STOVES.

Specification forming part of Letters Patent No. 158,847, dated January 19, 1875; application filed
November 18, 1873.

To all whom it may concern:

Be it known that I, SILAS HOFFMAN LA RUE, of Philadelphia, Pennsylvania, have invented an Improved Base-Burning Stove, of which the following is a specification:

My invention relates to those stoves which have a lower tier of mica lights in doors around the lower end of the fire-pot for the purpose of seeing the state of the lower portion of the fire.

The object of my invention is to construct the lower portion of the fire-pot and also the grate so that clinkers and refuse matter may easily be removed therefrom; also, to prevent the air in the ash-pit from deadening the fire by entering the grated sides of the fire-pot. I accomplish this by placing a ring around the periphery of the grate, so as to exclude the air in the ash-pit from passing into the fire through the grated sides of the fire-pot. Another object is to construct the grate so that clinkers and refuse matter can at all times be removed through a central opening, and so that the air which enters through this opening shall be forced outward toward the grated sides of the fire-pot, thereby increasing the combustion and illumination at that point. These objects I accomplish by covering the central opening in the grate with an elevated deflecting-plate of larger diameter than the said opening, by which arrangement the coal and cinders are prevented from falling into the ash-pit, and yet I maintain a large opening through which clinkers can be pushed into the ash-pan by a poker inserted over the grate for that purpose. To prevent the elevated deflecting-plate from burning out, I cover it with a cap of fire-brick, which soon becomes white-hot on the surface and operates with a beneficial effect upon the fire by causing the refuse cinders upon the grate to be more completely consumed and a greater illumination through the lower tier of mica windows. The position of the deflecting-plate is such that the air which enters through the central opening is forced outward laterally, which, in conjunction with the white-hot fire-brick cap, makes a bright body of coals to be constantly in contact with the sides of the fire-pot.

Figure 1 shows a section through the stove. Fig. 2 is a plan of the grate and ring K. Fig. 3 is a section through the grate at right angles to the section in Fig. 1.

The stove, in its general outline, as shown in Fig. 1, is similar to the reservoir parlor-stoves at present in common use. There is the coal-reservoir A, the upper tier of mica lights B, and the lower tier of mica lights in doors C, and the ash-pit E. This arrangement is in common use. I make my fire-pot in two sections, G H. The upper section, G, is conical in form and smallest at the bottom. It rests upon the lower section, H. The section H flares outward at the bottom, so as to bring the contents of the fire nearer to the illuminating windows C, and it is supported by four legs, *h*, resting upon the slanting ring K, which ring extends outward from the grate M to the shell or casing of the stove. This way of supporting the stove prevents the fire-pot falling if it should crack off with the heat; thereby increasing the durability of the stove. The lower edge of the section H is indented with teeth or fingers, which serve to retain the fire and give additional illumination. By this arrangement it will be seen that four openings are made between the grate and fire-pot, the utility of which will be explained farther on. The grate M is made to vibrate on a center pivot, N, carried upon a cross-bar, P, which cross-bar rests on lugs projecting downward from the ring K. The grate has a circular opening, R, at the center, which opening is covered by a button-shaped plate, S, elevated above the level of the grate, and rather larger in diameter than the opening. This plate S is pivoted by a central stem, T, entering a hole in the cross-bar V, which cross-bar forms a part of the grate itself. To prevent the burning away of this plate S, which is in the center of the fire, I cover it with a piece of soap-stone, W, or fire-clay, or a similar refractory material. The grate M is made in two parts, the front part, *m*¹, being hinged on bearings *m*², so that it may be lowered in order to dump the fire. The rod *m*⁴ projects out of the front of the stove, and by it the falling portion *m*¹ is held in its place, and the grate is vibrated by

it also, for the purpose of shaking down the ashes when it may be necessary.

The operation of these improvements is in this manner: The air, entering the ash-pit E, passes upward through the grate and opening R, and, impinging against the plate S, is deflected outward toward the fire-pot H, causing the fire to burn with greater brightness at the outside, thereby throwing more light and heat through the windows C. The ring K excludes the air from entering the fire between the periphery of the grate and the fire-pot, thereby causing the coals at the extreme edge of the grate to have a brighter glow and be more thoroughly consumed than when the air is admitted at that point. This ring also prevents the dust in the ash-pit passing out at the doors C when they are opened. To free the grate from clinkers the doors C are opened and a poker inserted between the fire-pot and grate and the clinkers pushed toward the center, where they fall through the opening R into the ash-pit.

I claim—

1. The fire-pot H, having projecting legs *h*, supported upon the ring K, as herein described.

2. The vibrating grate M, having a central opening, R, in combination with an elevated imperforate deflecting-plate, S, of larger diameter than the said opening, and arranged relatively to each other, as herein described.

3. The deflecting-plate S, covering the opening R, and having the fire-brick cap W, as and for the purpose herein described.

4. The combination of the grate M with the central deflecting-plate S, the ring K, a fire-pot, H, having its discharge end elevated above the grate, as herein described, and the illuminating-doors C, all operating in conjunction, as herein described.

SILAS H. LA RUE.

Witnesses:

PARK M'FARLAND, Jr.,
JOHN F. GRANT.