2 Sheets—Sheet 1.

J. SPEAR.

STOVE.

No. 190,635. Patented May 8, 1877.

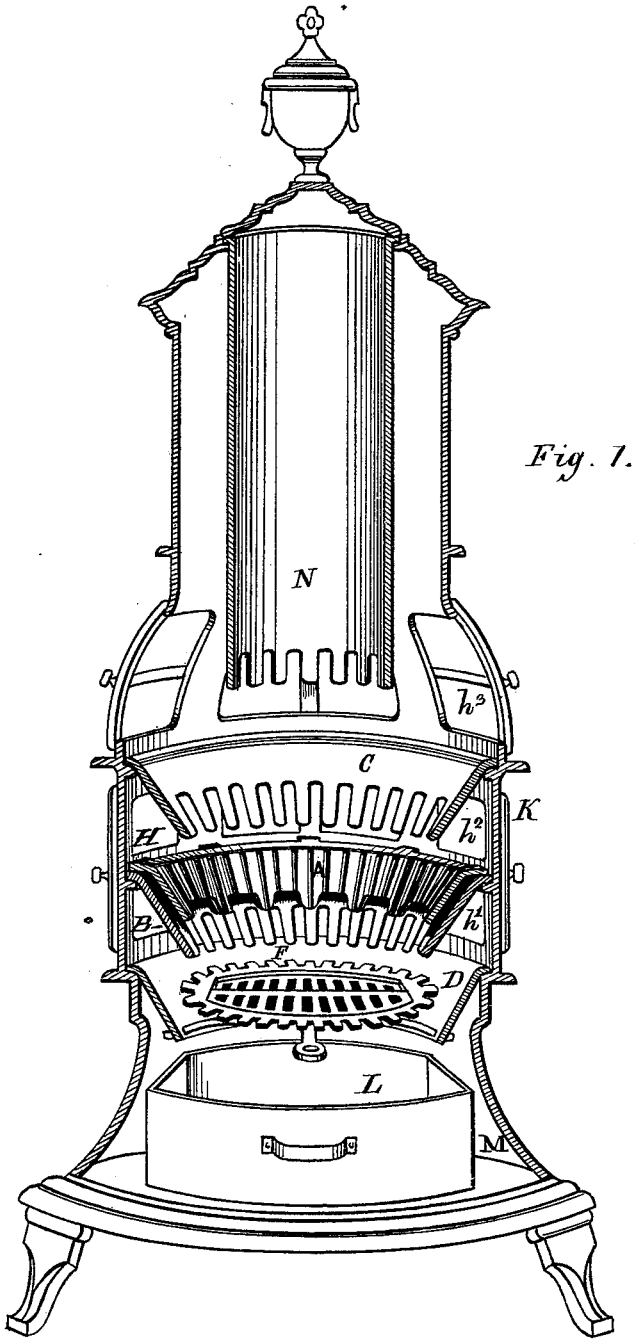

Fig. 1.

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2 Sheets—Sheet 2.

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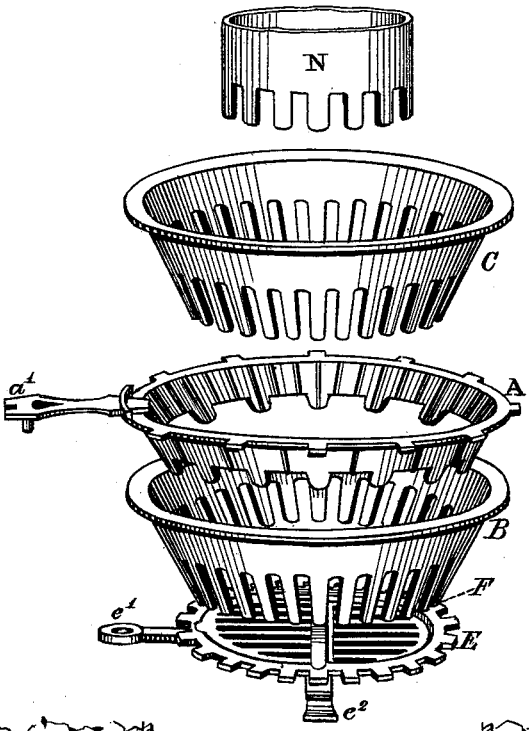


Fig. 2

Fig. 3.

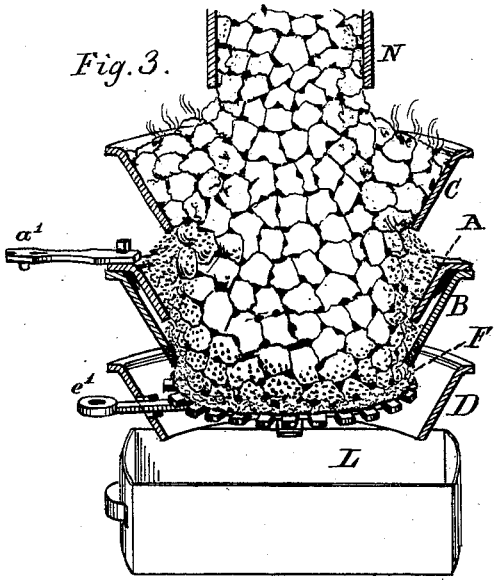
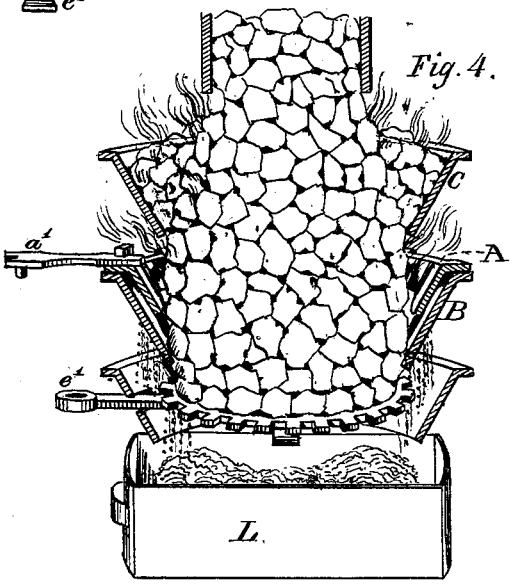


Fig. 4.



Witnesses

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UNITED STATES PATENT OFFICE.

JAMES SPEAR, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. **190,635**, dated May 8, 1877; application filed April 5, 1877.

To all whom it may concern:

Be it known that I, JAMES SPEAR, of 1016 Market street, Philadelphia, Pennsylvania, have invented a new and useful Improvement in Stoves and Heaters; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional view of the stove. Fig. 2 is a view of the fire-pots, showing the interior agitating-ring and other parts detached. Fig. 3 shows the state of the fire before the ring and grate are agitated, or before the fire is raked. Fig. 4 shows the state of the fire after both the ring and grate have been agitated.

My invention relates to improved means of removing ashes from around the inner surface of the fire-pot, and for raking or scraping ashes from the outer surface of a column of incandescent coals.

I will first describe the general features of the stove.

K is the wall of the stove; N, the magazine. C is the upper fire-pot; B, the lower fire-pot. These are flanged, and rest upon corresponding flanges projecting from the wall of the stove. A is the agitating-ring, fitted within the lower fire-pot, and operated by the handle a'.

D is a deflector for ashes; E, the grate, pivoted upon the cross-bar e^2, and operated by the handle e^1. F is the opening between the grate and fire-pot. L is the ash-drawer; M, the ash-pit; h^1, mica lights in doors opposite the opening between the grate and fire-pot; h^2, lights opposite the center of the fire, and h^3 lights above the upper fire-pot. H is the free space between the upper and lower fire-pots.

It is a well-known fact that a column of anthracite coals in a cylindrical stove will burn more rapidly upon the outer surface than within the interior of the fire, and will form ashes quicker on the outer and exposed surface of the coals and against the fire-pot than in the center of the fire.

To remove the ashes from around the inner surface of the fire-pot, and to afford all the illumination that can be obtained from a cylindrical coal-stove, I make the fire-chamber in two sections, C B, and separate the sections at the hottest part of the fire, where the ordinary fire-pot or cylinder usually cracks with the intense heat; and to prevent the coals from coming in contact with the wall of the stove, I make the two fire-pots conical in shape, invert them, and place the smaller end of the upper fire-pot over the larger end of the lower fire-pot, and cause the former to terminate in a plane above the lower fire-pot. When the coals are ignited, the fire at this point will be at a bright-red heat, and emit a band of bright light through the mica windows h^2, placed in the wall of the stove opposite the opening between the fire-pots.

It is evident that ashes, as they fall from the upper fire-pot, will lodge on the upper portion of the lower fire-pot, and bank up in the space between the two fire-pots, and effectually cover the incandescent mass at this point, and prevent the rays of light and heat from radiating through the windows. To remedy this evil I place a ring, A, within the lower fire-pot B, so arranged as that the same can be freely turned or rotated by means of a handle, a', which is inserted through an opening in the wall of the stove, and engages in a socket in the surface of the ring. This agitating-ring is made grooved or ribbed on its inner side, and has on its exterior a few ribs, to diminish the friction against the outer fire-pot. The lower edge is also fingered or pointed. By the agitation of this ring the ashes which have become banked up between the two fire-pots, and which obstruct the radiation of light and heat from the incandescent mass in the center, are removed and thrown down into the ash-chamber without disturbing the column of incandescent fuel. This is accomplished much more effectually than it could be done by the rotation of the lower fire-pot, for the reason that in my invention the lower fire-pot, being deeper than the ring, gives a supporting-surface to the centrally-burning mass, whereas, if the lower fire-pot without my improvement be agitated, the whole mass is disturbed and intermingled with the ashes. Again, by this plan of rotating the inner ring, I prevent the escape of air upward between the fire-pot and the wall of the stove.

It is evident this ring will work effectually in a single-fire-pot stove where the fuel is supplied by a magazine, also in stoves having a descending and an ascending flue.

I claim—

1. In a stove or heater, the agitating-ring A, in combination with a fire-pot projecting below the bottom of the ring.

2. The upper and lower fire-pots C and B and agitating-ring A, placed within the fire-pot B, for the purpose herein described.

3. The agitating-ring A within the fire-pot B, in combination with the free space H between the upper and lower fire-pots.

JAMES SPEAR.

Witnesses:

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