2 Sheets—Sheet 1.

RATHBONE & HAILES.

Coal Stove.

No. 51,085. Patented Nov. 21, 1865.

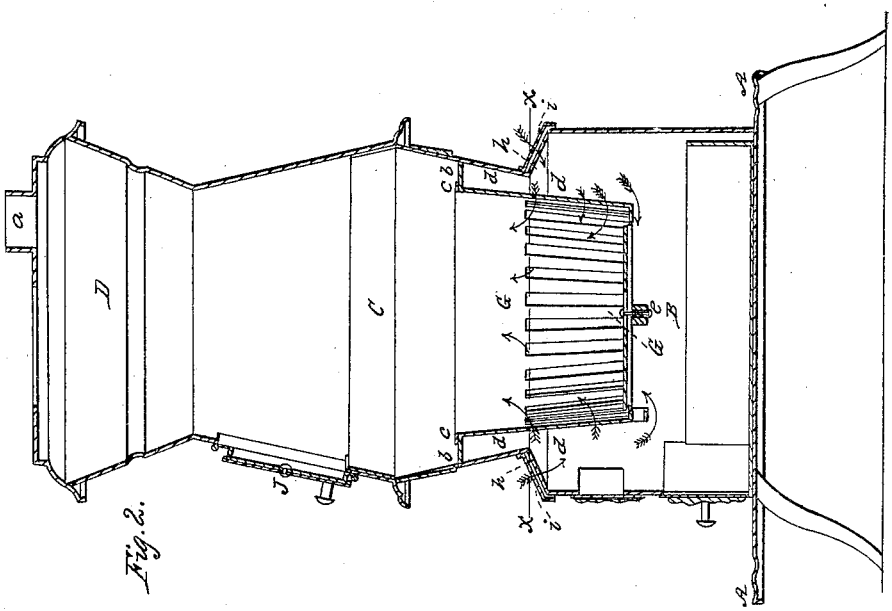

Fig. 2.

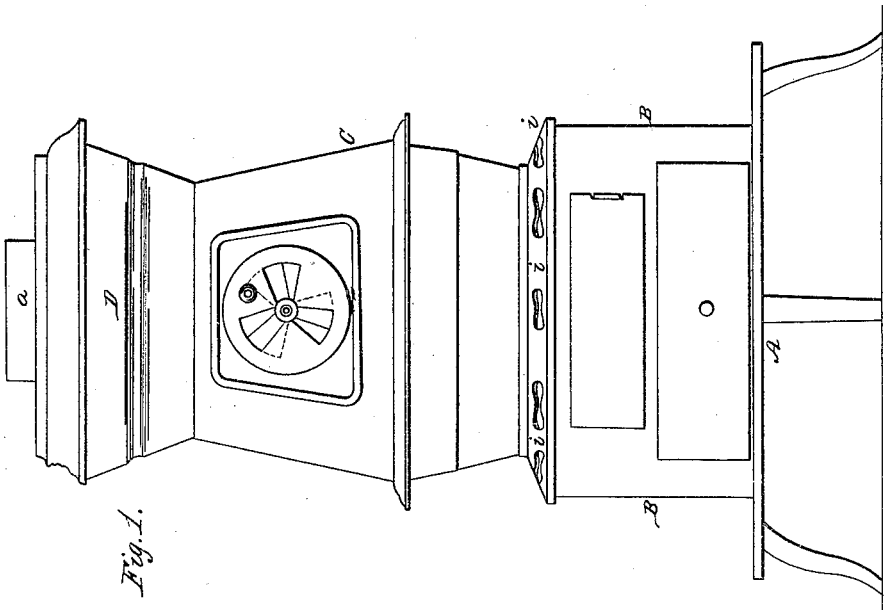

Fig. 1.

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Edw Schaefer

Inventors:
Lewis Rathbone
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by their Attys
Mason, Fenwick & Lawrence

2 Sheets—Sheet 2.

RATHBONE & HAILES.

Coal Stove.

No. 51,085. Patented Nov. 21, 1865.

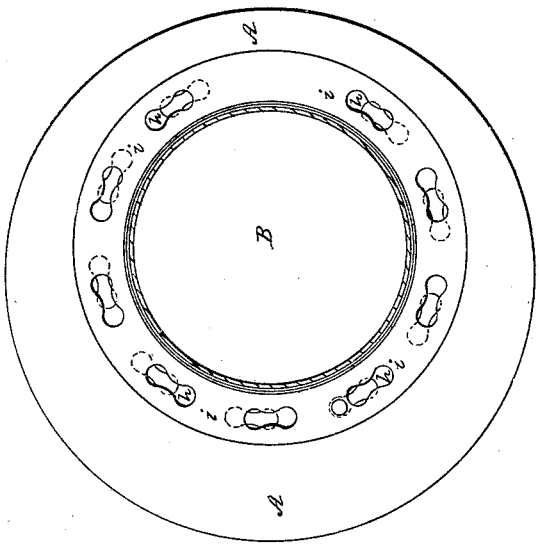

Fig. 3.

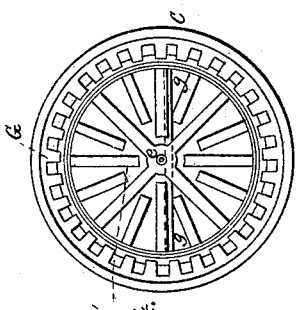

Fig. 4.

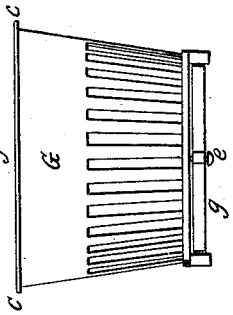

Fig. 5.

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UNITED STATES PATENT OFFICE.

LEWIS RATHBONE AND WILLIAM HAILES, OF ALBANY, NEW YORK.

IMPROVEMENT IN COAL-STOVES.

Specification forming part of Letters Patent No. **51,085**, dated November 21, 1865.

To all whom it may concern:

Be it known that we, LEWIS RATHBONE and WILLIAM HAILES, of Albany, county of Albany and State of New York, have invented a new and Improved Circular Stove; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is an elevation of the front of our improved stove. Fig. 2 is a diametrical section taken from the front to rear through the stove, showing our improvements. Fig. 3 is a section taken through the stove in the horizontal plane indicated by the red line *x x* in Fig. 2. Fig. 4 is a top view of the detachable fire-pot and grate. Fig. 5 is a side view of the same.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements on that class of stoves which are known as "cannon" or circular stoves, in consequence of their consisting of only one cylinder or cannon, without flues or separated fire-chambers. Such stoves have generally been constructed with a contracted outlet, and also with provision for admitting air above the fire. This we desire to obviate, as we have found that a much more perfect combustion can be maintained by enlarging the outlet for the smoke and admitting air through the sides of a suspended fire-pot at all points, and thus facilitating combustion by supplying oxygen to the burning coals beneath the surface of the fire-pot, as will be hereinafter described.

Another object of our invention is to construct an open circular fire-pot which can be applied to or removed from the stove at pleasure, with a grate in its bottom, said grate being so applied that it can be moved for shaking the ashes from the fire-pot when desired, as will be hereinafter described.

To enable others skilled in the art to understand our invention, we will describe its construction and operation.

In the accompanying drawings, A represents the bottom plate of the stove, which is made circular; and B represents the cylindrical ash-pit section, which is placed eccentrically upon the circular bottom plate, A, so that a comparatively wide space is left in front, as shown in Figs. 2 and 3, which is gradually contracted as it approaches the back of the stove on both sides thereof. Above this cylinder B is the body of the stove, that forms the fire-chamber C, which terminates at its upper end in a flaring outlet-chamber, D, through which the products of combustion which are unconsumed escape into the smoke-pipe *a*. Within the body or central portion, C, of this stove is an annular flange, *b*, the object of which is to support the fire-pot G by receiving upon it a flange, *c*, that is formed upon the upper edge of said pot, as shown in Fig. 2. The fire-pot is made of cast-iron of a flaring form and of such diameter as to leave a free space, *d*, all around it when arranged within the stove. It extends from the enlarged fire-chamber C down into the ash-chamber B, and it is made with vertical openings through its sides for the admission of air into the body of coal within it. The bottom of this fire-pot is an open grate, G′, which may be so applied that it can be moved about a central pin, *e*, or turned upon a horizontal bar; *g*, or both of these movements may be provided for.

It will thus be seen that the fire-pot and its grate are united together, so that both can be removed from the stove together. By thus connecting the grate and fire-pot together and arranging them within the stove so that they are supported or suspended by means above mentioned, they can be removed very readily from the stove when it is necessary to renew them.

At the junction of the body of the stove with the ash-pit section B is a ledge, *h*, extending entirely around the top of said section, as shown in Fig. 3. This ledge is perforated at regular intervals, and it is covered by means of a movable ring-plate, *i*, which is also perforated in a manner corresponding to the perforations through the ledges. This ring-plate *i*, being provided with a knob or handle, constitutes an annular register for regulating the admission of air into the section B of the stove below the point of suspension of the fire-pot, as indicated by the arrows in Fig. 2.

The flanges *b* and *c* effectually close the up-

per portion of the space *d* surrounding the fire-pot, so that no air can pass at this point. The air which enters the smoke-chamber above the fire-pot must either be admitted through the register J in the feed-door or it must pass through the fire-pot. Our object is to maintain such an intense heat in the fire-pot by the free supply of oxygen to the incandescent coal therein all around this pot that there will be little or no smoke formed after the fire is fully started. In this way we obtain a more perfect combustion and are enabled to burn soft coal and obtain the greatest heating effects therefrom.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. Arranging a perforated fire-pot with a grate-bottom within a circular stove, having provision for the admission of air below the point of suspension of said fire-pot, substantially as described.

2. The combination of an annular horizontal register with a suspended fire-pot which has perforated sides, substantially as described.

LEWIS RATHBONE.
WILLIAM HAILES.

Witnesses:
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WM. J. DUNN.