

2 Sheets
Sheet 1.

S. B. Sexton. Base-Burning Stove.

N^o 75585
Fig. 1.

Patented Mar. 17, 1868.
Fig. 2.

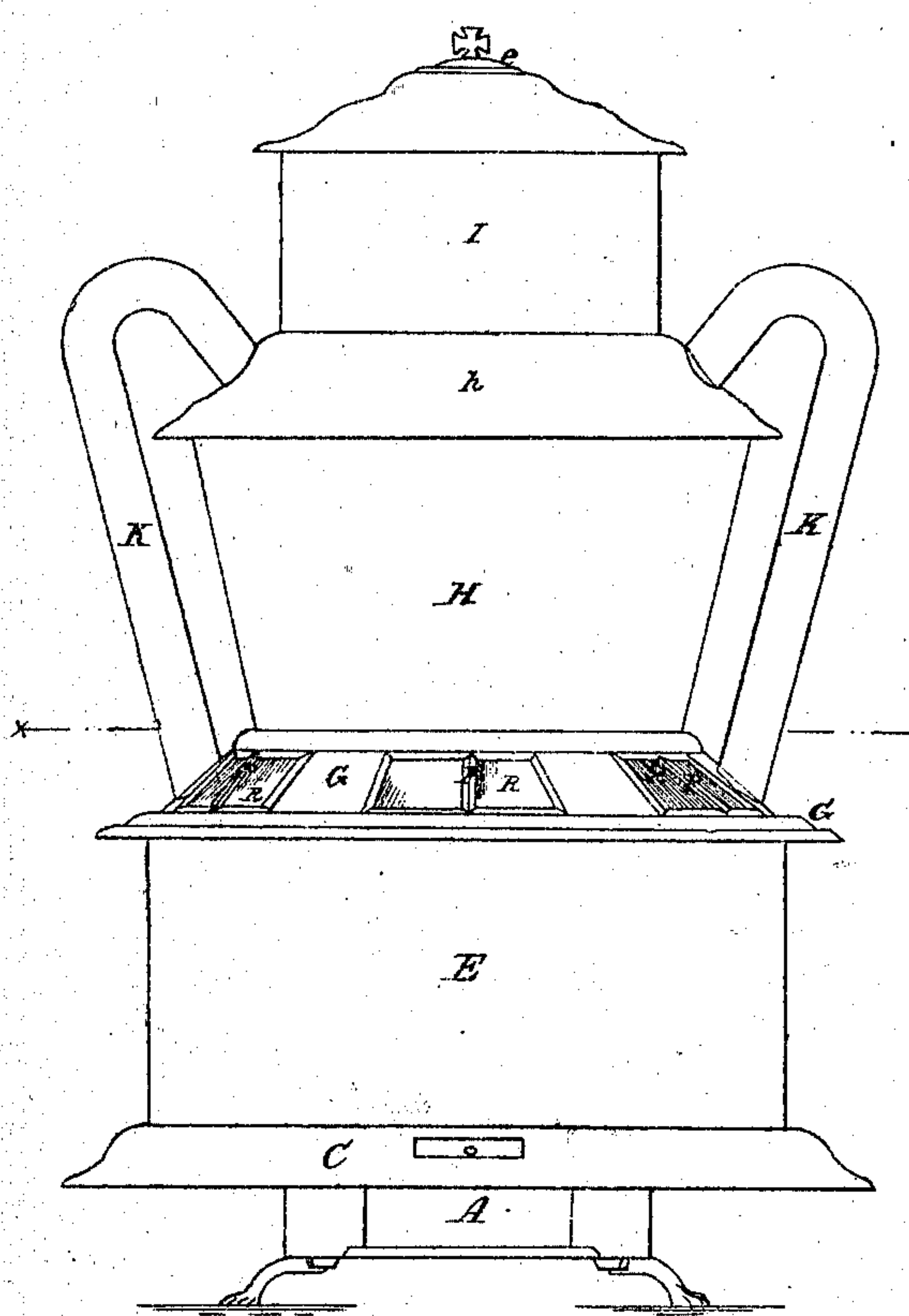
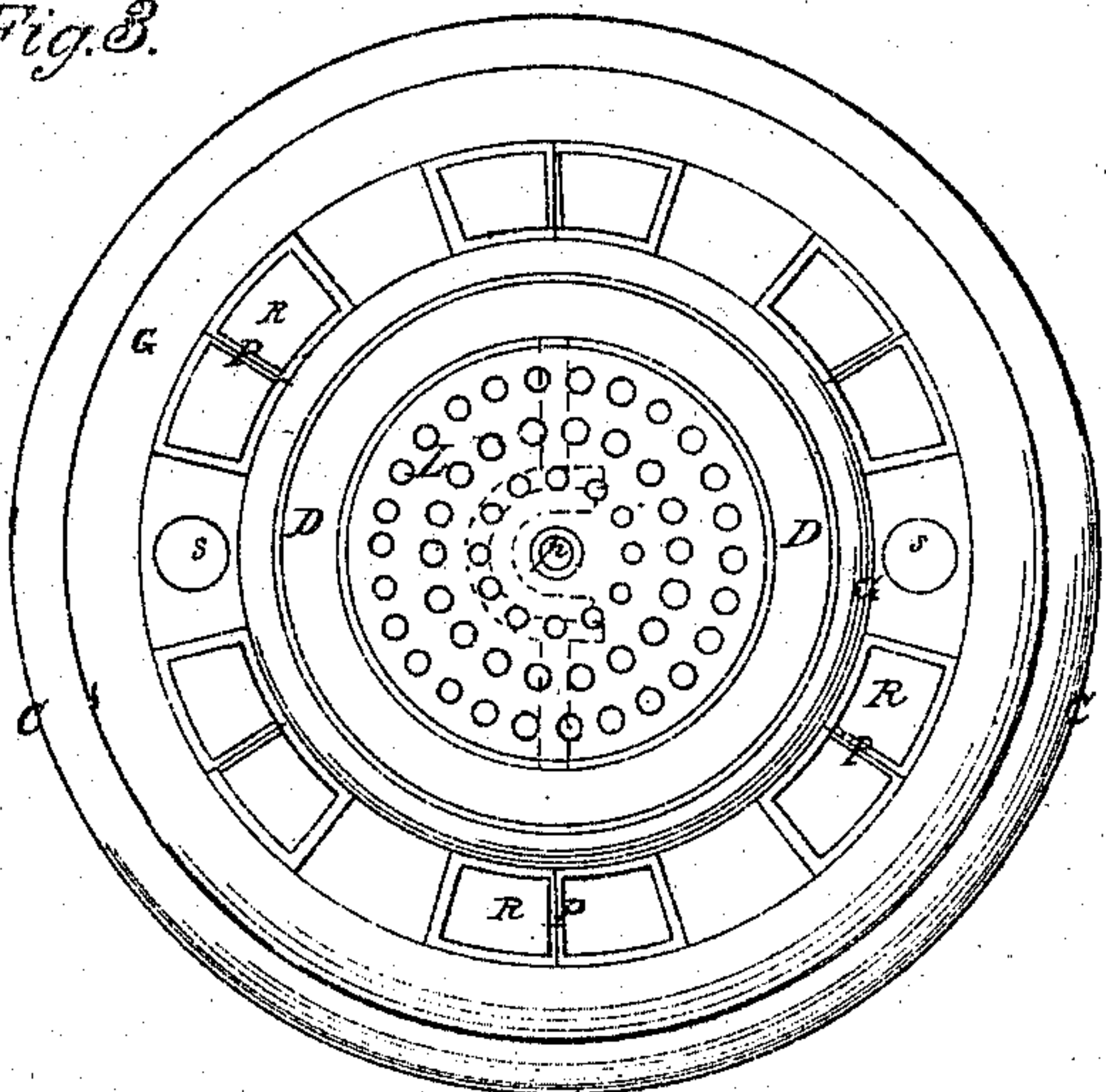


Fig. 3.



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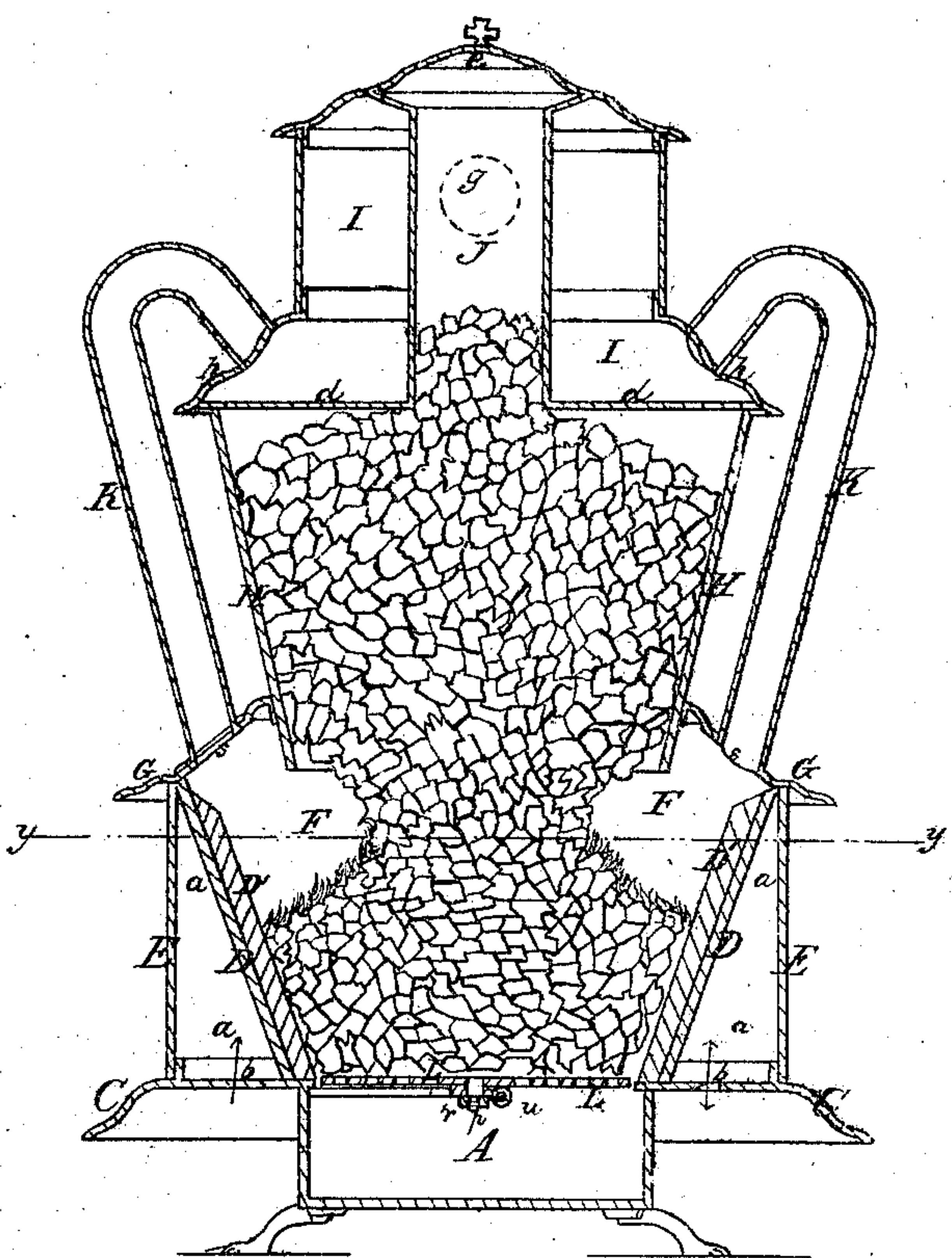
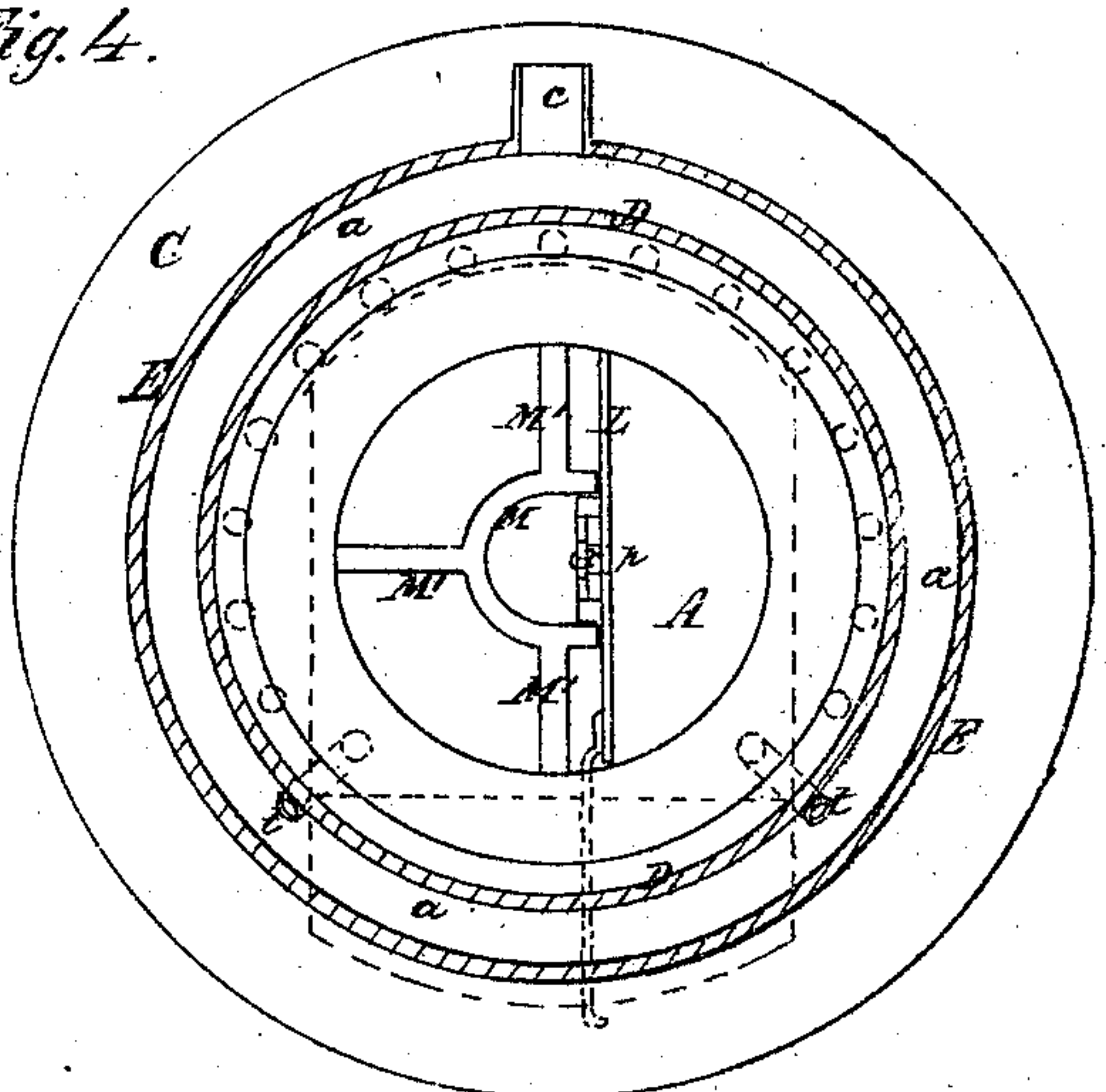


Fig. 4.



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2 Sheets
Sheet 2

S. B. Sexton.

Base-Burning Stove.

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Fig. 5.

Patented Mar. 17, 1868.

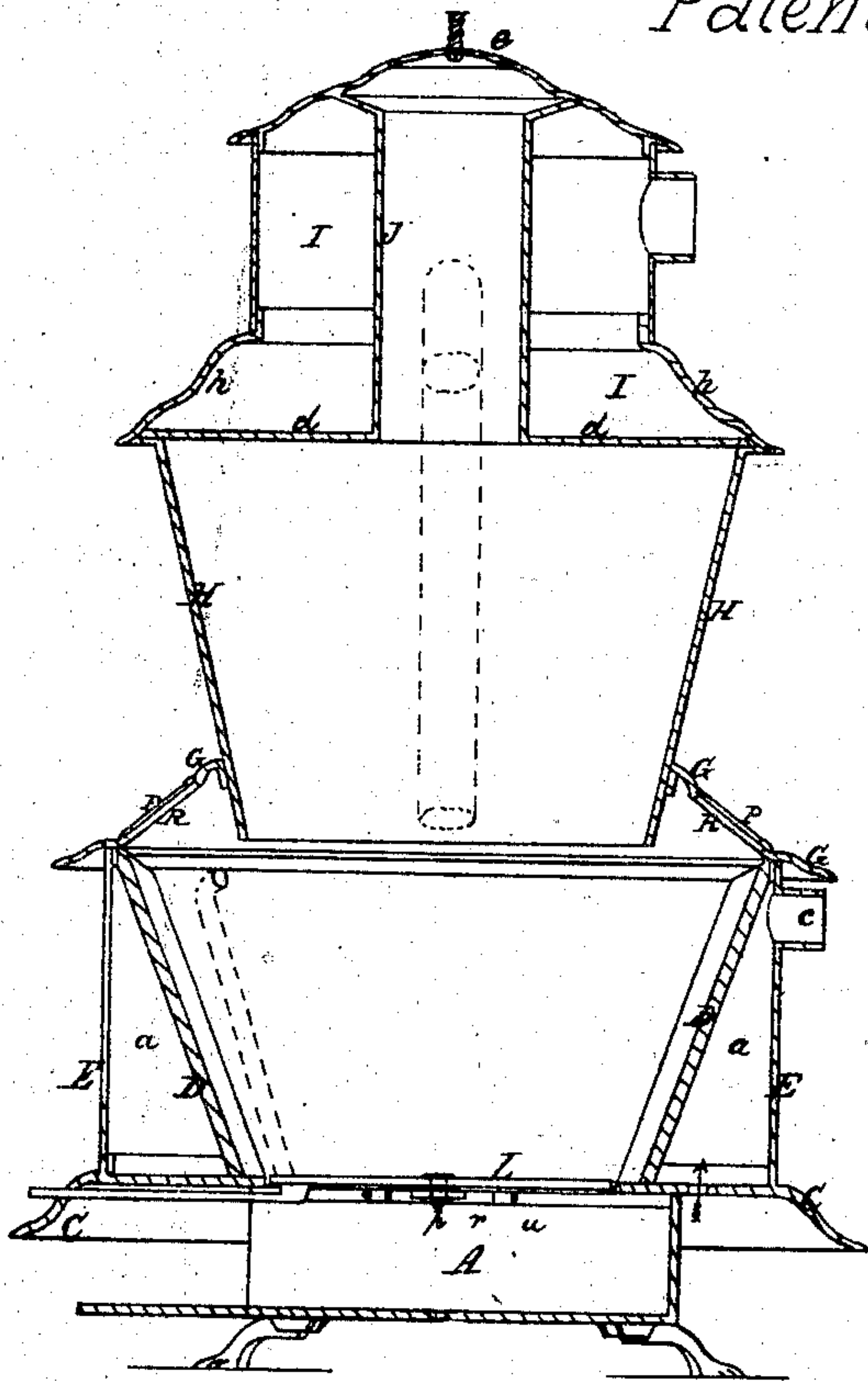


Fig. 6.

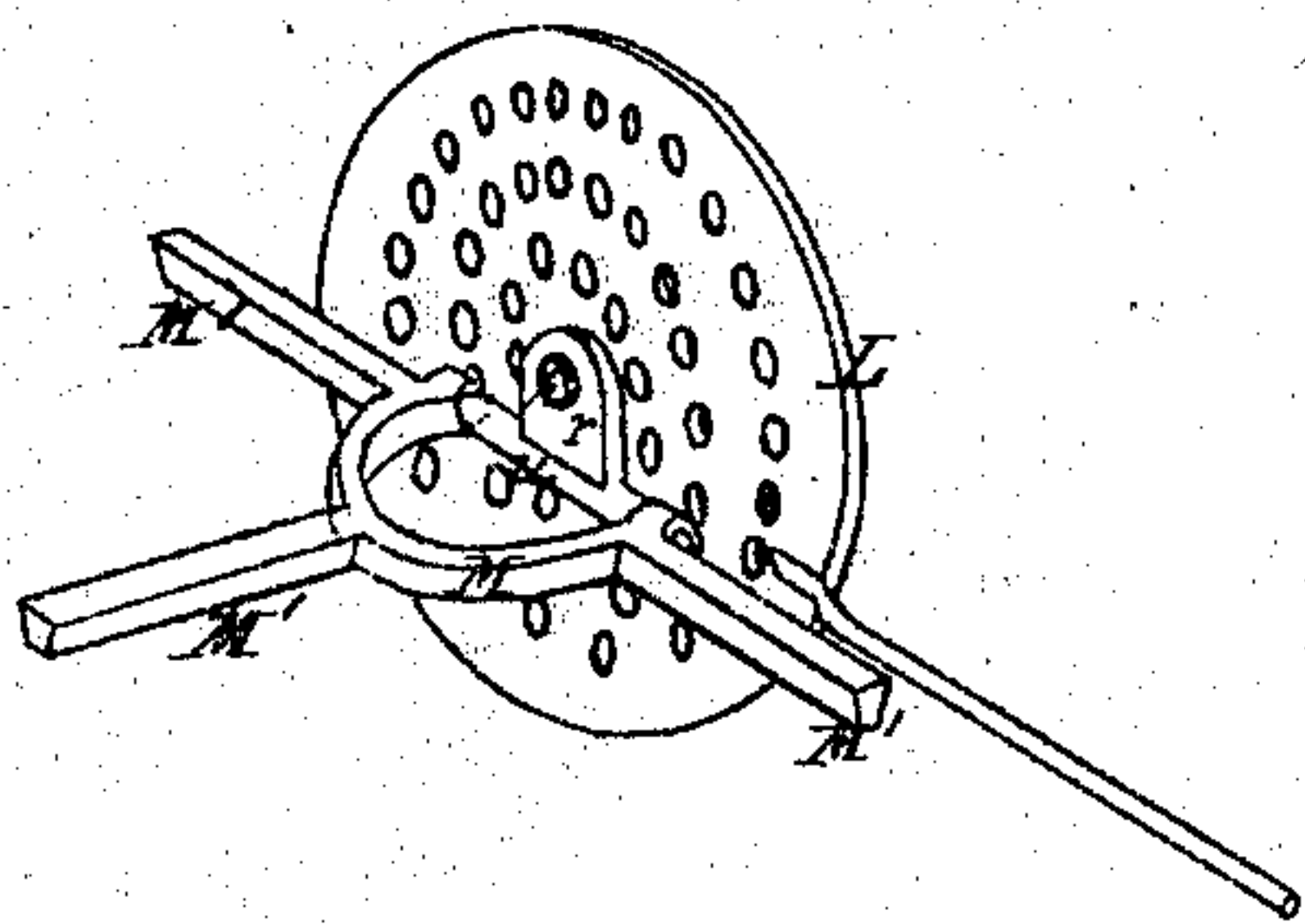
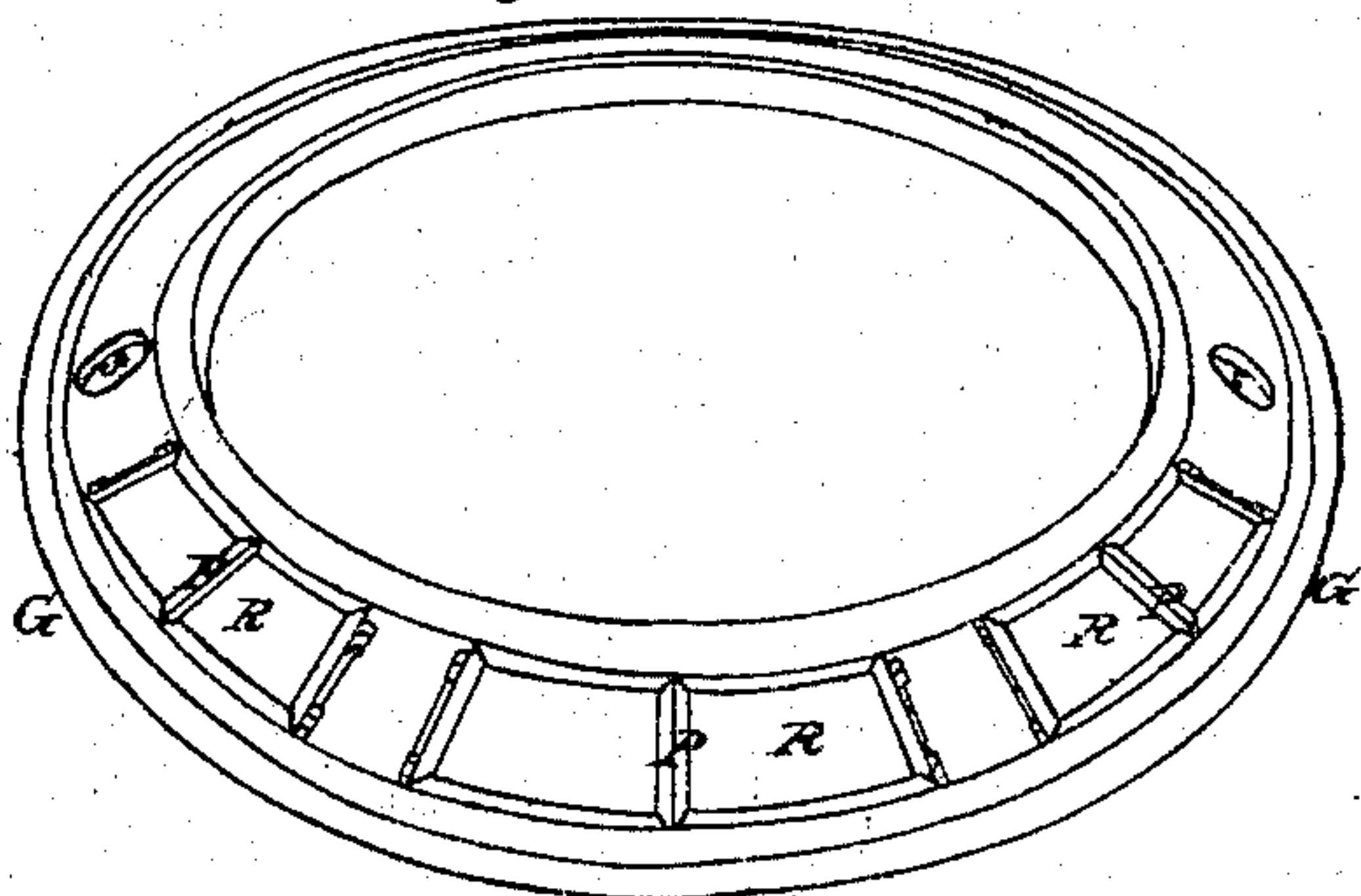


Fig. 7.



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United States Patent Office.

S. B. SEXTON, OF BALTIMORE, MARYLAND.

Letters Patent No. 75,585, dated March 17, 1868.

IMPROVEMENT IN BASE-BURNING STOVES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, S. B. SEXTON, of Baltimore, in the county of Baltimore, and State of Maryland, have invented certain new and useful Improvements in Base-Burning Stoves; and I 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, sheet 1, is a front elevation of the improved stove.

Figure 2, sheet 1, is a vertical central section, taken laterally through the stove.

Figure 3, sheet 1, is a top view of all that portion of the stove below the coal-supply chamber.

Figure 4, sheet 1, is a section, taken in the horizontal plane indicated by red line *y* in fig. 2.

Figure 5, sheet 2, is a section, taken in a vertical longitudinal plane through the centre of the stove.

Figure 6, sheet 2, shows the novel manner of hinging and supporting the grate.

Figure 7 is a perspective view of the illuminating-ring.

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

This invention relates in part to certain novel improvements on base-burning stoves, wherein the external wall of the coal-supply reservoir is not encased, but exposed, so as to form the outer wall of the intermediate section of the stove. It also relates in part to certain improvements on base-burners, wherein provision is made for conducting the products of combustion rising in the fire-chamber from this chamber to an upper heat-radiating chamber or section, arranged above the coal-supply reservoir, and communicating with the main draught-flue or chimney; and it also relates to an improvement on base-burners which are adapted for exposing the light of the fire through certain illuminating-windows or doors arranged about the fire-chambers of the stoves.

The object of the first part of my invention is to improve coal-supply reservoirs, which are arranged over fire-pots for supplying fuel thereto, by constructing them with upwardly-flaring sides, so that soft or bituminous coal, which swells or expands considerably when heated, shall not be very liable to clog the lower end of said reservoir, but shall allow of a free discharge of the coal, commensurate with the consumption thereof, as will be hereinafter described.

Another object of my invention is to have illuminating-doors or windows applied to a downwardly-flaring ring, which ring is interposed between a fire-chamber and coal-supply reservoir, and so arranged as to expose through its windows the light of the fire in the fire-pot, as will be hereinafter described.

Another object of my invention is to provide passages for the escape of the products of combustion arising in the fire-pot from the fire-pot or chamber to a chamber which is arranged over the coal-supply reservoir, and which is so constructed as to occupy a horizontal space no greater in area than that of the top of said reservoir, as will be hereinafter described. It also provides for combining in a base-burning stove the following elements, to wit, a chamber which is adapted for heating air and supplying such air whithersoever it may be required; a coal-supply reservoir, having doors or illuminating-windows at its base; a heat-radiating chamber over the coal-reservoir, and means for conducting the products of combustion from the fire-chamber into said radiating-chamber, as will be hereinafter described. It also provides for conducting air and flying ash-dust from the ash-box below the grate directly into the fire-chamber or pot at or near the top thereof, as will be hereinafter described. It also provides for supporting a grate, which can be both tilted and oscillated, in such manner that a very wide base-support is afforded it, which will prevent it from being liable to sag or become warped by the heat, as will be hereinafter described.

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

A represents the ash-chamber or box, C a base-ring, which is supported thereon, and D is an upwardly-flaring fire-pot, which is supported upon the base-ring C, and surrounded by a jacket, E. This jacket E and fire-pot D come together at their upper edges, and form an annular air-heating chamber, *a*, into which air is introduced through the perforations *b b*, which are made through the base-ring C outside of the ash-box, as shown in figs. 2 and 5. The air which is heated in chamber *a* may be conducted off through the exit *c* into other apartments, or wheresoever may be desired. The air which is to be heated in chamber *a* may be taken from outside of the room, or from the room in which the stove is arranged.

The fire-pot D is of the form of the frustum of a cone, and it may be lined inside with fire-brick D' if desired.

Its upper part presents a very wide chamber, F, in which combustion takes place most freely. On top of this upwardly-flaring fire-pot D is a flaring ring, G, which is also of the form of the frustum of a cone, with its base resting upon and suitably secured to the fire-pot D or jacket E, in a manner substantially as shown in the drawings. This ring is adapted to receive through it and to serve as a support for a coal-supply reservoir, H, the lower end of which may extend down as far as desired into the combustion-space F. The fire-pot or jacket, or both of these parts, are in this manner connected to and made to serve as the support for the coal-reservoir. This reservoir flares upward, and is capped by a chamber, I, the base, *d*, of which is of the same horizontal area as the top of said reservoir. A passage, J, leads through chamber I into the reservoir H, and serves as a means through which the latter can be supplied with coal. The upper end of this passage J is closed by the removable cap *e*, which prevents the escape of gas into the room. If desirable, one or more exit-passages leading from reservoir H into chamber I may be provided, for the purpose of allowing any gas which may accumulate in the reservoir above the coal therein to escape into the draught-flue. The pipes K K are used as the means for conducting the products of combustion from the combustion-chamber, beneath the reservoir H and ring G, into the chamber I above the reservoir, from which chamber I, the products escape into a main flue or chimney through the exit *g*, shown in fig. 5. The upper portions of the pipes or radiators K K are curved, so that they may be more readily cleaned of soot, by means of a wire and brush passed up through them, than they could be if these upper portions were made angular. I do not, however, confine myself to the circular form of the elbows, as other forms may be adopted. These radiating-pipes K proceed from the ring G and enter the ring *h* of the enlarged base-section of chamber I, as clearly shown in the drawings, figs. 1 and 2. The ring G presents an inclined surface; that is to say, it inclines from its point of attachment to the reservoir H to its point of support upon the upper edge of the fire-pot D, or outer casing E; thus it partially caps the fire-chamber. Through this ring, openings R are made, at suitable distances apart, either entirely or partly around it, which openings are covered by means of doors, applied so as to slide or to open on hinges, or some of the doors may be applied so as not to open at all. These doors I provide with mica, so that the light of the fire in the fire-chamber can be seen. The doors or windows thus arranged not only present an "illuminated" surface, but they also afford access to the interior of the fire-chamber or pot, for feeding the fire, and for stirring and breaking up lumps of coal therein; they also afford free access to the lower end of the coal-reservoir H for releasing coal that may have lodged therein. The ring G, shown in fig. 7, is provided with three illuminated windows or doors P P P, but they may extend entirely around it, if desired. The openings S S shown through this ring are for receiving the lower ends of the pipes or radiators K K.

By reference to figs. 4 and 5 of the drawings, it will be seen that I have pipes *t t* leading from the front part of the ash-pit A, through the annular air-heating chamber *a*, and into the fire-chamber or combustion-space F. These pipes or flues *t t* are designed for supplying air to the fire in the said space F, so as to render combustion very complete therein, also to carry off the light ash-dust rising in the ash-box during the movements of the grate.

The bottom of fire-pot D is provided with a grate, L, which is so supported that it may receive a horizontal oscillating motion about a central pin, *p*, or it may be tilted, as shown in figs. 4 and 6. The grate L may be perforated in any suitable manner. Its pintle *p* pivots it to a hinge-leaf, *r*, which is pivoted, by means of a horizontal pin, *u*, to the ends of a semicircular bar, M, that has three radial arms M' projecting from it. By thus attaching the grate to its supports, the weight is taken from the centre and divided on each side thereof, so as to present a wide base-support, with a short pivot, *u*, which is not liable to be warped by heat and weight upon it.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The flaring or funnel-shaped chamber H, constituting the magazine and intermediate outer wall of the stove, in combination with the contracted passage J, substantially as and for the purpose described.
2. The arrangement of the air-heating chamber E, applied around the fire-pot D, between the base and top of said pot, with a coal-reservoir, which constitutes the single exposed outer intermediate wall of the stove, and is united to the fire-pot by an inclined illumination-ring, G, substantially as and for the purpose described.
3. An upwardly-flaring coal-reservoir, exposed as described, provided with a supporting-ring, G, having door or window-openings through it, and arranged over a flaring fire-chamber or pot, substantially as described.

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Witnesses:

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L. A. HOWSER, Jr.