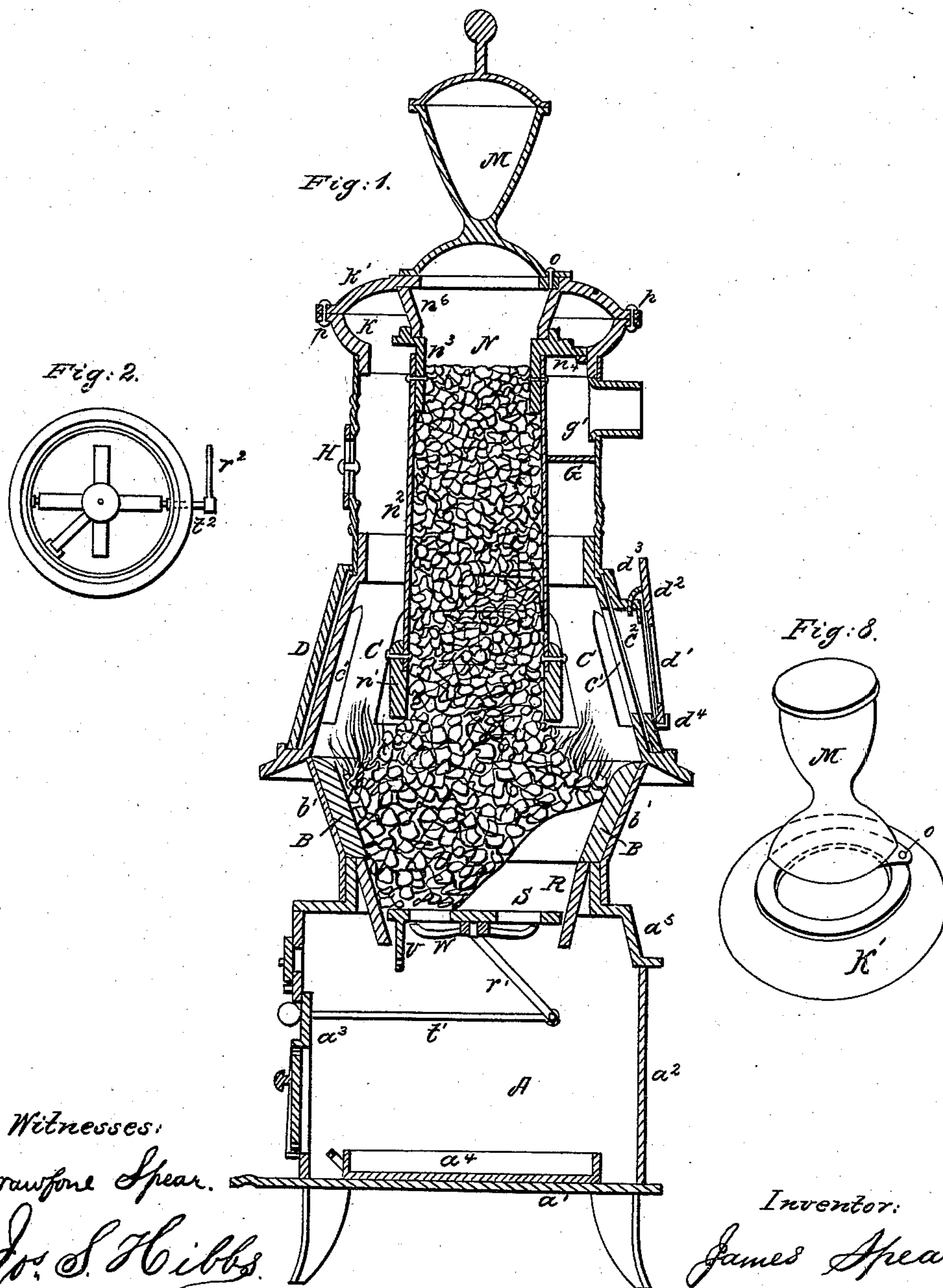


J. SPEAR.

Base Burning Stove.

No. 79,696.

Patented July 7, 1868.



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Fig. 2.

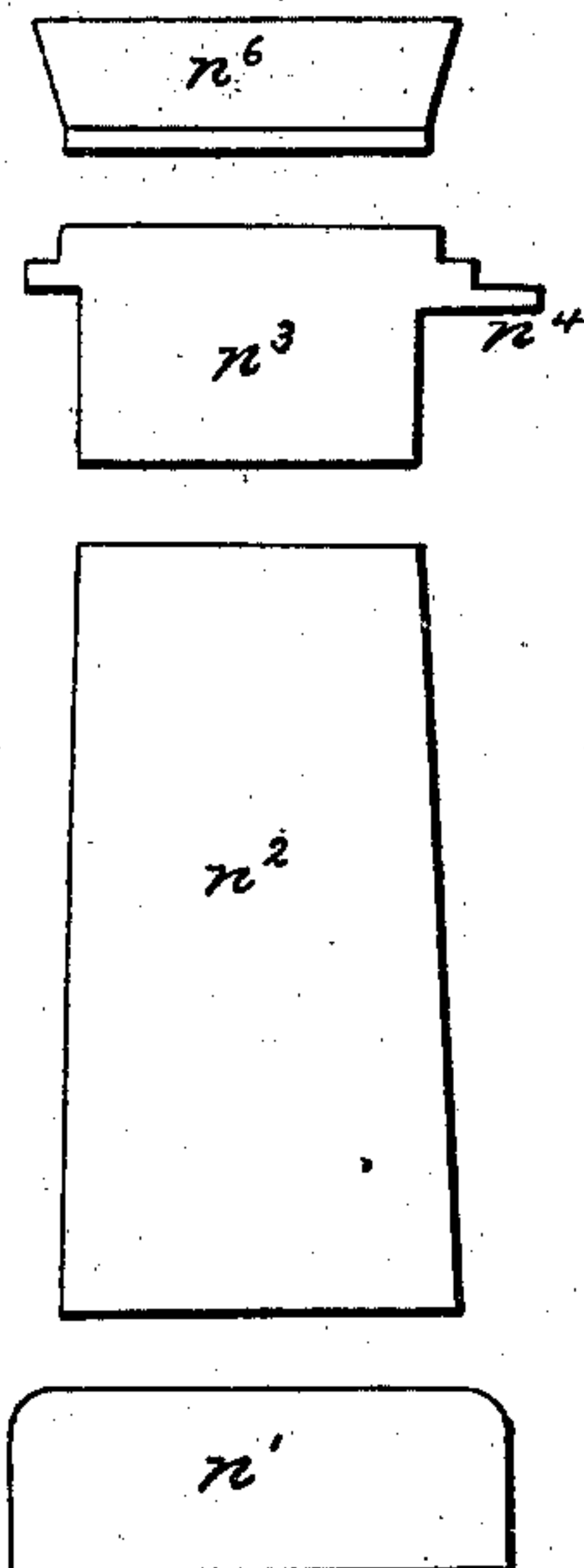


Fig. 7.

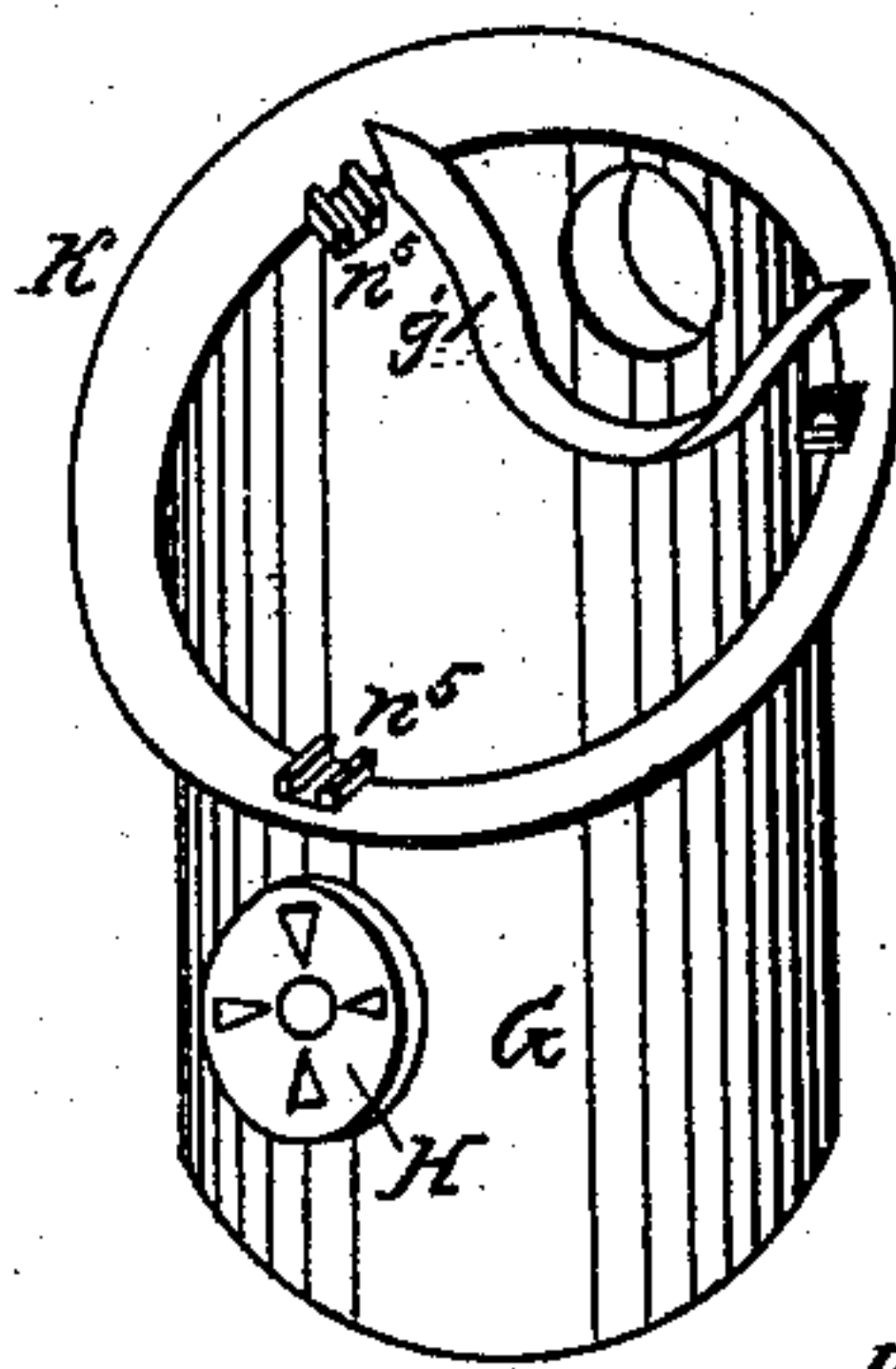


Fig. 9.

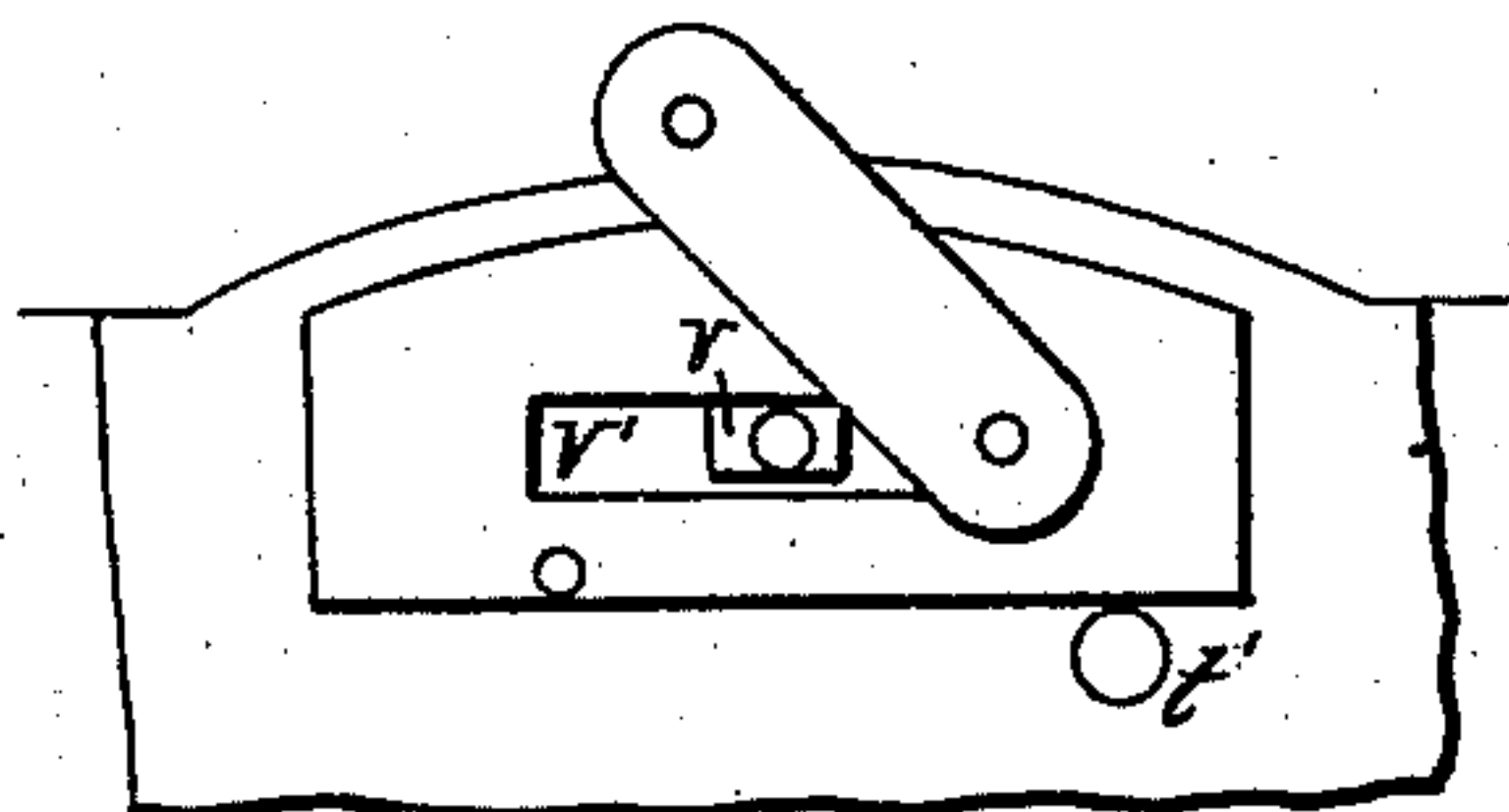


Fig. 3.

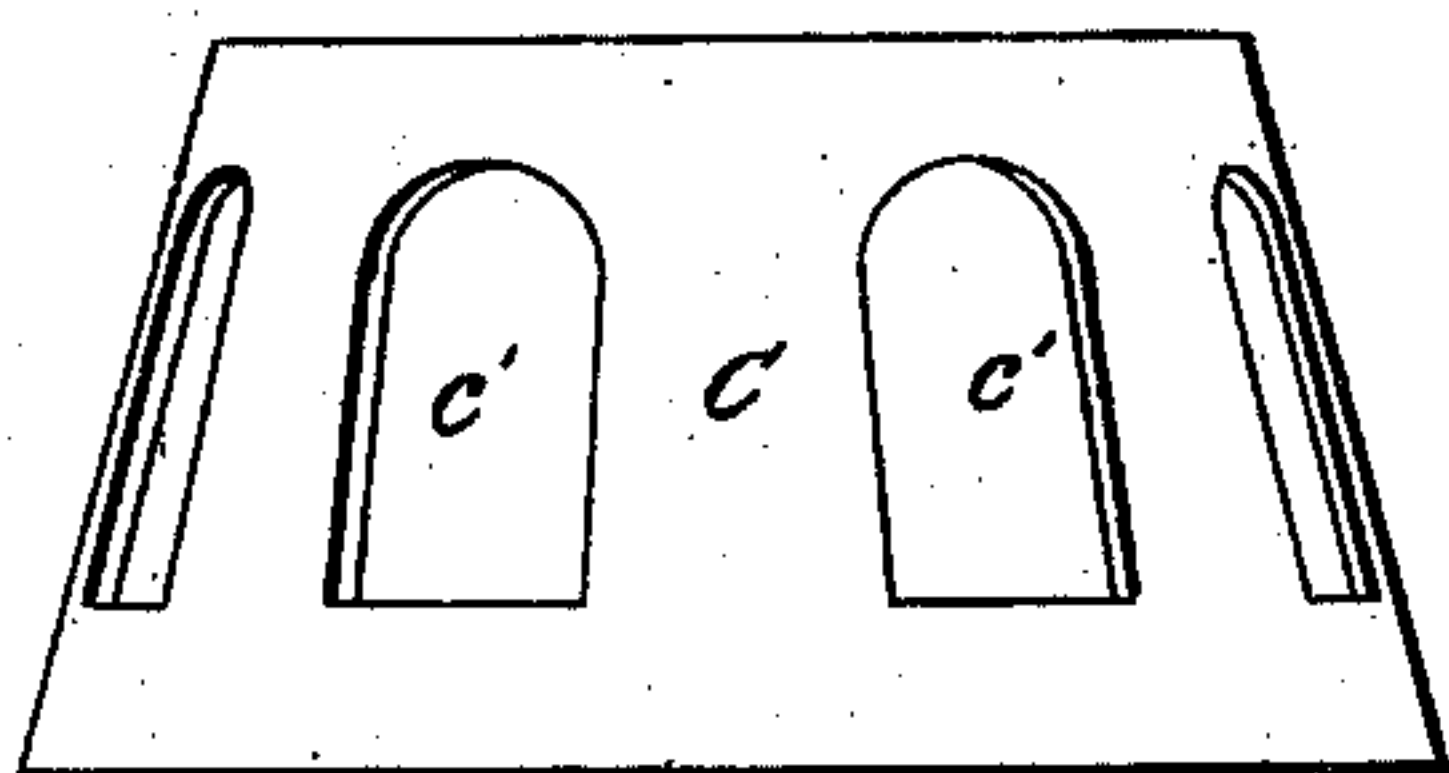


Fig. 4.

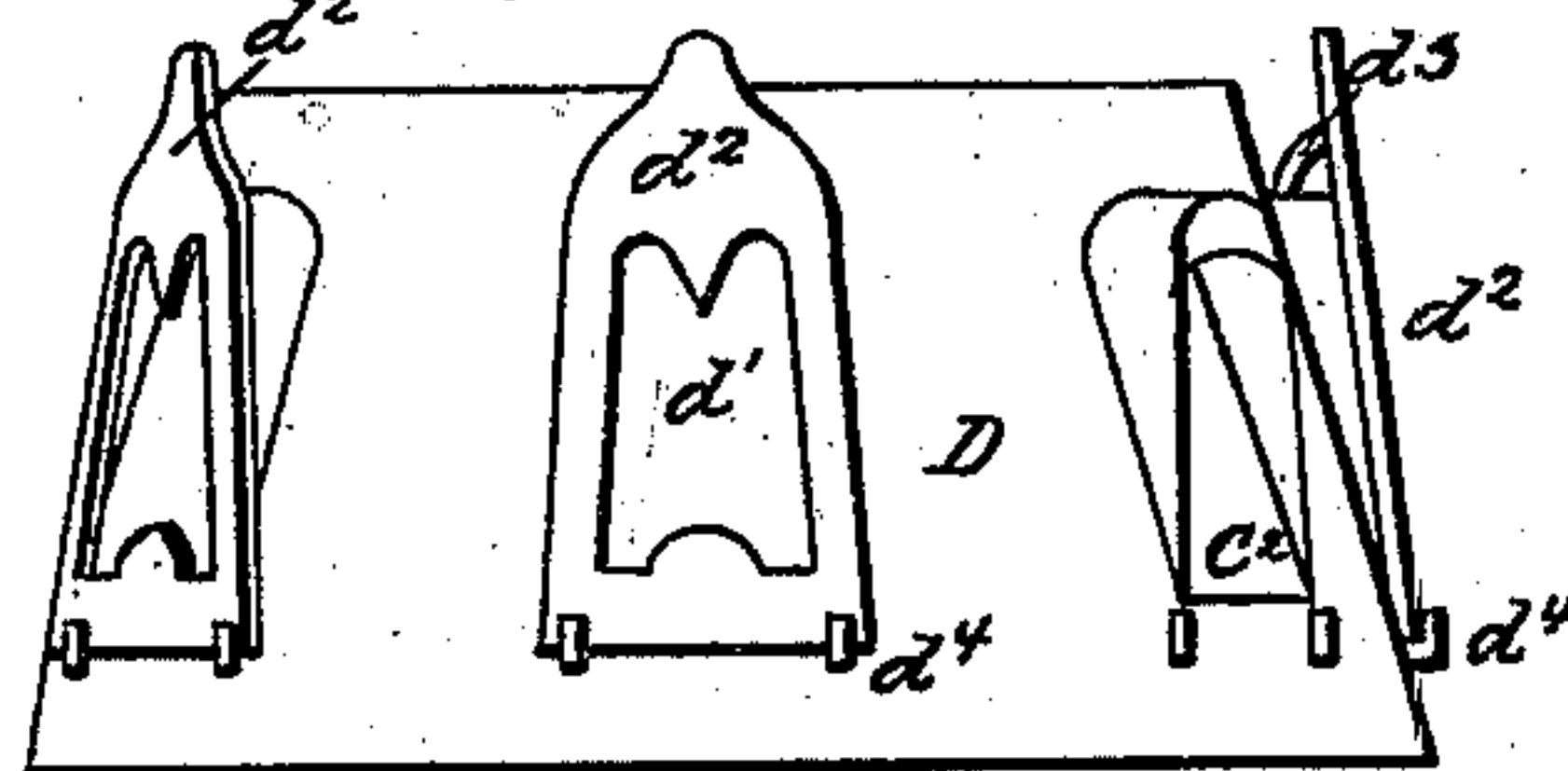


Fig. 6.

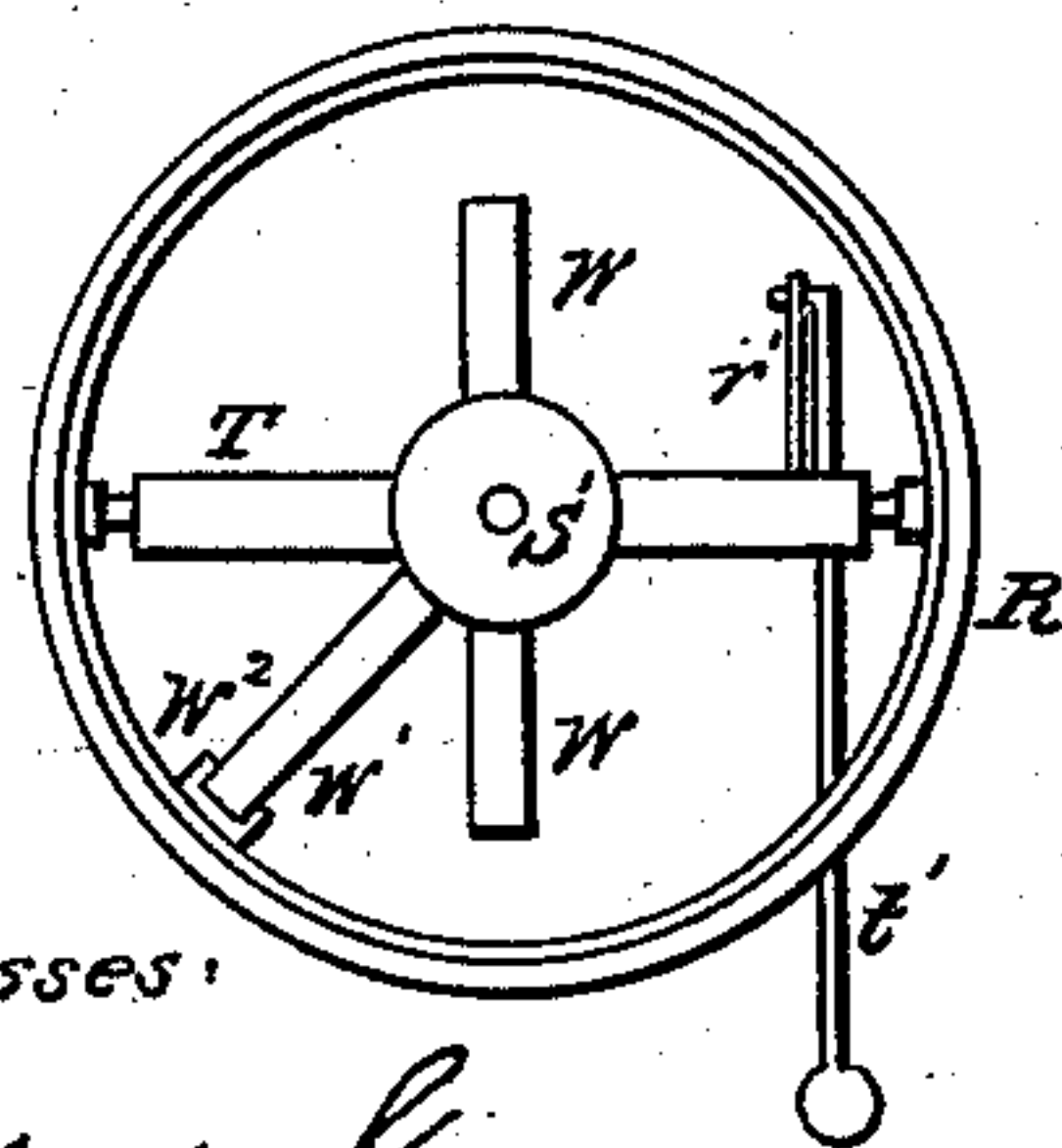


Fig. 5.

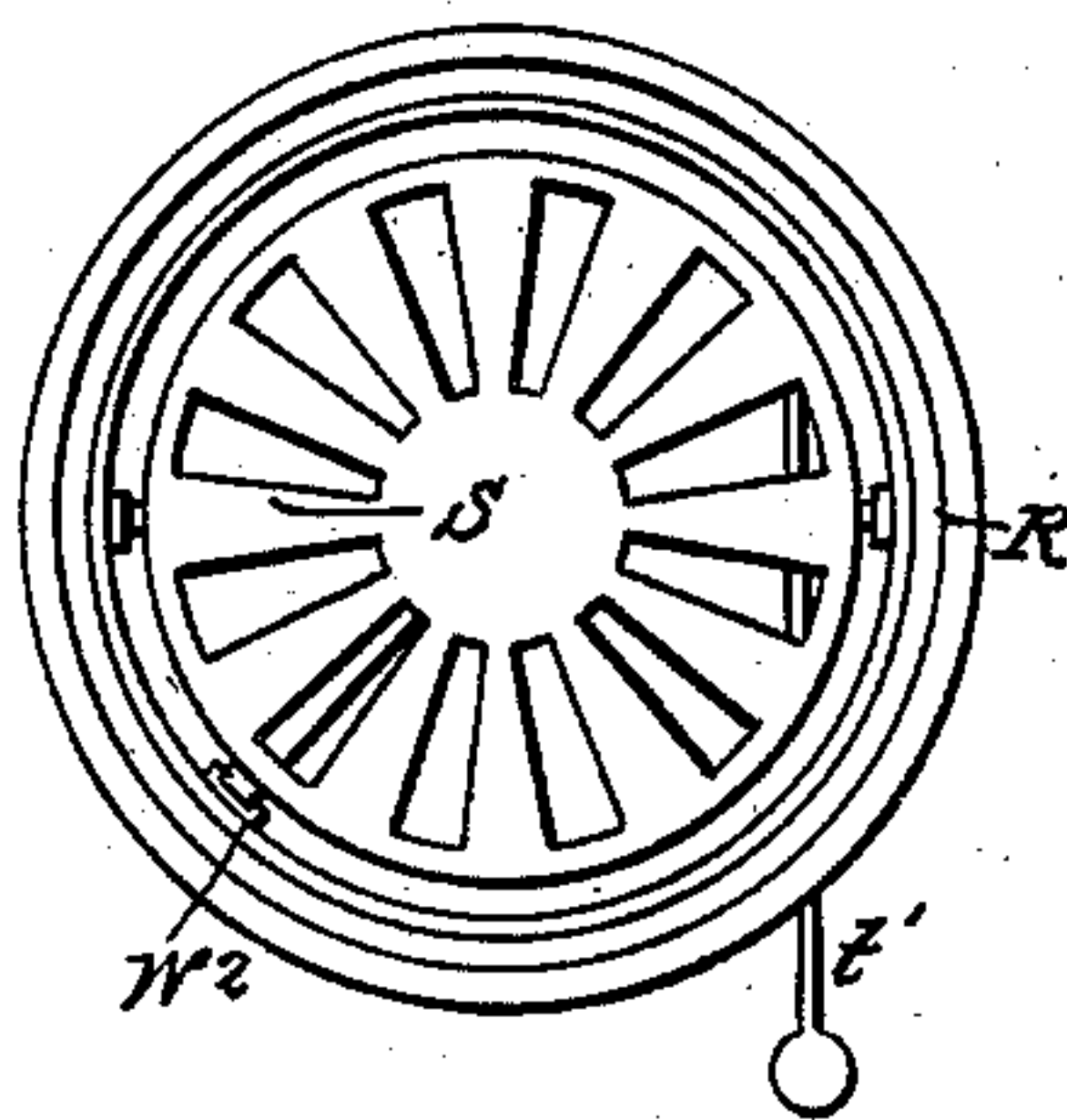
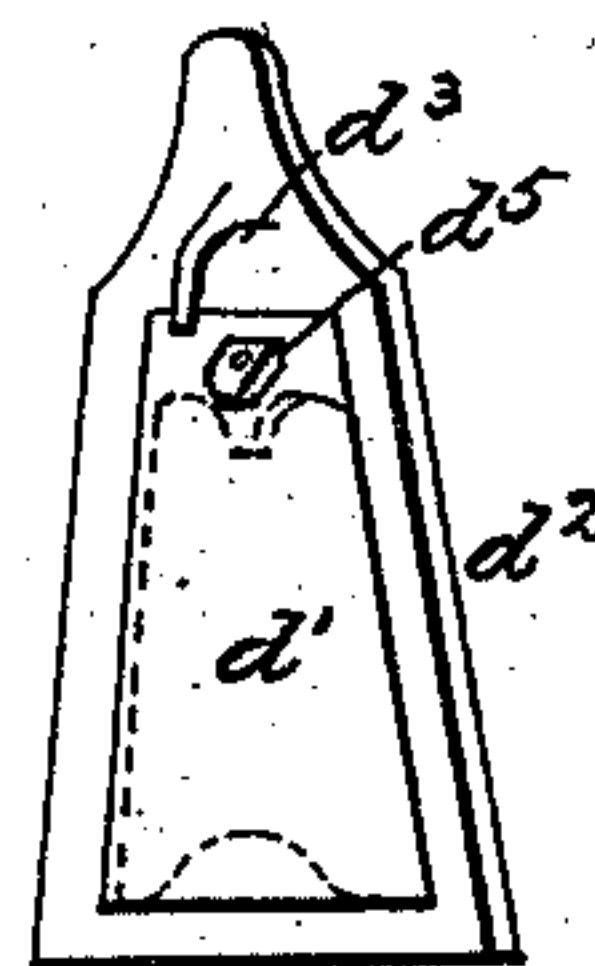


Fig. 10.



Witnesses:

Crawford Spear.

Jos. S. Hibbs.

Inventor:

James Spear.

UNITED STATES PATENT OFFICE.

JAMES SPEAR, OF PHILADELPHIA, PENNSYLVANIA.

IMPROVEMENT IN BASE-BURNING STOVES.

Specification forming part of Letters Patent No. 79,696, dated July 7, 1868.

To all whom it may concern:

Be it known that I, JAMES SPEAR, of 1116 Market street, in the city and county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Stoves; and I do hereby declare the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in a new mode of dumping a revolving or shaking grate, so that no dust can escape from the stove while performing the operation of dumping or raking; and also in the manner of constructing the reservoir and attaching it to the crown-top of the stove; and also in the construction and general combination and arrangement of the several parts of the stove.

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

Figure 1 is a general section through the stove. Fig. 2 is a view of the reservoir in detached parts before it is put together. Fig. 3 is a view of the interior and stationary illuminating section. Fig. 4 is a view of the exterior and revolving section with mica windows attached. Fig. 5 is a plan of the revolving and dumping grate. Fig. 6 is a plan of the pivot-bar with dumping lever and rod attached. Fig. 7 is the upper section of the stove, showing inlet at register for air, and guard round the chimney-pipe. Fig. 8 is a view of the hinged urn. Fig. 9 is a front view of the slot in the base closed by a door, through which the grate can be shaken. Fig. 10 is a perspective view of the mica windows. Fig. 11 is another mode of dumping the grate on the same principle.

I form the base A square. The bottom plate, a^1 , is of cast-iron, the sides a^2 of the base are of sheet-iron, with a cast-iron door-frame, a^3 , in which is fitted the door opening to the ash-drawer a^4 , and also the slot v' for raking the grate. The top part of the base a^5 is of cast-iron. The outer casing, b' , or cylinder of the fire-pot is round, and is composed of sheet-iron lined with fire-brick B. This fire-pot fits in close contact with the case b' . The cylinder b' is in the shape of an inverted cone, the smaller end resting on the cast-iron base-plate

a^5 . Above the cylinder or fire-pot I place a round cast-iron section, C, slightly conical in form, with openings c^1 for the exit of light, and supplied with a movable exterior casing, D, of cast-iron, having similar openings c^2 , upon which openings are fitted the cast-iron frames d^2 with mica windows d^1 . These frames are secured to the casing D by the projecting clips d^4 at the bottom, and at the top by the hooks d^3 , which are cast upon the frame, and become a permanent part of it, and by this plan I dispense with the turn-buckle in common use, and save time and labor in construction. The mica is fastened to the window-frame d^2 by staples d^5 , Fig. 10, cast on the frame, which are passed through the mica, and secured by a pin. This outer case, D, with its windows is capable of being revolved or registered, so that the mica windows can be closed while the fire is being kindled, and opened after it is ignited, thus preventing the smoking of the mica, which is such a common occurrence in all other stoves. Above these mica windows I place a section of sheet-iron, G, supplied with a register, H, in front, for the purpose of cooling the fire; and above this sheet-iron section I place a crown-top, K, of cast-iron, supplied with an urn, M, hinged thereto, as shown, Fig. 8. A guard, g' , is placed round the entrance to the chimney, so as to throw the heat more round the upper portion of the stove. Within the stove I place a reservoir, N, for a supply of fuel to the fire-pot B. This reservoir is made in three sections, joined together. The lower end, n^1 , near the fire, is of cast-iron, the middle section, n^2 , is of sheet-iron, and the upper section, n^3 , is of cast-iron. This upper section is cast with three arms or lugs, n^4 , which rest on three projections, n^5 , (see Fig. 7,) cast on the lower part of the crown-top, and is supported by them. Above this section is a small cast-iron funnel, n^6 , that connects in close contact with the outer top, K. By this mode of constructing the reservoir it can be made much lighter for transportation, and at the same time be as durable as a cast-iron reservoir. The outer top, K', is secured to the under section, K, by the bolts p , and by simply taking off the top plate, K', the reservoir can be easily removed. The urn M is hinged to the outer top by screw or pivot o , and its base forms a cover to the reservoir

N, thus completing the top of the stove, the whole combined making a very symmetrical appearance. The grate S revolves on a center-pin, s' , inserted through the center of the cross or pivot bar T. A tongue, V, (see Fig. 9,) cast on, projects downward in front, into which a handle is inserted through the slot v' , whenever it is necessary to give the grate the shaking reciprocating motion common to revolving grates. The pivot-bar T is pivoted at each end in the grate-wall R. This bar is made with a lever, r' , cast on it, and jointed at the end to the rod t^1 , which rod passes through a close-fitting hole in the base A. This pivot-bar also has two arms, w , one on each side, which serve to steady the grate in its horizontal position, and also act as bearings against the under side of the grate in the dumping process, thus releasing the center-pin s' from strain. The pivot-bar T is held in position by an arm, w^1 , cast on the said bar, and extending nearly to the grate-rest R, and resting on the lug w^2 , cast upon the grate-rest. By this device it is only necessary to pull the rod t^1 , and the grate S can be dumped without any opening being made in the stove for the escape of dust. By extending one of the pivots t^2 through the base, and attaching a lever, r^2 , outside, as shown, Fig. 11, the same object is accomplished, as I do with the interior rod and lever. In either case the grate s can be dumped without opening the base of the stove.

I do not simply claim dumping a grate by

means of a lever attached to the journal of an ordinary grate; nor do I claim simply a lever attached to a grate inside of a stove, and operated by a rod extending through the grate; nor do I claim an internal reservoir, or the revolving and illuminating sections C D, except when constructed and combined as described.

What I claim as my invention, and wish to secure by Letters Patent, is—

1. The revolving grate S, in combination with the dumping apparatus, consisting of the pivot-bar T, arms W W, lever r , rod t^1 , so constructed that it can be dumped without opening the stove.

2. The reservoir N, constructed with a lower cast-iron ring, n^1 , sheet-iron section n^2 , upper cast-iron rings, n^3 n^6 , so connected as to form a reservoir, for the purpose shown and described.

3. The register H, for the purpose of admitting air between the outer section, G, and reservoir N, in combination with the revolving windows d^2 , arranged and operating substantially as shown and described.

4. The combination and arrangement of the revolving and dumping grate S with the fire-pot B, revolving windows d^2 , reservoir N, register H, and swinging urn M, substantially as described.

JAMES SPEAR.

Witnesses:

CRAWFORD SPEAR,
JOS. S. HIBBS.