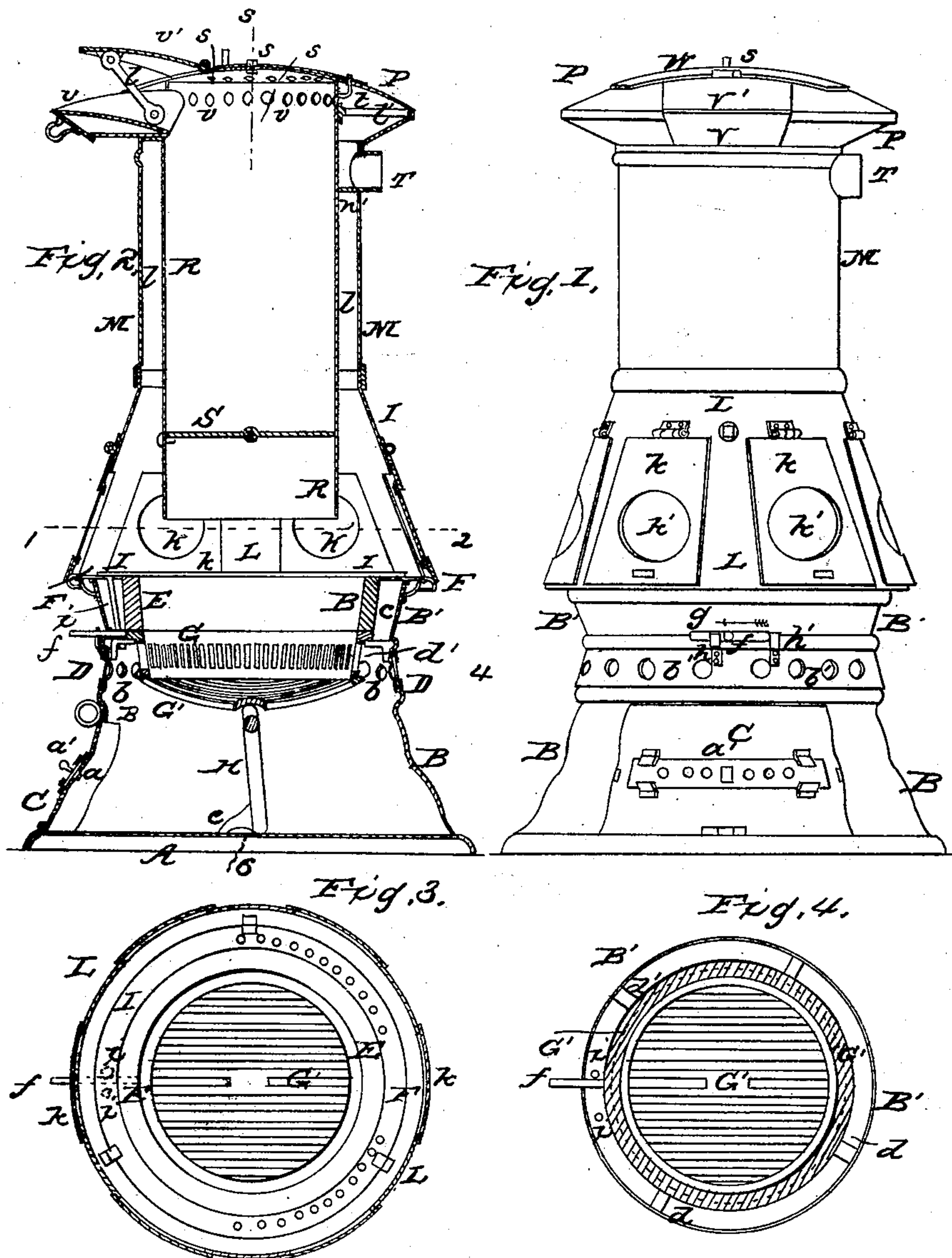


H. C. MARCH.
Base Burning Stove.

No. 90,860.

Patented June 1, 1869.



Witnesses:
Wm. A. Steel
John Parker

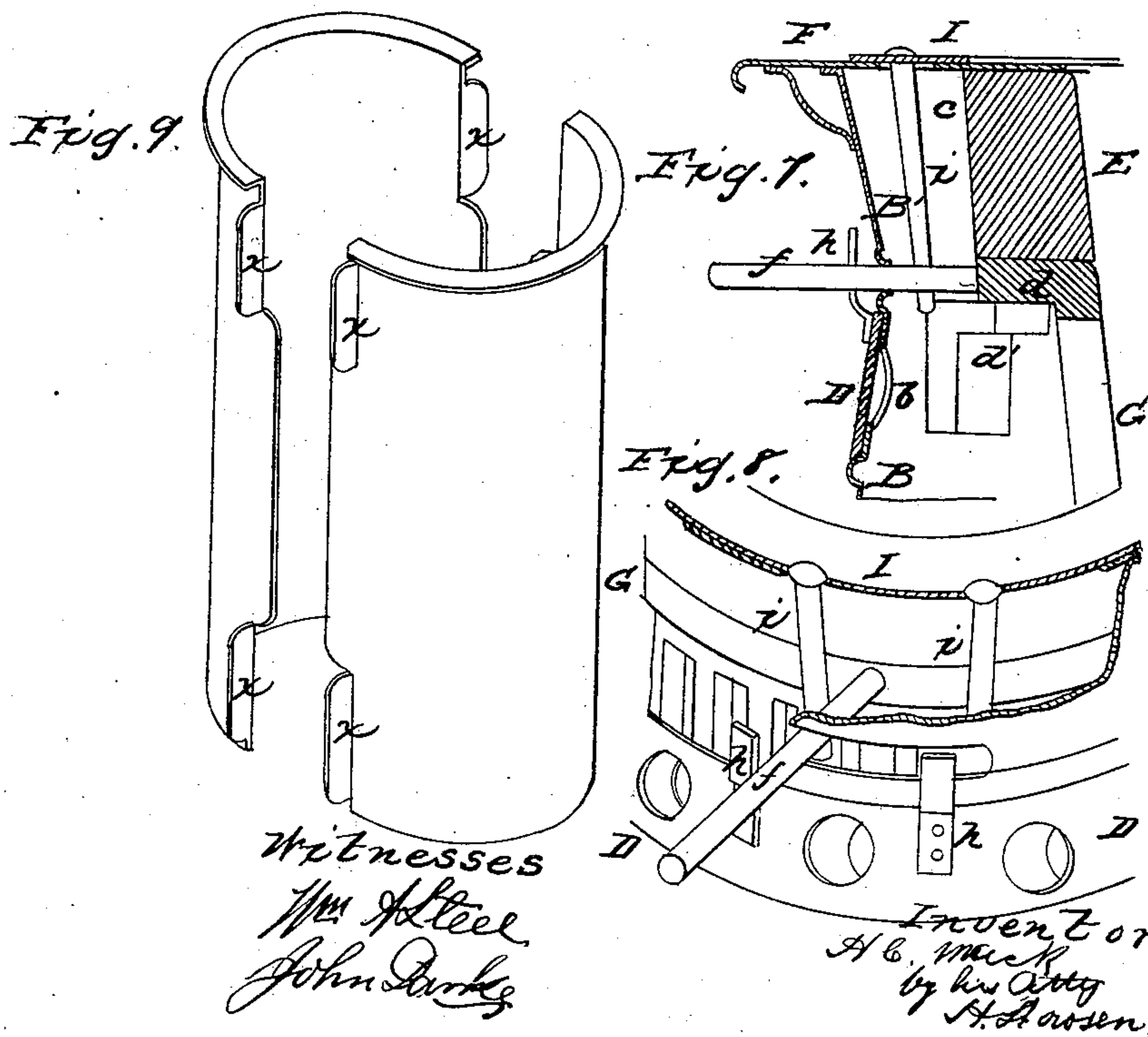
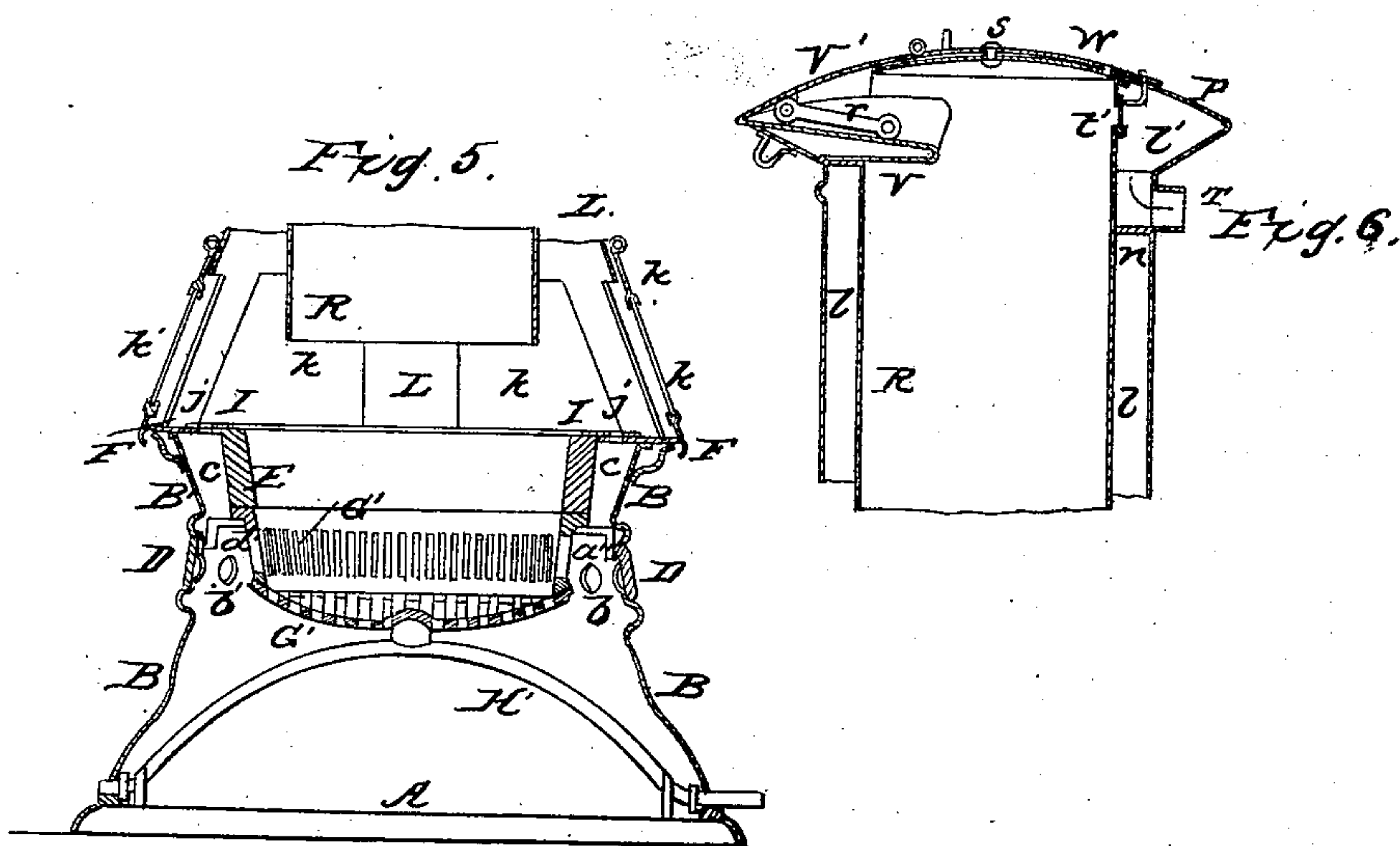
Inventor:
H. C. March
by his atty
H. Rowson.

H. C. MARCH.
Base Burning Stove.

2 Sheets—Sheet 2.

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Witnesses
Wm. Steele
John D. King

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UNITED STATES PATENT OFFICE.

HENRY C. MARCH, OF LIMERICK STATION, PENNSYLVANIA.

IMPROVEMENT IN BASE-BURNING STOVES.

Specification forming part of Letters Patent No. 90,860, dated June 1, 1869.

To all whom it may concern :

Be it known that I, HENRY C. MARCH, of Limerick Station, county of Montgomery, State of Pennsylvania, have invented an Improved Heating-Stove; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention consists of certain improvements, fully described hereafter, in what are known as base-burning stoves, the improvements having been designed with the view of accomplishing a more perfect combustion, and of obtaining a more intense and uniform heat, with less expenditure of fuel than is required for other stoves of this class.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe its construction and operation, reference being had to the accompanying drawing, which forms a part of this specification, and in which—

Figure 1, Sheet 1, is a front view of my improved heating-stove; Fig. 2, a vertical section of the same; Fig. 3, a sectional plan view on the line 1 2, Fig. 2; Fig. 4, a sectional plan view on the line 3 4, Fig. 2; Fig. 5, Sheet 2, a vertical action of the lower part of the stove on the line 5 6, Fig. 2; Fig. 6, a sectional view of the upper part of the stove; Fig. 7, a detached sectional view drawn to an enlarged scale; Fig. 8, a perspective view of Fig. 7; and Fig. 9 a perspective view, showing a modification of my invention.

Similar letters refer to similar parts throughout the several views.

The base of the stove consists of the bottom plate A, and of a casing, B, narrowest at the top, where it is joined by a casing, B', which increases in diameter toward its upper edge.

In the front of the casing B there is an opening over which is a door, C, hinged at the bottom, and perforated with a number of small holes, a, which are covered by a perforated sliding damper, a', through which air in any desired quantity may be admitted to the interior of the base of the stove.

Extending around the casing B, near to the upper edge of the same, is a row of holes, b, which are covered by a metal ring, D, fitted accurately to the outside of the casing, but so as to turn freely thereon, this ring being pro-

vided with mica-covered holes b' corresponding in number to the holes b of the casing. The fire-pot E is suitably secured within the stove in such a position that an annular chamber, c, shall intervene between it and the casing B', this chamber being bounded at the top by a horizontal plate, F, which rests upon the upper edges of the casing B' and fire-pot. The grate immediately beneath the fire-pot consists of two parts, the upper annular portion G, which has a lip, d, enabling it to rest upon brackets d' of the outer casing, and the curved bottom G' hinged to the portion G, and held up to the same by the curved rod H, Fig. 5, which turns in the base of the stove, and projects from one side of the same, where it is squared, so that it may be operated by a suitable key.

In order to prevent the curved rod H from falling, and thus releasing the bottom of the grate, it is, when elevated, turned slightly beyond a vertical position, as best observed in Fig. 2, until its projections e touch the bottom plate of the stove.

The grate, which can be freely turned upon the brackets d', is shaken by means of a rod, f, which projects through a slot, g, in the front of the stove, this rod passing also between the arms h h' of the ring and between two rods, i i, Figs. 4, 7, and 8, which pass upward through the chamber c, and are attached to a ring, I, which is arranged to turn upon the top of the plate F. The ring I has two rows of holes, j, Fig. 3, corresponding to similar rows of holes in the plate F. Upon the top of the plate F rests a conical casing, L, within which is the fire-chamber, there being in the present instance six large openings in this casing covered by doors k, which are hinged at the top, so that they may be opened upward, as shown, Fig. 1, and thus occupy less space, when opened, than if they were hinged to the lower and widest part of the casing or at the side. Each of these doors k has an opening, k', to which mica is fitted, in the usual manner. To the top of the casing L is secured a cylindrical casing, M, and to the upper edge of the latter is joined the top P of the stove, from which is suspended the coal reservoir or feeder R.

The reservoir R extends downward into the fire-chamber, and is provided near its lower

end with a valve, S, which can be operated from the front of the stove by a suitable key, and between the said reservoir and the casing M is an annular chamber, *l*, which communicates with a chamber, *l'*.

The heated products of combustion are not permitted to pass directly from the chamber *l* into the outlet-pipe T, but are, by reason of a partition, *n*, Fig. 2, first directed upward into the radiating-chamber *l'*.

The fuel is conveyed to the reservoir R by means of a conductor, consisting of a scoop-shaped portion, V, and of a lid, V', which is hinged to the top of the stove, and so connected by arms *r r* to the scoop V that when the latter is drawn outward, as shown in Fig. 2, the lid shall at the same time be raised, and afford ample passage for the conveyance of the fuel, while, when the scoop is pushed inward, as seen in Fig. 5, the lid shall be tightly closed, so as to interrupt but slightly the uniformity of the top of the stove.

A plate or disk, W, turns upon a pivot, *s*, on the top of the stove, and is perforated with small holes corresponding to the holes *s'* of the stove, which communicates with the interior of the reservoir. A rod, *t*, of the disk W is attached to a perforated sliding damper, *k'*, which passes partly around the reservoir covering holes *u*, through which the gases escape from the said reservoir into the chamber *l'*.

One of the principal features of my invention is the conductor, above described, at the top of the reservoir, affording, as it does, ample passage for the introduction of the fuel when opened, while it can be so tightly closed as to effectually prevent the escape of gases from the reservoir. The valve *s* in the reservoir enables the supply of fuel to be cut off when the fire is to be raked, &c.

The object in providing the movable rings D and I with arms, which can be operated by the pin *f* of the movable grate, is to enable these rings to be turned to such a position, when the grate is shaken, that the mica-covered openings *b'* shall be covered and protected from dust, while the openings *j* shall be brought opposite to the openings of the plate F, and thus provide passages into the fire-chamber for the dust which passes upward through the annular chamber *c*.

The method of operating these rings, when the grate is to be shaken, is as follows: The pin *f* is turned in the direction of its arrow, Fig. 1, until the arms *h* and *i* have been moved to the position seen on Fig. 8, the grate being

then shaken by means of the rod *f*, which, however, is not permitted to strike the arm *h'*. When the grate has been sufficiently shaken, the rod *f* is turned back to its first position, the arms *h* and *i* moving before it until the rings D and I have also been brought to their proper positions.

Another important feature of my invention is the method of supporting the hinged grate G, the rod H performing this duty effectually, and enabling the said grate to be quickly released when necessary.

The modification of my invention, Fig. 9, shows a method of constructing the reservoirs of stoves in sections, instead of in one piece, as heretofore, the sections being provided with lips or flanges *x*, by means of which they can be easily secured together. This plan enables me to more readily introduce the reservoir into its place in the stove.

I claim as my invention and desire to secure by Letters Patent—

1. The grate consisting of the annular grated portion G, arranged to turn beneath the fire-pot, and a circular grated portion, G', hung to the portion G, and turning with the latter, substantially as described.

2. The combination of the hinged portion G of the grate with the curved rod H and its stops *c*.

3. The arrangement of the ring D and its mica-covered openings in respect to the annular portion G of the grate.

4. The said ring D in combination with the ring I when both are controlled by the agitating-rod of the grate G, substantially as specified.

5. The doors *k* hinged at the top to the casing L of the stove, substantially as and for the purpose specified.

6. The making of the feeder or reservoir R in two halves, adapted to each other, and connected together, substantially as described.

7. The scoop-like fuel-receiver V, and the lid V' of the same, when the two are connected together, and both are applied to the casing and feeder of the stove, for operating substantially in the manner described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

HENRY C. MARCH.

Witnesses:

JOHN WHITE,
HARVEY SMITH.