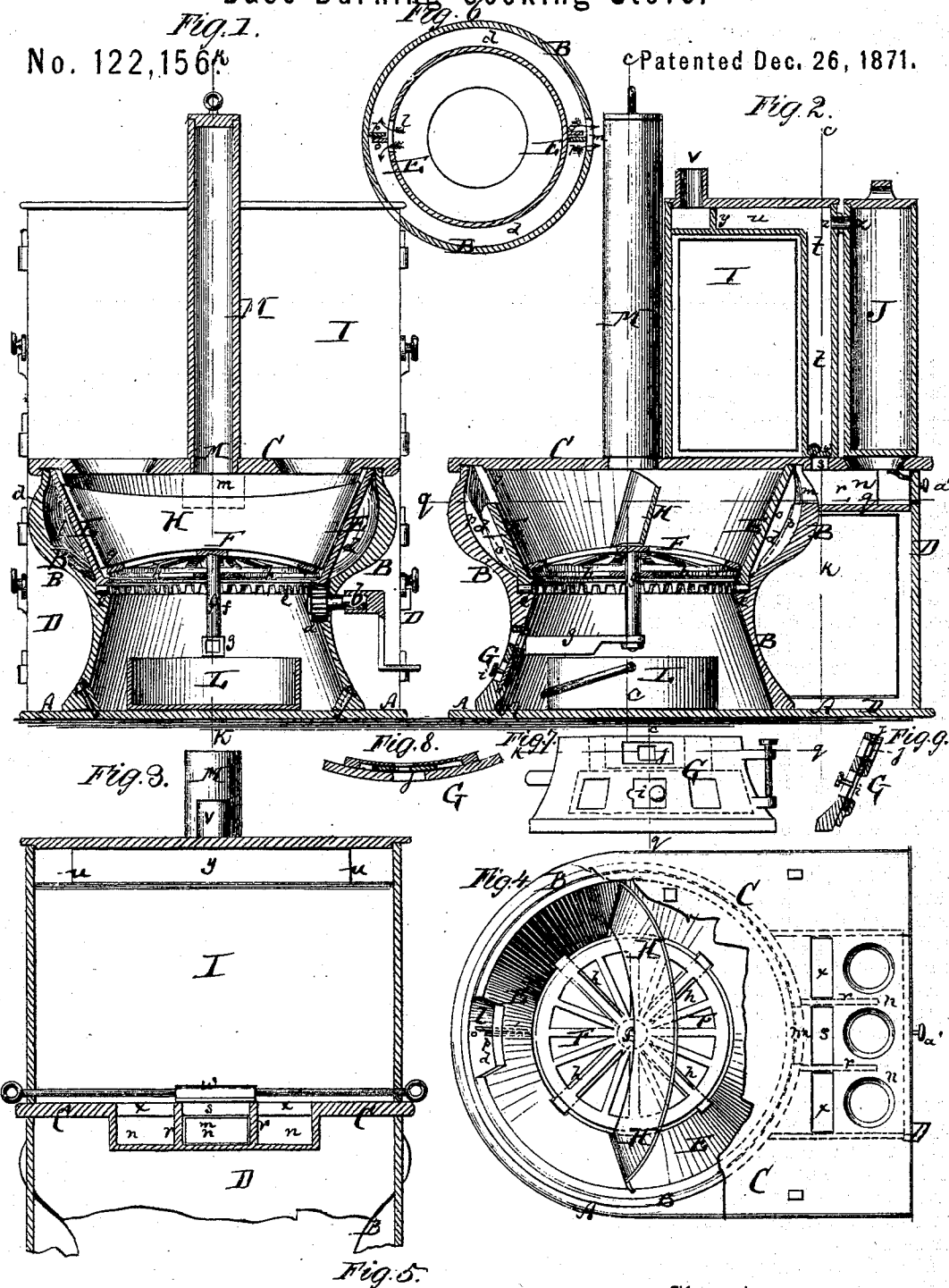


(154.)

WILLIAM CLARK.
Base Burning Cooking Stove.

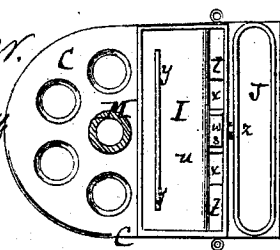
No. 122,156

Patented Dec. 26, 1871.



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UNITED STATES PATENT OFFICE.

WILLIAM CLARK, OF SHELBURNE, VERMONT.

IMPROVEMENT IN BASE-BURNING COOKING-STOVES.

Specification forming part of Letters Patent No. 122,156, dated December 26, 1871.

Specification describing a new and Improved Base-Burning Cooking-Stove, invented by WILLIAM CLARK, of Shelburne, in the county of Chittenden and State of Vermont.

Figure 1 represents a vertical transverse section of my improved cooking-stove, the line *c c*, Fig. 2, indicating the plane of section. Fig. 2 is a vertical longitudinal section of the same on the line *k k*, Fig. 1. Fig. 3 is a detail vertical section through the oven on the line *c k*, Fig. 2. Fig. 4 is a plan or top view of the stove, the oven and reservoir being removed and the top plate partly broken away. Fig. 5 is a top view of the stove with the uncovered oven and reservoir in place. Fig. 6 is a detail horizontal section on the line *q q*, Fig. 2, of the fire-place. Fig. 7 is a detail front view of the door to the air-chamber under the grate. Fig. 8 is a horizontal section of the same on the line *k q*, Fig. 7. Fig. 9 is a transverse section of the same on the line *c q*, Fig. 7.

Similar letters of reference indicate corresponding parts.

This invention relates to a new cooking-stove, which is provided with a circular fire-place and rotary interior lining thereto, and with a feed-cylinder for the automatic supply of coal, and other new arrangements of parts, whereby it becomes an important improvement on the cooking-stoves now in use. The invention consists chiefly in the arrangement of the aforementioned rotary fire-box, which can be set or turned at will to regulate the draught, and which contains a removable cross-partition to have but half a supply of coal, which can be brought under either portion of the top plate or under the oven, as may be desired. The invention also consists in a new arrangement of draught-door, grate, oven, and water-reservoir, all as hereinafter more fully described.

A, in the drawing, represents the hearth-plate of the stove. B is the outer case of the fire-place, made circular and enlarged at its upper part, as shown. C is the top-plate of the stove, placed upon the case or main body B, and provided with a suitable number of holes for the reception of the cooking-vessels. D is an oven, placed back of the fire-place, against the body or case B, to receive the surplus heat radiated from the back of the same. The top plate C extends over the oven D, as shown in Figs. 2 and 4. E is the annular inner lining of the fire-place. It is made of metal,

of inverted truncated conical form, with a toothed lower edge. A pinion, *a*, mounted upon a crank-arbor, *b*, which has its bearings in the side of the case B, meshes into the toothed lower edge of this lining E, so that by turning the arbor *b* the lining will also be revolved within the case B. The upper part of the case B, in which the lining E is contained, is made to bulge out, as shown, so that thus an annular space, *d*, is formed between B and E, said space being closed on top and bottom. The lower part of the lining E rests on a shoulder, *e*, which is formed within B, while its upper edge fits a circular groove on the under side of the top plate C, or is otherwise so made as to close the space *d* on top and bottom. F is the grate. It is of circular form, made of radiating bars that are connected by a central solid portion and by an outer ring, as in Fig. 4. From this grate projects downward a central pin or shaft, *f*, which has a bottom arm, *g*, projecting forward toward the door G in the lower part of the case B. The body of the grate rests with its lower rim on a cross, *h*, which is placed across the bottom of the fire-place, the ends of the cross resting upon notches cut into the lining E. The pin *f* fits loose through the cross *h*. The door G has an adjustable register, *i*, for regulating the admission of air to the fire, substantially like all similar doors in stoves. There is also an aperture through the door for the reception of a bar or lever, which, when inserted within the socket *g*, can be used to shake the grate by oscillating it horizontally on its pivot *f*. The aperture through the door G for receiving said bar for shaking must be of a certain length to permit the oscillating movements of the bar. In order to reduce the size of this aperture and not make it too large an opening for air, I have provided in it a sliding plate, *j*, perforated just enough to admit the shaking-bar. This plate *j* rests on a track in the door, and slides back and forth when the bar is vibrated. H is a transverse partition for the fire-place. It is placed across the lining E, its ends fitting grooves of said lining. This partition divides the fire-place into halves, so that fire may be had only on one side. By means of the arbor *b* the lining E can be turned to bring the fire under any part of the top plate C, even under the oven I, which is placed upon the top plate C. The smoke escapes from the fire-place through a hole, *l*, in the lining into the space *d*, and thence

through a hole, *m*, in the back part of the case B into a chamber, *n*, which is over the oven D, below the top plate C, as shown in Fig. 2. The smoke then must pass out forward (see Fig. 6) and sweep entirely around the lining E before it can escape through the hole *m*; but the lining E can at any time be turned to make the draught more direct. From the outer face of the lining E project ribs *o o* through the space *d* against the case B, while similar ribs, *p p*, project from the inner side of B toward E. Whenever the latter is turned the ribs will sweep the walls of the space *d* of all ashes that may have accumulated therein, and cause the same to escape through notches cut through the supporting-flange or shoulder *e*. L is the ash-pan, of suitable kind, introduced through the door G. Behind the oven I is placed, upon the top plate C, the water-reservoir J. The products of combustion pass ordinarily to the chamber *n*, between two vertical ribs *r r* therein, and then up between said ribs through a hole, *s*, into a flue, *t*, which is between the oven I and reservoir J. This flue leads to a smoke-chamber, *u*, above the oven, where the current is divided and spread by a transverse rib, *y*, to finally escape to the smoke-flue *v*. When, however, a damper, *w*, above the hole *s* is closed, the smoke passes backward between the ribs *r r* and around their back ends, and then forward again on the outer sides of said ribs, entering the flue *t* through the holes *x x*. In this way the heat can be carried under the reservoir J by closing, and away from the same by opening, the damper *w*. The top plate C is or may be perforated under the reservoir J to increase the effectiveness of the heat. Z is a short pipe for the escape of steam from the reservoir. M is a vertical cylinder for the supply of coal to the

fire-place. It is fitted upon and through the top plate C in such position that its charges will, in the ordinary position of E, fall forward of the partition H, the ordinary position being when the hole *l* is in front. *a'* is a removable plate in the back of the smoke-chamber *n*, allowing the same to be properly cleansed out.

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

1. A cooking-stove provided with a circular case or body, B, which contains a circular rotary lining, as set forth.

2. The rotary lining E, arranged within the fire-place of a cooking-stove and geared into an arbor, *b*, whereby it can be turned, as set forth.

3. The grate F, supported and swiveled in the cross *h*, which is secured within the rotary lining E of the stove, as specified.

4. The partition H, fitted across the circular fire-place, substantially as herein shown and described.

5. The combination of the rotary lining having the hole *l*, with the stationary case B having the hole *m*, and with the intervening annular smoke-passage *d*, as set forth.

6. The ribs *o p*, arranged respectively on the lining E and case B, substantially as and for the purpose herein shown and described.

7. The smoke-chamber *n*, under the reservoir J, when provided with the ribs *r r*, and arranged in combination with the damper *w* and flue *t*, substantially as herein shown and described.

The above specification of my invention signed by me this 18th day of October, 1871.

WILLIAM CLARK.

Witnesses:

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