

P. D. BECKWITH.  
Heating-Stoves.

Patented April 28, 1874.

No. 150,277.

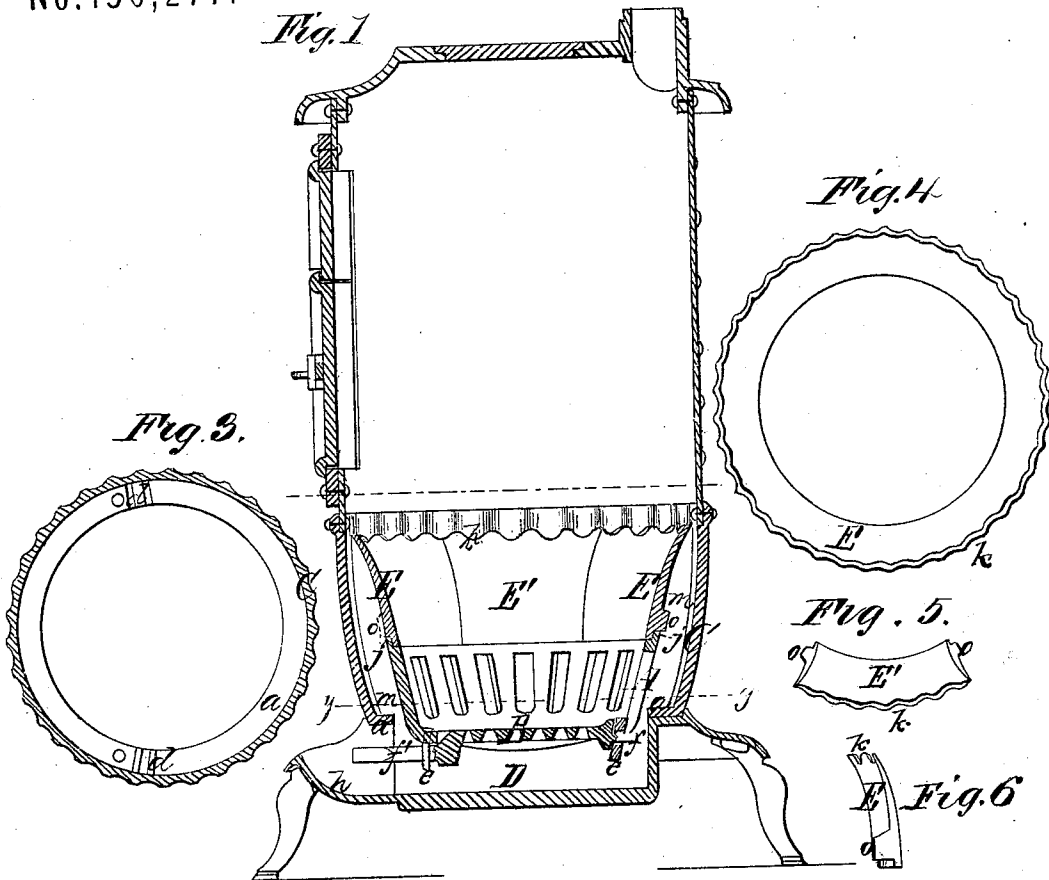


Fig. 2

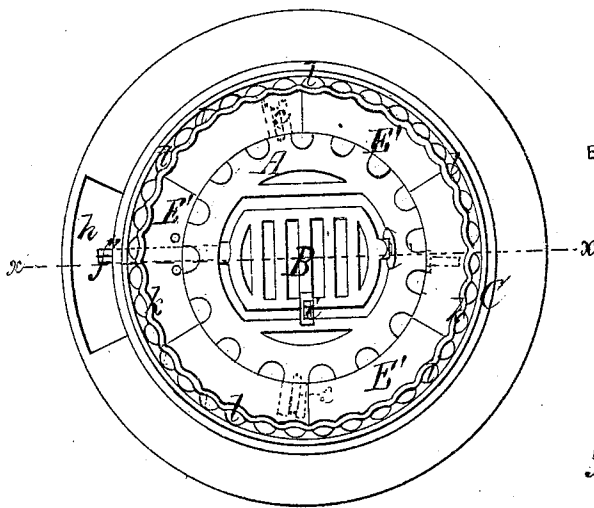


Fig. 4

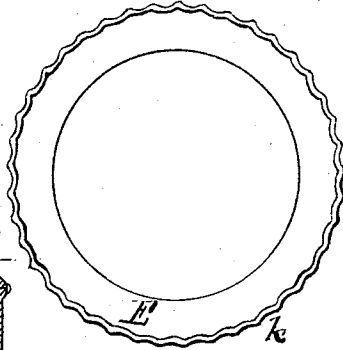


Fig. 5

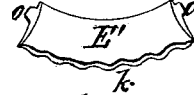


Fig. 6



Fig. 7

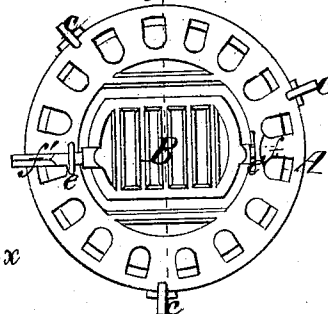
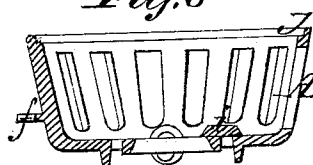


Fig. 8



Witnesses.  
James Martin Jr.  
J. N. Campbell.

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# UNITED STATES PATENT OFFICE.

PHILO D. BECKWITH, OF DOWAGIAC, MICHIGAN.

## IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. 159,277, dated April 23, 1874; application filed November 6, 1873.

To all whom it may concern:

Be it known that I, PHILO D. BECKWITH, of Dowagiac, in the county of Cass and State of Michigan, have invented a new and useful Improvement in the "Round-Oak Stove;" and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1 is a vertical section in the line  $x x$  of Fig. 2. Fig. 2 is a horizontal section in the line  $y y$  of Fig. 1. Fig. 3 is a horizontal section of the fire-pot. Fig. 4 is a top view of the inner lining of the fire-pot, as made in one circular piece. Figs. 5 and 6 are top and side views of one segment of a lining for a fire-pot, such lining being made of several segments. Fig. 7 is a bottom view of the basket-grate. Fig. 8 is vertical section of the basket-grate in the line  $g g$  of Fig. 7.

The stove represented is one on which several patents have been granted to me at dates prior to this, but the stove as heretofore patented was designed for burning round oak wood.

My present improvement consists in a grate and lining which adapt this stove for burning coal.

The body portion A of the grate is of a circular form, with its grated sides extending obliquely outward and upward from its base. Its bottom portion B consists of a horizontal oblong grated surface. The grate A B is fitted within the fire-pot portion C, and the ash-pit section D of the stove, and rests upon a horizontal ledge or flange,  $a$ , which extends inward from the base of said fire-pot. Its form permits its lower end to extend down into the ash-pit section a short distance, as shown. Lugs  $c c$ , extending from the circumference of the body portion of the grate, and resting in channeled ribs  $d d$ , formed on the upper side of the flange  $a$ , prevent the further descent of the grate into the ash-pit section after it has been adjusted in position. The bottom B is constructed separate from the body portion, and is hung in lugs  $e e$  of said portion by means of journals  $f f'$ , the jour-

nal  $f'$  being extended toward the ash-pit entrance  $h$  in a square form, to receive a shaking-bar upon it. The journals are set a little to one side of the center of the bottom, so that the bottom may be easily tilted.  $i$  is an upper stop-lug extending from one side of the bottom B over upon a perforated stationary part of the bottom of the body portion of the grate. This lug prevents the grate from tilting on that side which is the heaviest. In the upper edge of the grated body portion A a rabbet,  $j$ , is formed, and upon this rabbeted edge a circular upwardly-flaring metal lining, E, is arranged. This lining is fluted or corrugated around its upper rim, as at K, to correspond with the flutes or corrugations formed in the fire-pot C. The flare of the lining may be on a straight or a curved line. From the drawing it will be seen that the flutes of the rim form, with the flutes of the fire-pot, elliptical passages  $l$  between the two walls. It will also be seen that a chamber,  $m$ , is formed all around the fire-pot lining. This is due to the form of the fire-pot and its flange  $a$ , in connection with the form of the lining and basket portion of the grate. The chamber runs into the elliptical passages  $l$ , and thus a circulation of the hot air is secured. The apertures forming the grated surface of the basket-grate communicate with this chamber  $m$ , and thus contact of the heated products of combustion with the surface of the fire-pot is also secured.

In practice I shall make the lining in several segments, E', and unite these segments, as shown in Fig. 2. The adjoining radial edges of the segments will be formed with lugs  $o o$ , which will afford the necessary lateral support between the segments, and obviate the necessity of having the lining as thick between these lugs as at the points where the lugs are formed.

It will be seen that there is a free space between the ledge  $a$  and the body portion of the grate all around, through which ashes may descend into the ash-pit, and up through which air may rise, and come in contact with the sides of the fuel in the body portion of the grate.

What I claim as new, and desire to secure by Letters Patent, is—

1. The lining-section composed of the flaring circular ring, resting on the top edge of the grate, and extending upward and outward obliquely to the fire-pot, and with a corrugated rim resting against the inside of the fire-pot, substantially as and for the purpose described.
2. The combination, with the fluted fire-pot

of the stove herein shown, of the basket-grate with its tilting bottom, and the lining with its fluted rim or outer edge, all constructed and arranged substantially as described.

PHILO D. BECKWITH.

Witnesses:

EPHRAIM O. ADAMS,  
THOMAS J. RICE.