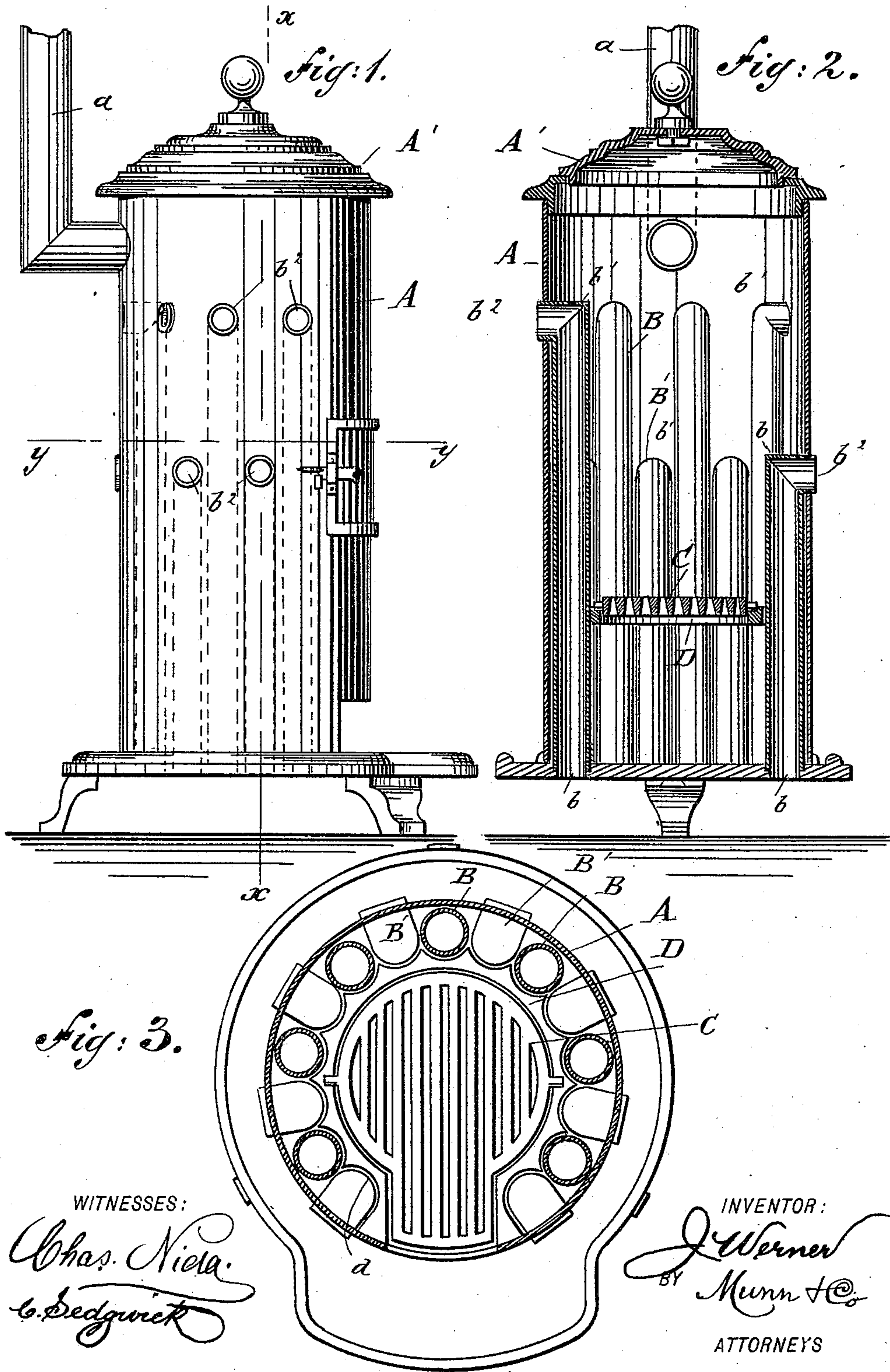


(No Model.)

J. WERNER.
STOVE.

No. 451,284.

Patented Apr. 28, 1891.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JOHN WERNER, OF BROOKLYN, NEW YORK.

STOVE.

SPECIFICATION forming part of Letters Patent No. 451,284, dated April 28, 1891.

Application filed November 29, 1890. Serial No. 373,013. (No model.)

To all whom it may concern:

Be it known that I, JOHN WERNER, of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Stove, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of stoves which are used exclusively for heating purposes. The stoves most commonly used for warming buildings heat only by direct radiation, and a considerable quantity of the heat caused by the combustion of fuel within the stove passes away through the stove-pipe into the chimney and is lost.

The object of my invention is to produce a stove of simple construction, by means of which substantially all the heat arising from the combustion of fuel within it may be utilized for warming a room.

To this end my invention consists in a stove having a series of pipes arranged around its inner walls, said pipes opening through the bottom and sides of the stove, and this construction will be hereinafter fully described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of a stove embodying my invention. Fig. 2 is a vertical section of the same on the line xx of Fig. 1, and Fig. 3 is a horizontal section on the line yy of Fig. 1.

The stove-casing A, as shown in the drawings, is cylindrical in shape and is mounted on suitable legs, is provided with the ordinary dampers and doors, and the top of the casing is closed by a casting A'. The shape of the stove does not form any part of my invention, however, and in carrying out my invention any desired shape may be given to the stove. Within the casing A are a series of vertical pipes B and B', which are arranged around the entire inner wall of the casing, so as to touch each other, the pipes B being longer than the pipes B' and the pipes B and B' being alternated. Both the pipes B and B' open through the bottom of the stove, as

shown at b , and the pipes also have angular bends b' near the top, and the pipes at their upper ends open through the side wall of the casing, as shown at b^2 . It will thus be seen that the upper portion of the pipes will extend through the fire-box of the stove and will be in contact with the flames, so that the air in the pipes will become heated, and as hot air has a tendency to rise it will pass outward through the upper ends of the pipes, being replaced by the cooler air from below, so that a constant circulation will be maintained and the stove will heat by radiation in the usual way, and also by the hot-air circulation, as described, so that a large amount of heat may be obtained from a comparatively small amount of fuel.

The stove is provided with the ordinary form of grate C, which is mounted in a collar D, said collar being secured to the casing A and having scallops d therein to enable it to fit closely upon the pipes B and B'.

It will be seen that as a portion of the pipes are longer than the others the heat will issue from different points on the sides of the stove, so that it will be more evenly diffused through the room than would be the case if it issued from a single point upon the stove.

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

1. A stove consisting in an outer casing, a series of vertical pipes of different lengths alternately arranged close together around the interior of the casing and forming the fire-box, the said pipes extending through the base at their lower ends and through the casing at their upper ends, and a grate supported within the series of pipes above their lower ends, substantially as set forth.

2. The combination, with a stove having a series of pipes arranged therein, of a collar fixed to the casing and shaped to fit the pipes, and a grate pivoted in the collar, substantially as described.

JOHN WERNER.

Witnesses:

WARREN B. HUTCHINSON,
C. SEDGWICK.