

J. H. HELM.
HEATING STOVE.

No. 179,557.

Patented July 4, 1876.

Fig. 1.

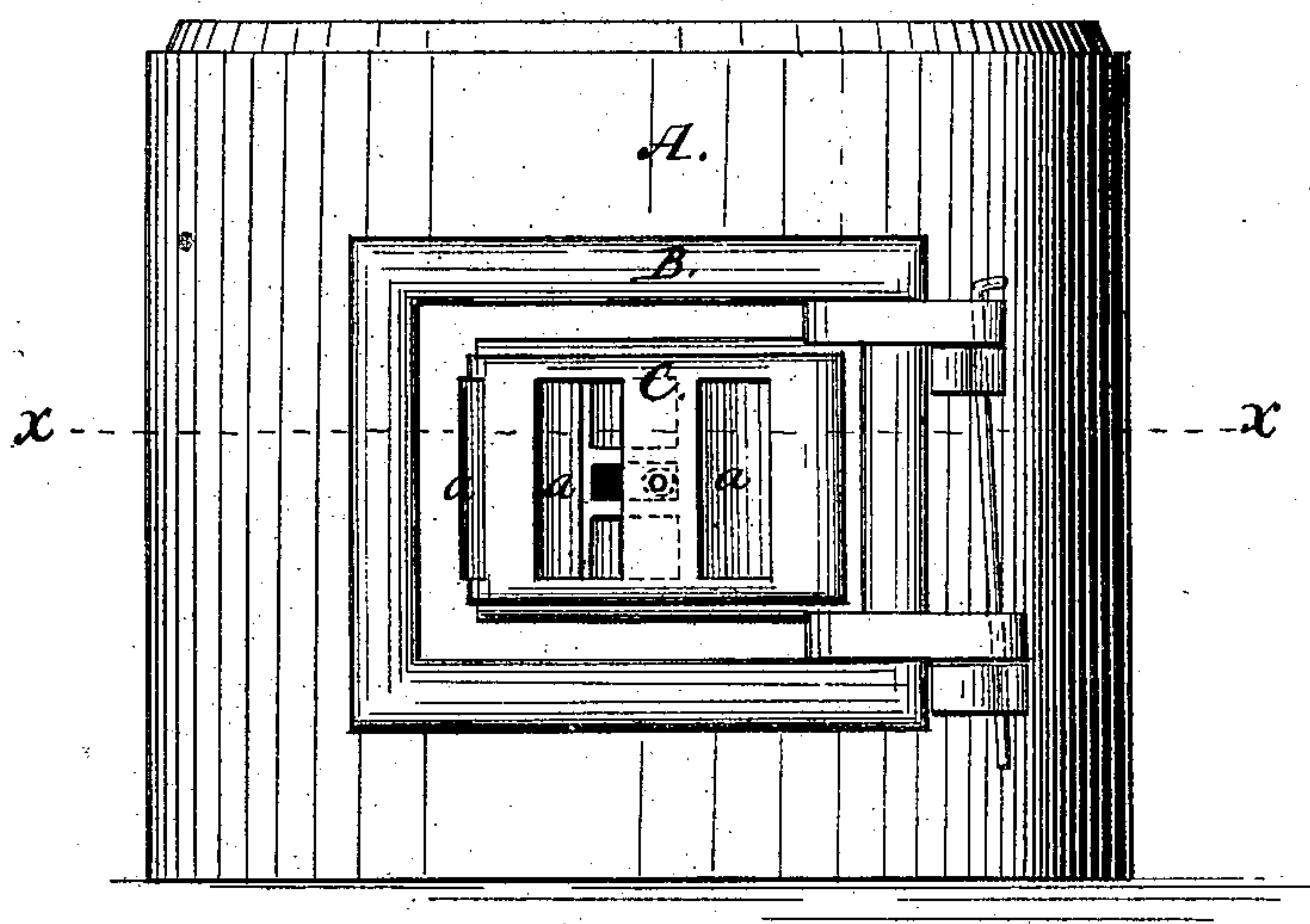
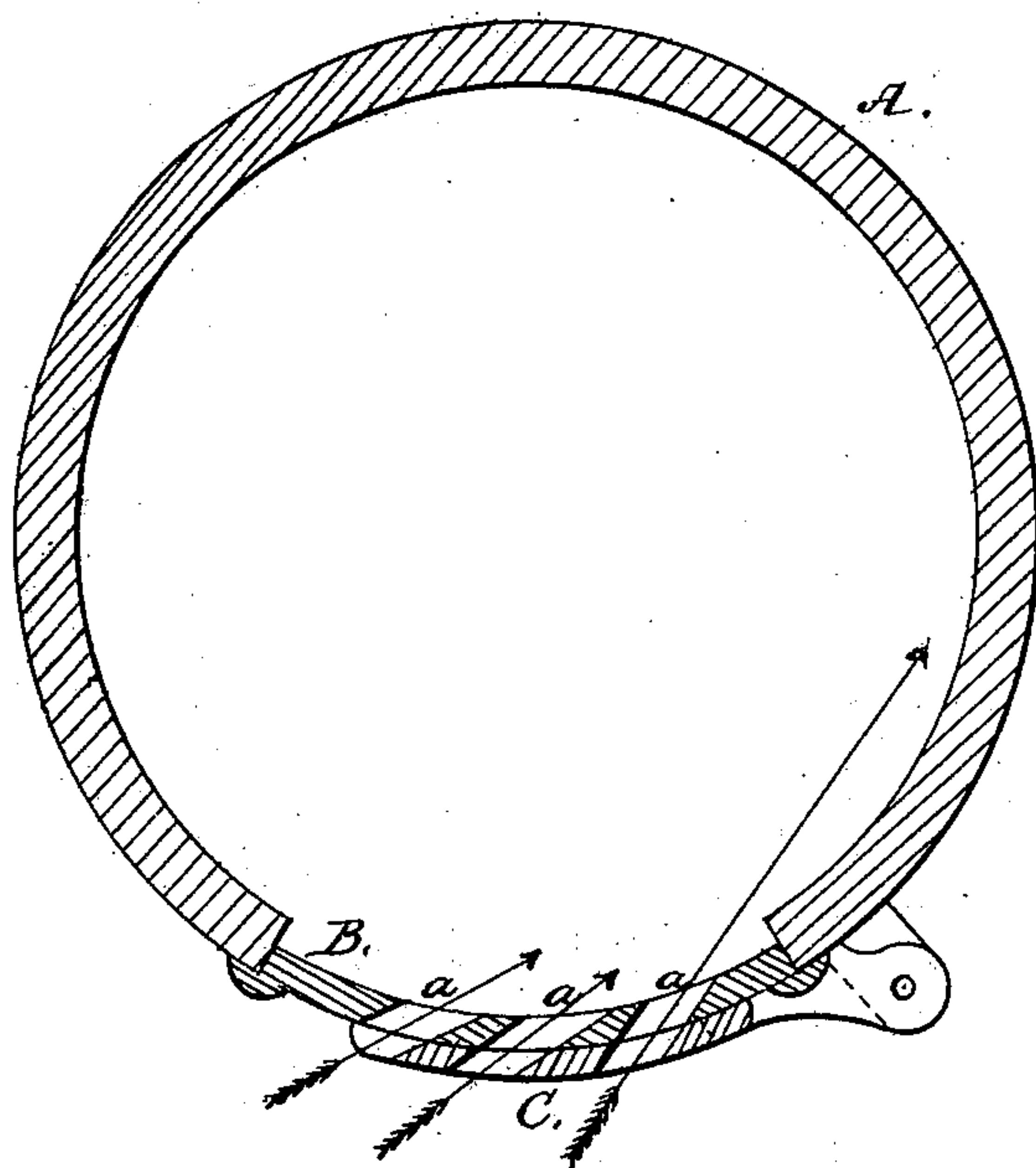


Fig. 2.



Witnesses:

Jacob Eiswiler
Henry Ross

Inventor

J. Henry Helm

UNITED STATES PATENT OFFICE.

J. HENRY HELM, OF ALLEGHENY, PENNSYLVANIA.

IMPROVEMENT IN HEATING-STOVES.

Specification forming part of Letters Patent No. **179,557**, dated July 4, 1876; application filed November 8, 1875.

To all whom it may concern:

Be it known that I, J. HENRY HELM, of the city and county of Allegheny and State of Pennsylvania, have invented a new and useful Register for Circular Heating-Stoves; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing, in which—

Figure 1 is a front elevation of that part of a round heating-stove containing the door. Fig. 2 is a sectional view of the same through the line *x x*.

Like letters of reference refer to like parts.

My invention consists in an improved register, to be attached to a round heating-stove in which soft or bituminous coal is to be used, and is for the purpose of producing a more complete combustion of such coal. It is based on the discovery which I have made that by giving the current of air—which is generally admitted through the register above the fuel—a direction nearly at a tangent with the periphery of such stove, a circular current of all the gases will thereby be produced in the interior of said stove, the air so admitted being on the outside, and a compact and smokeless flame forming in the center in the shape of a cone, all having a spiral motion upward. To produce such a tangential or oblique current of air in connection with a circular stove, I provide the same with a register containing a number of oblique air-passages, *a a a*, as shown in Fig. 2, part of which passages are in the register proper, and corresponding ones equally inclined are contained in the door, as shown. The register mentioned is attached to the door in such a manner that it can be given a sliding motion, so as to allow it to open or shut.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

Fig. 1 is a cylindrical portion of an ordinary circular stove, containing a door, B, which is provided with a number of slots, which pass through said door in an oblique direction, as shown in Fig. 2. Attached to said door is a register, C, provided with an equal number

of slots similar to, and corresponding with, those contained in the door, and which, in combination with each other, form the air-passages *a a a*, whenever the register is opened, as shown in Fig. 2, the direction of the air-current thereby produced being indicated by the arrows.

The operation of this device is simple. When fresh fuel is placed in the stove the register is opened, when the cold air, passing in the direction of the arrows, owing to its greater specific gravity, at once falls closely to the surface of the fuel. It soon meets the circular inside wall of the stove, however, and, passing close against the same, crowds the lighter gases produced by the combustion of the fuel to the center, and gives the whole column of gases a circular or spiral motion.

By this process the inflammable gases are not scattered by the cold air, and thus reduced in temperature below the point where all the particles of carbon can ignite before the air becomes sufficiently heated; but they are kept in a solid column in the center, and in burning produce a clear, white, and smokeless flame.

Although I generally attach my improvement to the door of stoves, in place of the common register now used, yet I also place the same at any other convenient and practicable part of stoves; nor do I always make my improved register of the precise form as above indicated and described; but I always provide the same with a number of oblique air-passages, so as to give the air, on entering the stove, a circular motion, such as is indicated by the arrows in Fig. 2.

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

In a cylindrical or circular stove, a register having air-passages, the channels of which are arranged obliquely to the inner walls of the stove, and between two horizontal planes, substantially as hereinbefore described, and for the purpose set forth.

J. HENRY HELM.

Witnesses:

JACOB EISENBEIS,
HENRY ROSSER.