

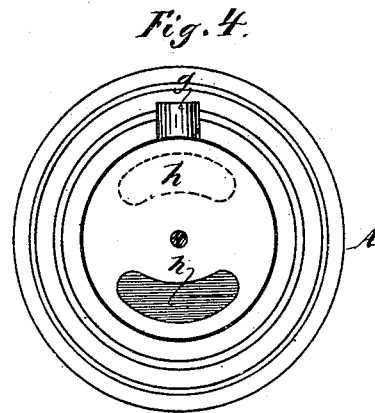
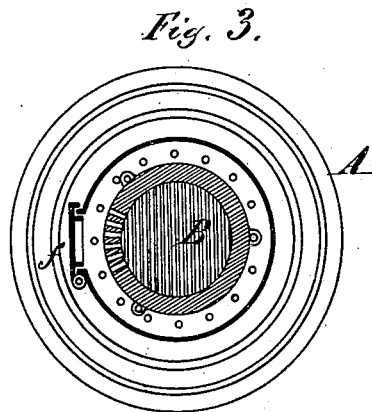
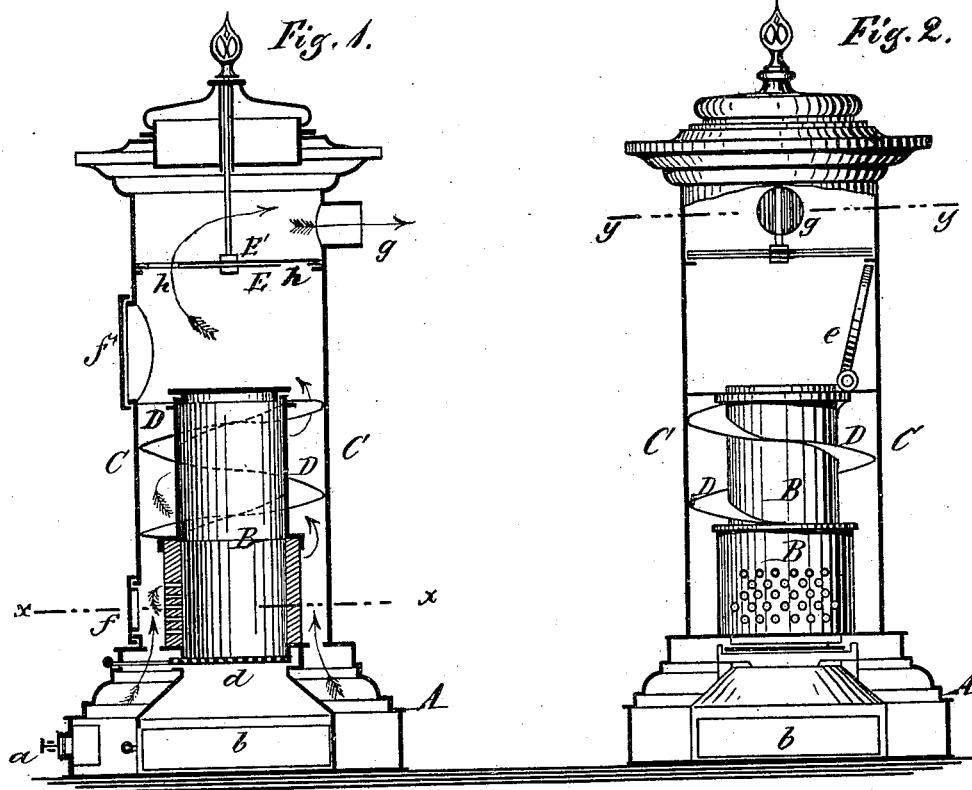
(No Model.)

E. SCHÖNEBERG.

HEATING STOVE.

No. 266,393.

Patented Oct. 24, 1882.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

EWALD SCHÖNEBERG, OF BOCKENHEIM, GERMANY, ASSIGNOR TO HIMSELF  
AND OTTO CULLMANN, OF CULLMAN, ALABAMA.

## HEATING-STOVE.

SPECIFICATION forming part of Letters Patent No. 266,393, dated October 24, 1882.

Application filed July 15, 1882. (No model.) Patented in England February 28, 1882, No. 967; in Belgium March 15, 1882, No. 57,216, and in France May 9, 1882, No. 147,640.

*To all whom it may concern:*

Be it known that I, EWALD SCHÖNEBERG, of Bockenheim, in the Empire of Germany, have invented certain new and useful Improvements in Heating-Stoves, of which the following is a specification.

This invention has reference to an improved heating-stove which is built on the so-called "regenerating" principle; and it consists of an interior closed combustion-cylinder to which a limited supply of air is allowed to pass, said cylinder being provided at the lower front part with a series of gas-openings, which mingle with the air drawn in at the lower part of the stove and mingle there and are burned therewith, the flame being drawn along in a spiral flue around the combustion-cylinder to the upper part of the stove, and thence through the openings that are partly or wholly closed by a damper of the chimney-pipe.

In the accompanying drawings, Figure 1 represents a vertical central section of my improved heating-stove. Fig. 2 is a front elevation, partly in section, through the outer casing; and Figs. 3 and 4 are respectively a horizontal section on line *xx*, Fig. 1, and *yy*, Fig. 2.

Similar letters of reference indicate corresponding parts.

My improved stove consists of the following main parts: first, of the base A, with a hermetically-closing door, *a*, and an ash-box, *b*; second, of a combustion-cylinder, B, the lower part of which is made of fire-clay and provided with a movable-grate, *d*, while the upper part is made of cast-iron and provided with a hinged and tightly-closing lid, *e*; third, of a cylindrical casing, C, of cast-iron, which is provided with two front doors, *f f'*—one in front of the lower portion of the combustion-cylinder B, and the other above the upper end of the cast-iron portion of the same. At the rear part of the casing C is arranged a pipe, *g*, which is connected with the chimney-pipe. Between the upper part of the combustion-cylinder B and the cylindrical casing C is arranged an iron spiral flue, D, so that the air and the gas generated in the lower part of the combustion-chamber can be drawn along the spiral flue D into the upper part of the stove. The lower

part of the combustion-cylinder B is provided at its front part with a number of perforations, through which the gases generated at the interior of the cylinder B are conducted into the annular space between the outer casing, C, and the combustion-cylinder.

For starting the stove the hinged lid *e* of the combustion-cylinder is opened and the wood or other fire started in the combustion-cylinder until a good fire is obtained. After this the entire combustion-cylinder is filled with coal and the lid *e* is closed, the air being drawn into the space between the casing C and cylinder B through perforations in the circular top plate of the base A, it being supplied from the space between the ash-pan and the base A. The air mingles with the gases emitted through the openings of the combustion-cylinder and passes along the spiral flue D into the upper part of the stove, the gas being continually supplied with air which is heated in its upward passage, so that a perfect combustion of the gas is obtained. As the doors are tightly closed any escape of unburned gas is rendered impossible.

At the upper part of the stove, below the pipe *g*, is arranged a horizontal partition-plate, E, having front and back openings, *h*, above which a damper, E', of corresponding shape is arranged, which is operated by a vertical spindle extending through the top of the stove, and provided with a button at the upper end, the damper being provided with one opening only, which registers with either the front or back opening, *h*, so as to establish either a direct draft to the pipe *g* or a more circuitous course, as shown in Fig. 1, with a view to produce the more perfect utilization of the gases on their way to the chimney-pipe, and an increased heating action.

A water-receptacle in the top of the stove supplies the required degree of moisture to the air in the room in the customary manner.

The advantages of my improved heating-stove are that by applying the system of generating carbonic-oxide gas to common heating-stoves a more perfect utilization of the fuel is rendered possible, and thereby a higher degree of heat and a greater percentage of the theo-

retical heat-units contained in the fuel is obtained.

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

5 1. In a heating-stove, the combination of an interior combustion-cylinder having holes in its wall, a perforated circular plate at the top of the base, a hinged lid at the top of the cylinder, and a spiral flue surrounding the cylinder, and in which air and gas are mingled, the  
10 gas being admitted through said holes in the cylinder, the air through the perforations of said plate, substantially as described.

2. In a heating-stove, the combination of an  
15 interior combustion-cylinder having holes in its wall, a flue surrounding said cylinder, a perforated plate at the top of the base, a hinged lid at the top of the cylinder, and a horizontal partition-plate having front and back open-  
20 ings, and a damper which registers with either

the front or back opening, whereby a direct or circuitous draft is established between the spiral flue and the exit-pipe, substantially as described.

3. The combination of an interior combus- 25 tion-cylinder having holes in its wall for the escape of gas into the flues surrounding the cylinder, a casing of larger diameter than the cylinder, having air-openings in its base-plate, a spiral flue around the upper part of the com- 30 bustion-chamber, and a horizontal damper arranged at the upper part of the stove, below the exit-pipe, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name in pres- 35 ence of two subscribing witnesses.

EWALD SCHÖNEBERG.

Witnesses:

F. VOGELER,

J. GRUND.