2 Sheets—Sheet 1.

F. J. SCHOPP.

Stove Grate.

No. 104,212. Patented June 14, 1870.

Fig. 1. Plan.

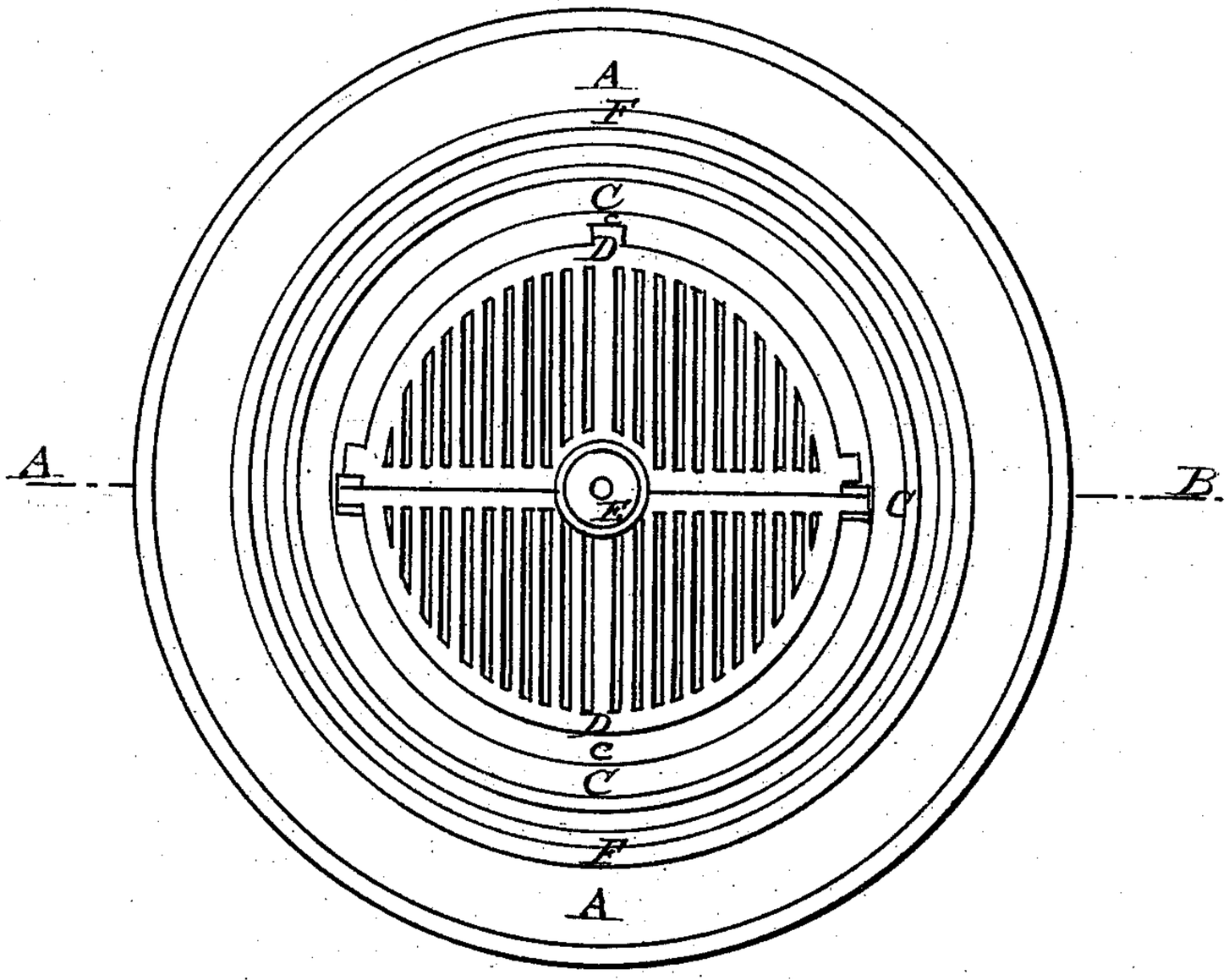
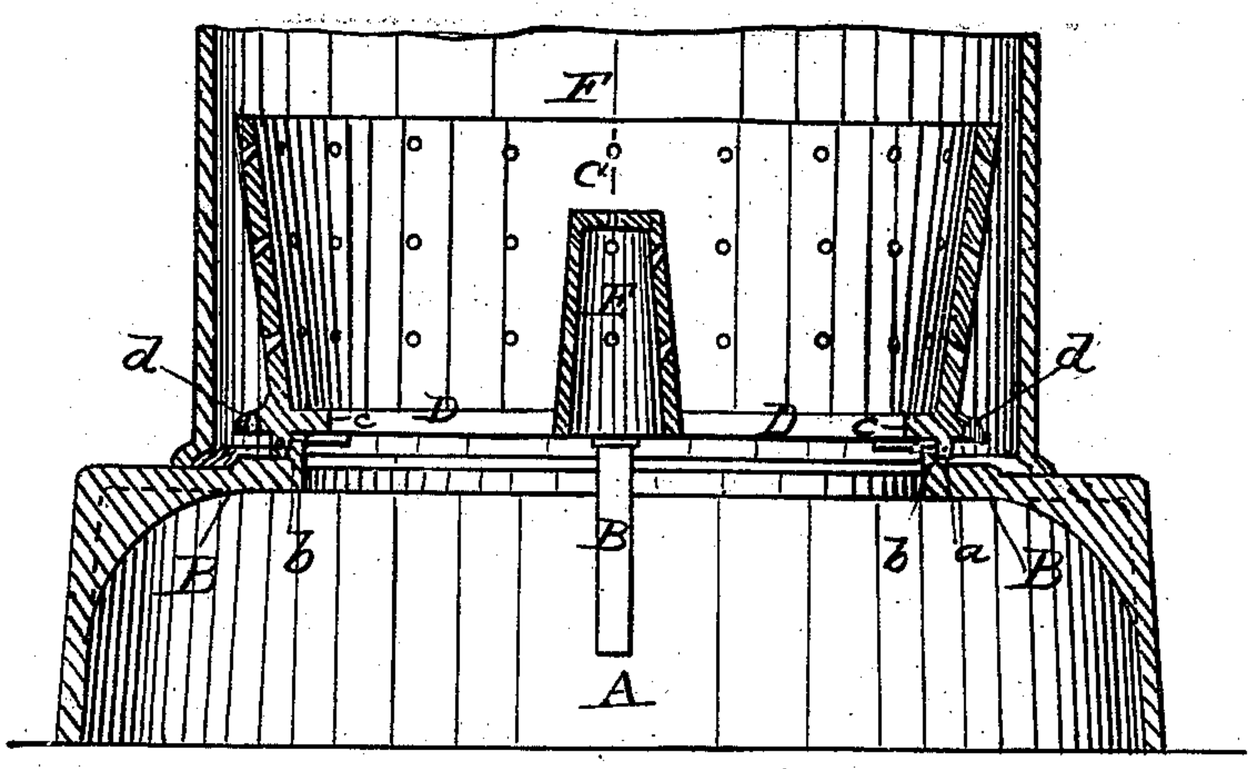


Fig. 2. Section on A-B.



Witnesses:
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Arnold Schoepf.

Inventor:
Philip J. Schopp

2 Sheets—Sheet 2.

F. J. SCHOPP.

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Fig. 3. Plan of base.

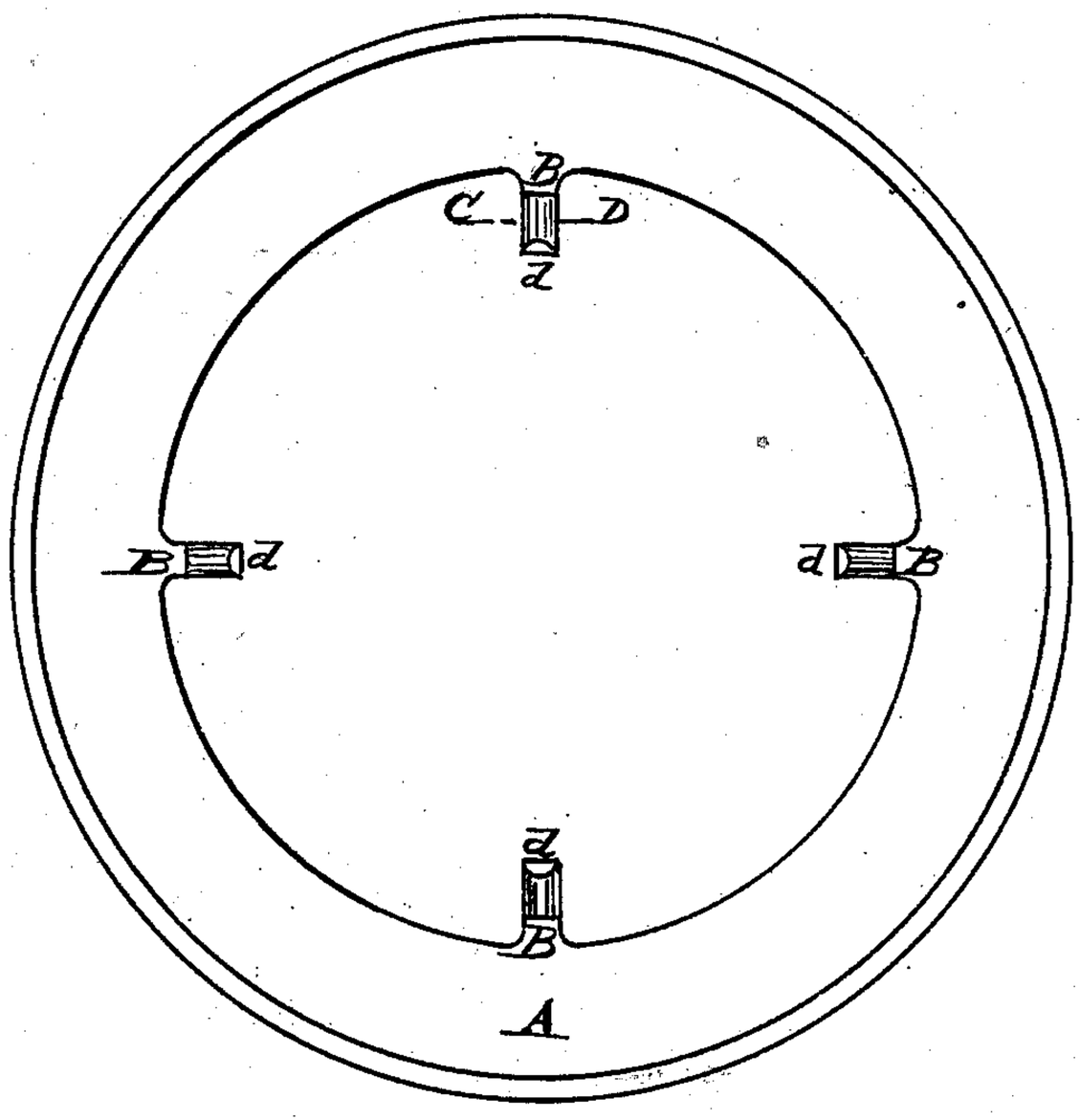
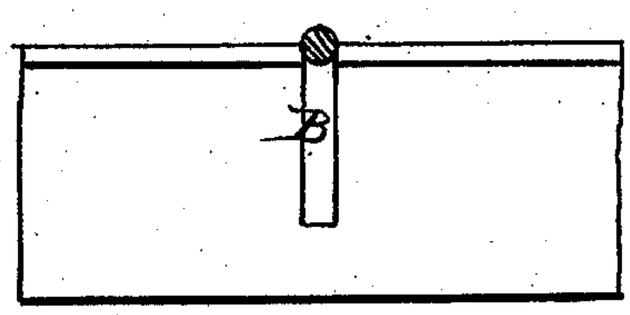


Fig. 4. Section on C-D.



Witnesses:

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Arnold Schopp

Inventor:

Philip J. Schopp

United States Patent Office.

PHILIP JACOB SCHOPP, OF LOUISVILLE, KENTUCKY.

Letters Patent No. 104,212, *dated June* 14, 1870.

GRATE AND FIRE-POT FOR HEATING-STOVES.

The Schedule referred to in these Letters Patent and making part of the same.

I, PHILIP JACOB SCHOPP, of Louisville, in the county of Jefferson, State of Kentucky, have invented a certain Improvement in Heating-Stoves, of which the following is a specification.

The first part of my invention relates to the better support and easier movement of grates placed in stoves.

The second part of my invention relates to the combination, with the grate, of a perforated conical or cylindrical-shaped receptacle or fire-pot, for coal used as fuel.

The third part of my invention relates to the combination of a perforated conical or cylindrical-shaped tube with the grate.

The object of my improvements is—

First, to effect a better support of the grate, and at the same time an easier movement, unobstructed by particles of fuel falling through the bars of the grate.

Second, to isolate the burning fuel, to some extent, from the outer wall of the stove, and prevent that wall becoming over-heated and red hot, by circulation of air between it and the fire-pot containing the burning fuel.

Third, to admit abundance of atmospheric air to all parts of the burning coal through the holes in the fire-pot and center tube, thus obtaining a better consumption of carbon and gases, a larger proportion of units of heat and saving of fuel, the draught to be regulated by dampers on the outer wall of the stove.

Fourth, to prevent the escape of the poisonous carbonic-oxide gas through the side walls of iron stoves into the room.

By the experiments of MM. Deville and Traost, French chemists, and General Morin, of the French Academy of Science, the permeability of iron heated to a high degree, by gases, has been proved conclusively.

The formation of this dangerous gas is caused by imperfect combustion and the want of oxygen contained in atmospheric air.

By my invention abundant air, already heated by coming in contact with radiating iron, is conducted to the burning coal, and, by isolating the fire-place from the outer wall, and causing a free circulation around it, the obnoxious gas, even when formed, will be carried off through the ventilating pipe before penetrating through the side walls of the stove.

With a little care the draught can be so regulated by dampers as to prevent the outer wall of the stove from getting red hot, and allow the escape of the gas.

Description of the Accompanying Drawing.

Figure 1 is a plan of the invention.

Figure 2 is a vertical transverse section on line A–B.

Figure 3, a plan of the base of a stove, showing the brackets.

Figure 4, a vertical transverse section of the brackets.

General Description.

A is the base of a stove, with four brackets, B, acting as a support to the fire-pot C.

To reduce friction, these brackets are rounded on their upper surface; they are provided with a guard, *b*, also rounded.

On these brackets rests the fire-pot C, perforated with numerous small holes, round or square, and provided around the entire circle with a depending flange, *a*, fitting to the guards of the brackets *b*.

The fire-pot C is also provided inside with a flange, *c*, to receive the grate proper D, and outside with a perforated flange, *d*, to produce more heating surface for passing atmospheric air to be forewarmed before entering the place of combustion.

This flange is also intended to form a protection to the bracket and the guards attached to it, and prevent fuel falling through the grate-bars from lodging upon it.

By means of the runner *a*, the fire-pot and grate attached to it may be turned around the entire circle, every part reached and cleaned.

Flange *c* is provided with three or more sockets, to receive and hold in its place one-half part of the grate D.

Upon the lower side of the outer ring of the grate, conical-formed projections are cast, corresponding with the size of the sockets in which they are to fit.

The grate D, of the usual construction, with plain parallel bars, is divided into two parts. One part rests on flange *c* in sockets.

To this part the cone E is attached either permanently, forming one casting with the bars, or attached to a half circle with slits to receive the projections or tenons provided for at the base of cone E, and held in its place.

This half circle is part of the center bar of the grate, and is also connected with the parallel bars vertical to the center bar.

The cone E is hollow, and perforated with holes to admit air into the very center of the burning coal.

In stoves with small fire-places the cone may be omitted. In large fire-places the number may be increased.

The other half of the fire-grate is of the usual construction, with parallel bars, and arranged to open downward, to remove ashes and cinders when necessary.

F is the outer wall or shell of the stove. It sits back from the fire-place far enough to admit the escape of gases formed and penetrating through the holes and side wall of the fire-pot.

Claim.

I claim as my invention—

The combination of the fire-pot C with the depending flange *a*, flanges *c* and *d*, grate D, cone E, base A, and brackets B, substantially as and for the purpose hereinbefore set forth.

PHILIP J. SCHOPP.

Witnesses:

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ARNOLD SCHOPP.