

D. L. STILES.

Stove.

No. 159,465.

Patented Feb. 2, 1875.

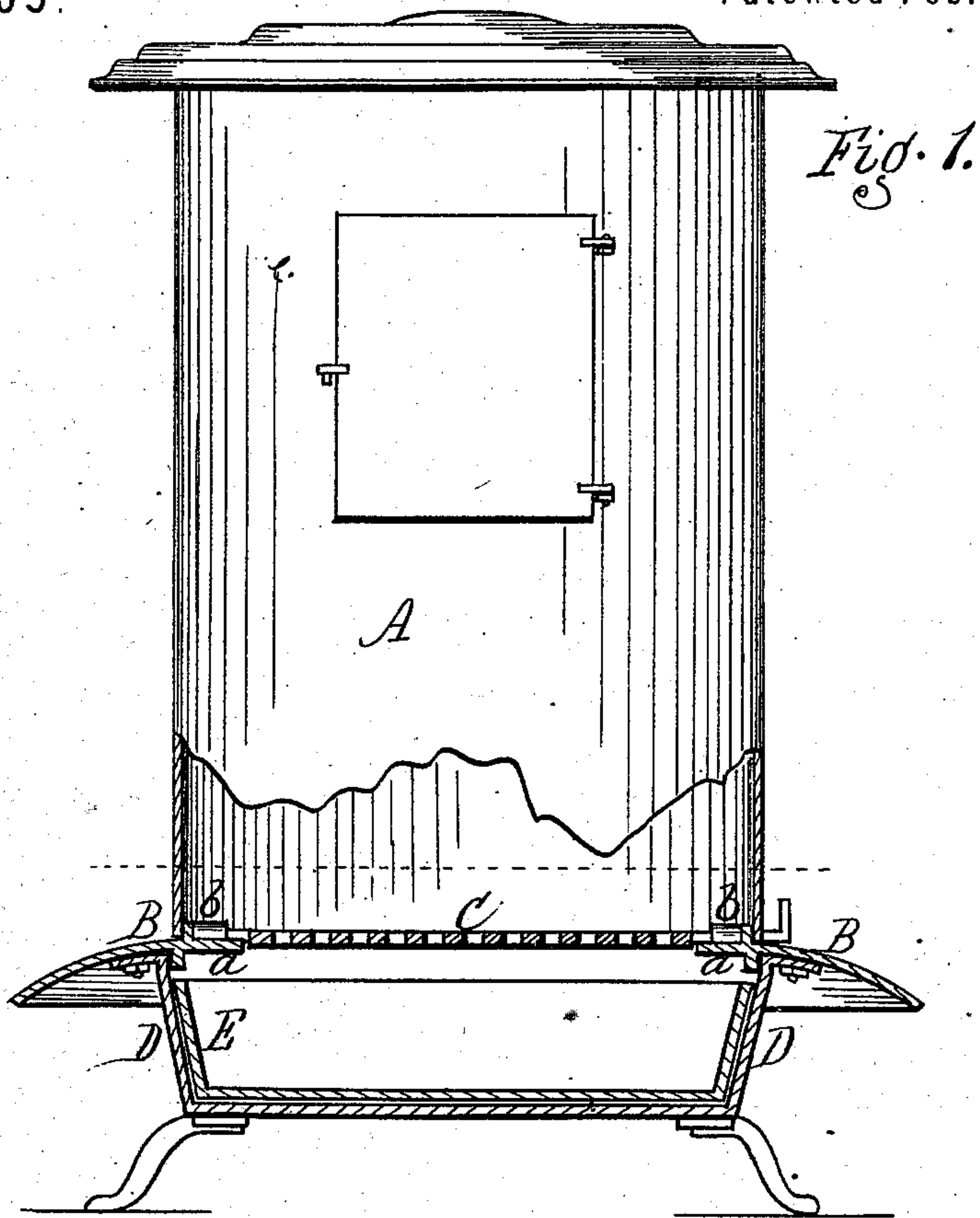


Fig. 1.

Fig. 2.

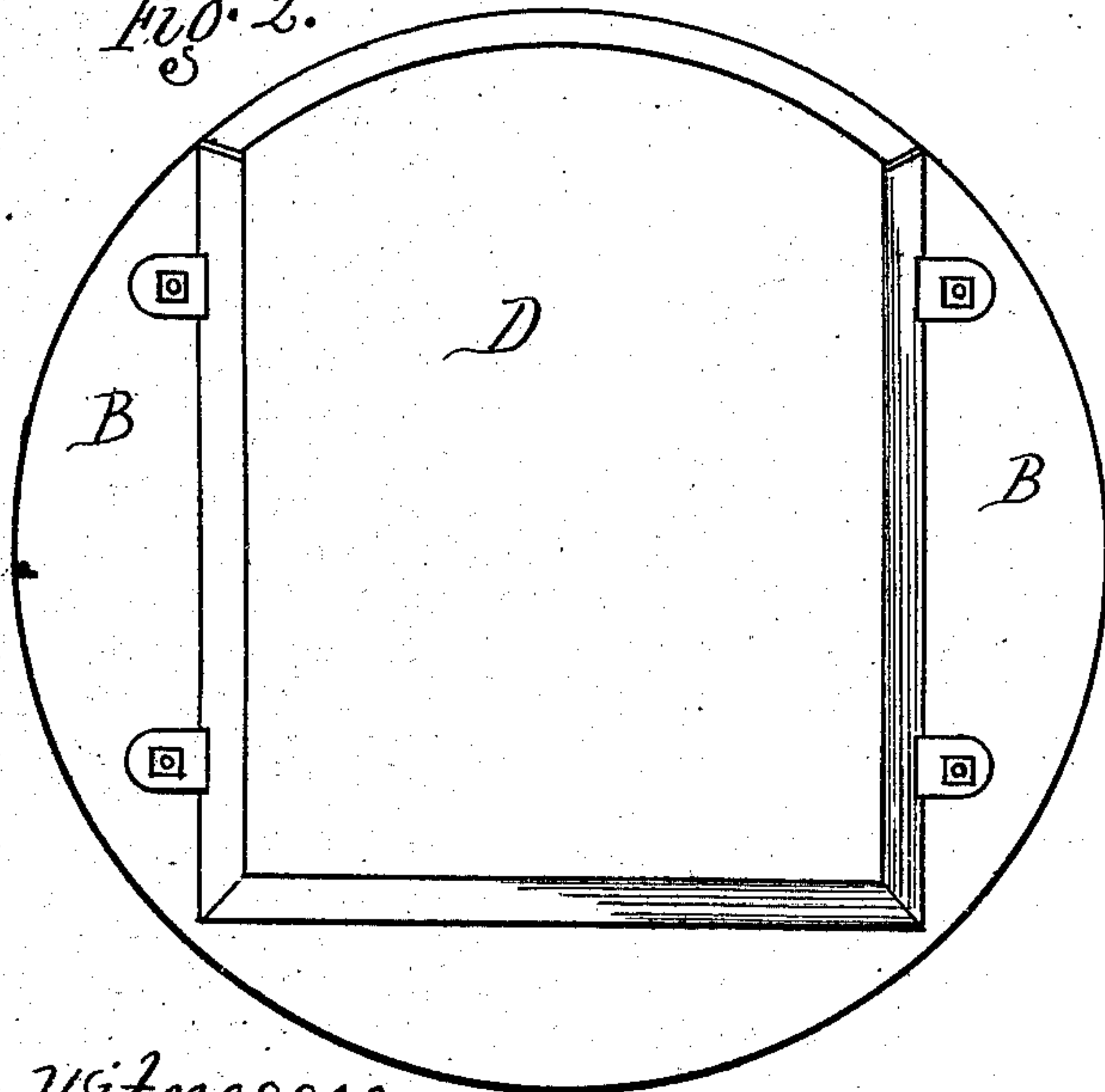
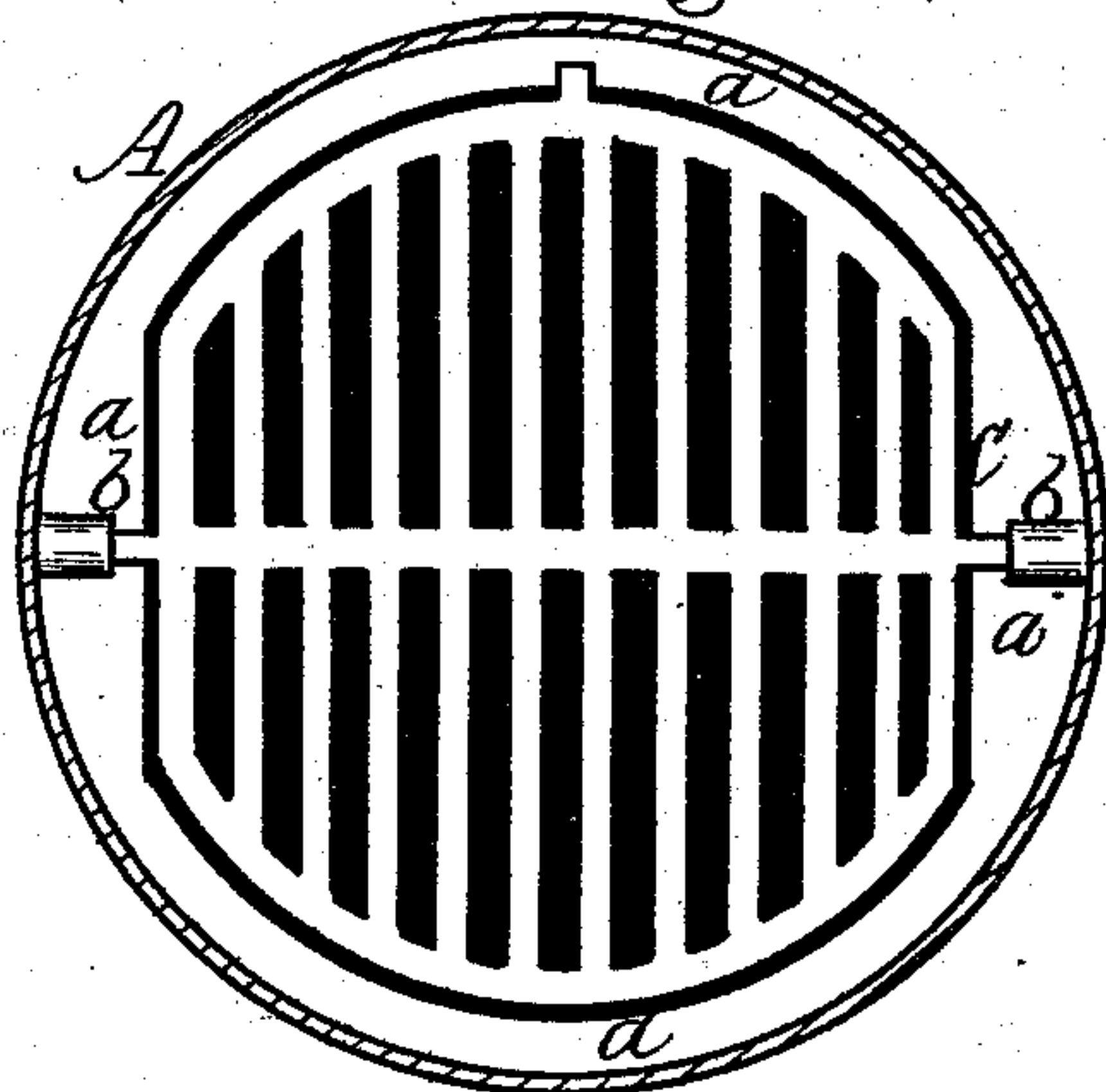


Fig. 3.



Witnesses.  
C. B. Scott.  
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# UNITED STATES PATENT OFFICE.

DAVID L. STILES, OF ROCHESTER, NEW YORK.

## IMPROVEMENT IN STOVES.

Specification forming part of Letters Patent No. 159,465, dated February 2, 1875; application filed June 20, 1874.

*To all whom it may concern:*

Be it known that I, DAVID L. STILES, of the city of Rochester, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Stoves; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings, in which—

Figure 1 is a sectional elevation. Fig. 2 is a bottom view. Fig. 3 is a cross-section.

This invention relates specially to the construction of wood-stoves. Such stoves have generally been made without a grate, and the wood has been placed directly in the bottom of the fire-chamber. The objection to this is, that the ashes accumulate in a body at the bottom, and obstruct the draft, and the wood, being partially embedded in the ashes, is imperfectly burned, and much loss of fuel ensues. The ashes are also difficult to clean out, and much dust is necessarily raised.

I employ in my stove a grate similar to a grate in a coal-stove, and also use an ash sink or pit, with a drawer therein for receiving the ashes, so that the draft is unobstructed at all times, the wood burns clean, and the ashes are readily removed without dust.

These features are general, and are connected with my invention only in the purpose to which they are applied, viz., in a wood-stove instead of a coal-stove.

This invention consists in the combination, in a stove, of a base having the inwardly-projecting flange, with lugs thereon, to secure the journals of the grate, and vertically-projecting flanges to secure the casing and base to the stove.

A is the cylinder of an ordinary wood-stove. B is the base; C, the grate, and D the ash-sink. The base and the ash-sink are made in two separate parts, and the ash-sink is attached on the under side of the base by bolting or otherwise, as shown in the bottom view, Fig. 2. A convenient means of attachment is by flanges or lugs, as shown. By thus making them separate instead of casting them both in one piece, as is usually done in coal-stoves, they can be separated at any time, and

either part replaced without discarding the other part. The base is provided on the inside with a horizontal flange, *a*, located at the base of the fire-chamber, and inclosing an opening, within which is located the grate C, which stands at about the same level as the flange. The grate swings free in the opening, and has the bearings *b b* for its journals located on the flange *a*, as clearly shown in Fig. 3. This flange serves an important purpose in two ways: First, it serves as a ledge to support the wood which is placed in the fire-chamber, and thereby prevent such an accumulation of weight as might tilt the grate and let the wood down; and, second, it serves to throw the ashes inward toward the center, so that it will be sure to fall into the pan beneath without escaping around the sides.

In the respect first named it is quite important in a wood-stove, since the pieces of wood are frequently short and of considerable weight, and, in being thrown into the stove and striking the grate, they would displace it. This is more apparent when it is considered that the sticks of wood are usually inserted endwise through the door, and the lower ends usually strike beyond the center of the grate.

The grate can be made smaller than in a coal-stove, since the combustion is more free and perfect, and the wood will burn perfectly beyond the surface of the grate, as no great accumulation of ashes will rest there, but they will fall through into the ash-sink.

The front end of the ash-sink is left open, and into this slides the ash-pan E. The pan is made flaring at its sides, and of a size to fill the whole cross-area of the ash-sink. Its sides and ends, therefore, project inward and beyond the inner edges of the flange, and are overlapped by the latter, and all the ashes will be discharged into the pan without escape at the sides, thus keeping the ash-sink clean. The front end of the ash-pan may have a guard or cover, which closes up against the open end of the ash-sink and shuts it, thereby preventing escape of dust into the room.

A wood-stove constructed as above described is more effective in action than those now in use.

A particular advantage in forming the base



and ash-sink in separate parts is, that the flange *a* can thus be formed upon the base, which could not be if they were cast together.

The ash-sink can also be made of larger area than the cylinder of the stove, which could not be if cast together.

The enlargement of the sink is desirable to enable a pan of larger size than the grate-opening to be used.

I am aware that the fuel-supply chamber of a stove for burning coal has been bolted to a horizontal flange projecting from the sides of the stove-casing; but such is not my invention.

Having thus described my invention, I do not claim a grate in a wood-stove; nor do I

claim a base and an ash-sink constructed otherwise than as above described.

What I claim as new is—

The combination, in a stove, of the base-ring B, having the inwardly-projecting flange *a*, with lugs *b* thereon, to secure the journals of the grate, and vertically-projecting flanges to secure the casing A and base D, as and for the purpose described.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

DAVID L. STILES.

Witnesses:

R. F. OSGOOD,

E. B. SCOTT.