I. D. SMEAD.

HEATER.

No. 183,075. Patented Oct. 10, 1876.

Fig. 1.

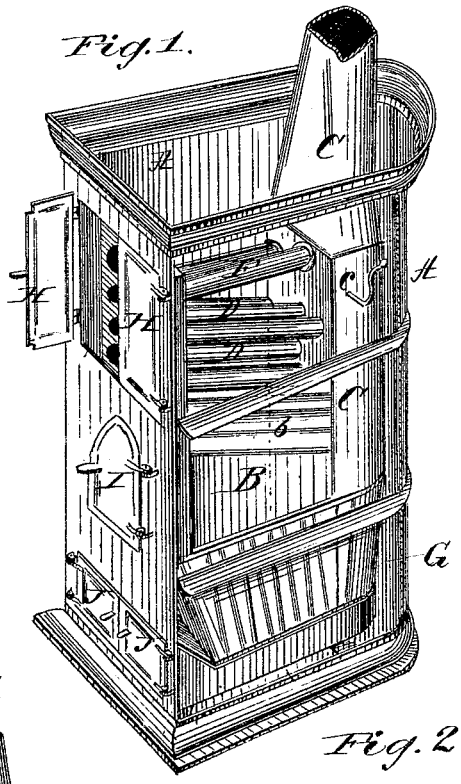


Fig. 3.

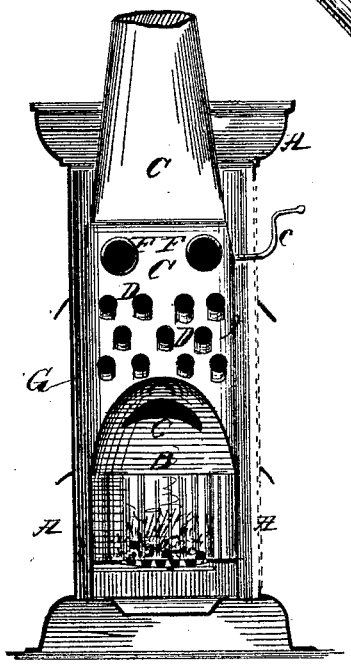
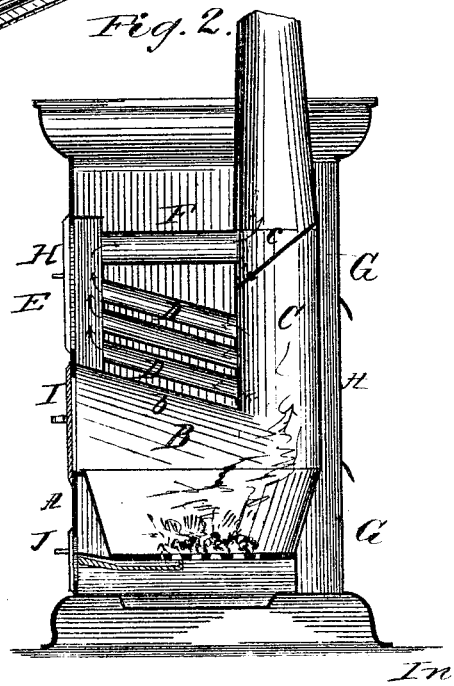


Fig. 2.



Witnesses
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UNITED STATES PATENT OFFICE.

ISAAC D. SMEAD, OF BLOOMINGTON, ILLINOIS.

IMPROVEMENT IN HEATERS.

Specification forming part of Letters Patent No. **183,075**, dated October 10, 1876; application filed September 4, 1876.

To all whom it may concern:

Be it known that I, ISAAC D. SMEAD, of Bloomington, Illinois, have invented certain new and useful Improvements in School-Room Heaters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being made to the accompanying drawing, forming a part of this specification, and in which—

Figure 1 is a perspective view of my improved heater, with one side of the case broken away to show the internal arrangement of parts. Fig. 2 is a longitudinal vertical section. Fig. 3 is a transverse vertical section.

This invention consists of certain improvements in the construction of school-room heaters, as will be hereinafter fully described, and pointed out in the claim.

A in the drawing represents the outer casing of the heater, which is made of cast-iron formed in sections, as clearly shown in the drawing, said sections being secured together in any convenient manner. B represents the fire-box, the top *b* thereto being made slanting from the front of the heater to the rear thereof, so that the smoke is forced down to the body of burning fuel, for the purpose of igniting the smoke and consuming the gas that would otherwise escape. C is the main vertical flue, communicating directly with the rear of fire-box, into which the smoke passes, and from which it is drawn through a series of inclined tubes, D, into the front flue or chamber E, and thence through the large tubes F into main flue C, from whence it is carried off. The tubes D incline downward from the front of heater to the main flue C, so that they will not fill with soot, as by their inclination they will easily clean themselves. *c* is a damper, arranged in the main flue between the openings communicating with the inclined tubes and the openings of the large tubes F. This damper is closed, so as to allow the smoke to pass through the inclined tubes, as above described, and said damper allowed to be turned, so as to give a direct draft up through the main flue, when the fire-box door is opened, and thereby prevent the smoke coming out into the room.

Any desired apparatus may be employed to connect the fire-box door with the damper *c* in the main flue, whereby the damper will be opened, when the fire-box door is opened, for preventing the smoke coming into the room.

H are the upper doors, which are to be opened when it is desired to clean out the flues, in case they should get stopped up. I represents the fire-box door, and J the doors to the ash-box or grate.

The cold air is admitted through suitable openings in the bottom of the heater into the space G, surrounded by the outer case A, from whence it passes upward, and is heated by coming in contact with the fire-box and series of tubes D F, and finally escaping through top of heater into the room.

It will be observed that the main vertical flue C, communicating directly with the rear of fire-box, allows the soot from the inclined smoke-tubes to fall directly back into the fire-box.

I claim as my invention—

The combination, in a portable school-room heater, of the fire-box B, having slanting top *b*, main vertical flue C, communicating directly with rear of fire-box, inclined smoke-tubes D, flue or chamber E, and horizontal tubes F, the several parts being constructed and arranged in the manner substantially as and for the purpose specified.

ISAAC D. SMEAD.

Witnesses:

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