E. SPRAGUE.

Heater.

No. 40,366. Patented Oct. 20, 1863.

Fig. 2.

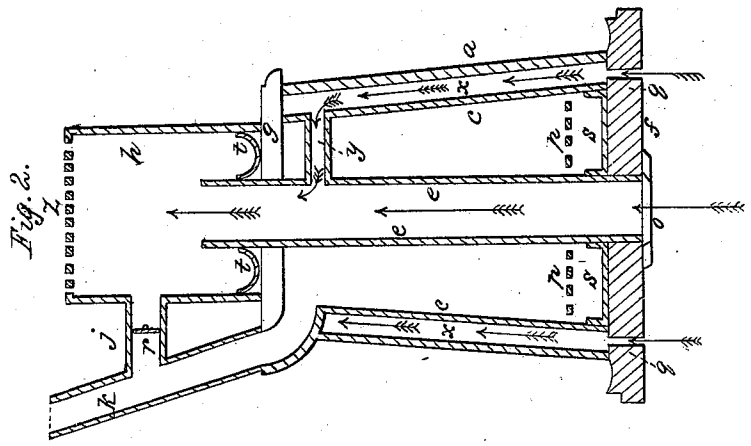
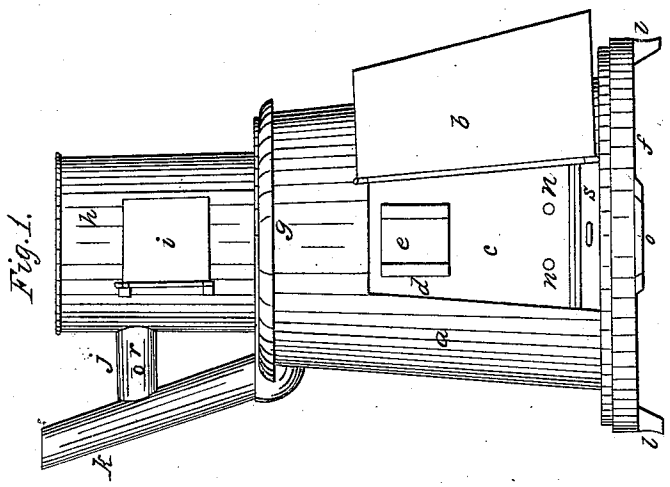


Fig. 1.



Witnesses:

James F. Johnston

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UNITED STATES PATENT OFFICE.

EDWIN SPRAGUE, OF ALLEGHENY CITY, PENNSYLVANIA.

IMPROVEMENT IN HEATERS.

Specification forming part of Letters Patent No. **40,366**, dated October 20, 1863.

To all whom it may concern:

Be it known that I, EDWIN SPRAGUE, of Allegheny City, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Heaters for Churches, &c.; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in furnishing a stove with an inner and outer air-chamber, connected with a receiving-chamber, the whole being constructed arranged, and operating in the manner hereinafter described.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

In the accompanying drawings, Figure 1 is a side view of the heating apparatus. Fig. 2 is a sectional view of the same.

a represents the outside casing, which surrounds the body *c* of the stove.

b represents the doors of the casing *a*.

e represents a pipe, which is placed in the center of the stove. This pipe forms the inner air-chamber, and is connected with the outer air-chamber, *x*, by means of a pipe, *y*.

f represents the bottom, and *g* represents the top, of the stove.

h represents the receiving-chamber, which is connected with the smoke-pipe *k* by a branch pipe, *j*, which is furnished with a damper, *r*.

t represents a water-vessel, which is placed on the top *g* and around the pipe *e*.

q represents air-passages which lead into the air-chamber *x*.

o represents a register, which is used for regulating the admission of cold air into the pipe *e*.

p represents the grate of the stove.

s represents the ash-pans.

l represents the feet of the stove.

d represents the fire-door.

n represents poker-holes.

i represents a door leading into the receiving-chamber *h*.

z represents a register placed on the upper end of the receiving-chamber *h*.

It will be observed that two or more pipes, similar to the pipe *y*, may be used for connecting the chamber *x* with the pipe *e*, and it will also be observed that the ash-pans *s* and grate *p* are made so as to surround the pipe *e*.

The operation of my improvement is as follows, having all things constructed and arranged as herein described and represented: I place the heating apparatus in the basement of the church, and connect the smoke-pipe to the ordinary flue of the building, and I also connect the receiving-chamber *h* to a register placed in the floor of the room above the basement, by means of a pipe, or by making the receiving-chamber *h* of sufficient height to reach up so that it may be connected to the register in the floor above. I then make a fire in the stove so that it will surround the pipe *e*. I then open the register *o* at the bottom of pipe *e*, so that it will admit the desired quantity of air into the pipe *e*. The air thus admitted becomes heated as it passes up through the pipe *e* into the receiving-chamber *h*. The air which passes into the chamber *x* through the openings *q* is heated by the body *c* of the stove. This heated air passes up and through pipe *y* into pipe *e*, and from it into the receiving-chamber *h*, from which the heated air is admitted into the upper room or body of the church by means of a suitable register.

Water is placed in the vessel *t* for the purpose of imparting a moisture to the heated atmosphere in the room.

The admission of the heated air into the room is regulated by the use of the register and the damper *r*. When the room is too much heated, the damper *r* is turned so as to allow the heated air to escape through the branch *j* into the smoke-pipe *k*.

Having thus described the nature, construction, and operation of my improvement, what I claim as of my invention, is—

The arrangement of the pipe *e*, register *o*, chamber *x*, pipe *y*, receiving chamber *h*, branch *j*, damper *r*, and vessel *t*, the whole being constructed, arranged, and operating substantially as herein described, and for the purpose set forth.

EDWIN SPRAGUE.

Witnesses:

JAMES J. JOHNSTON,

JOHN HAMILTON.