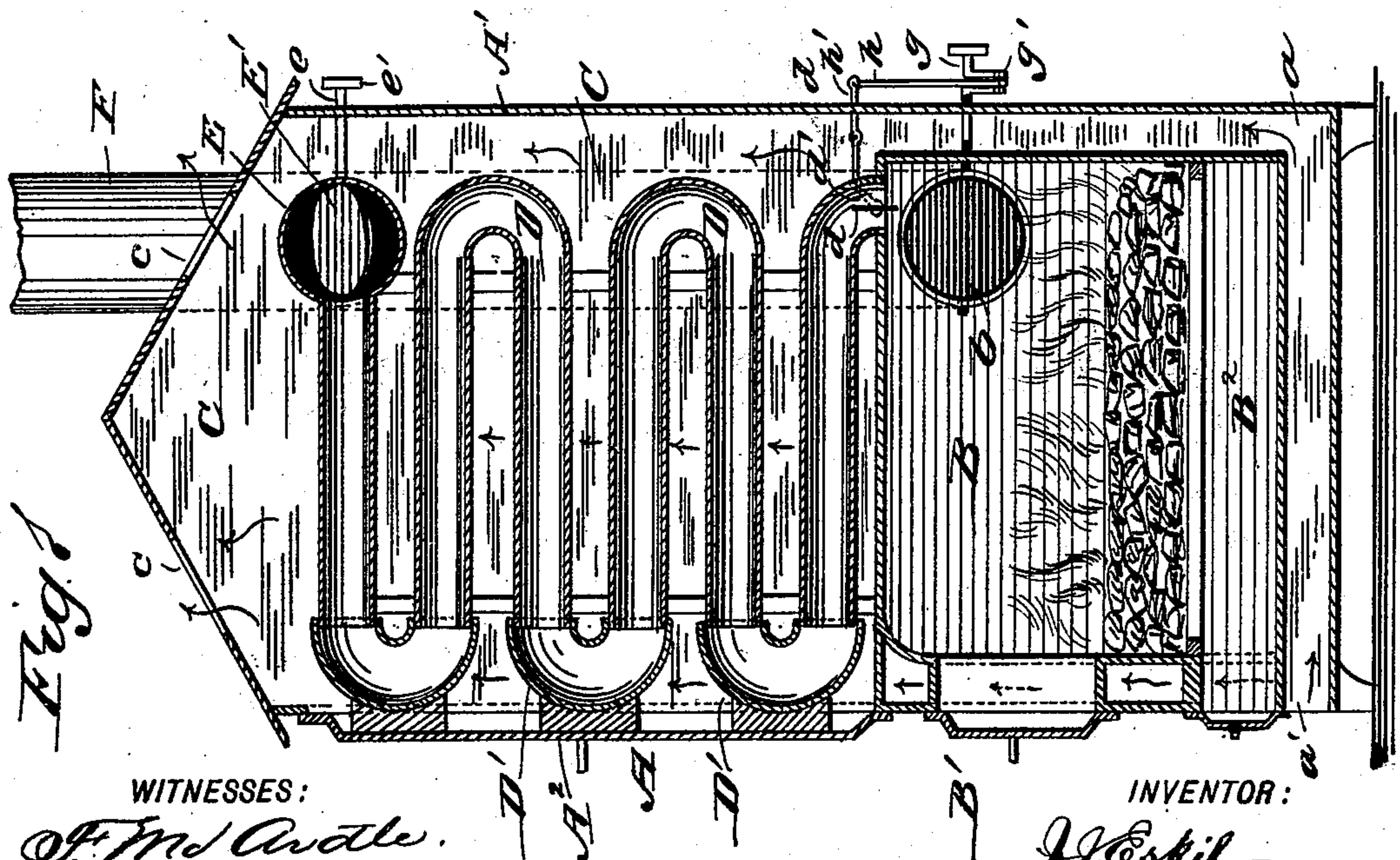
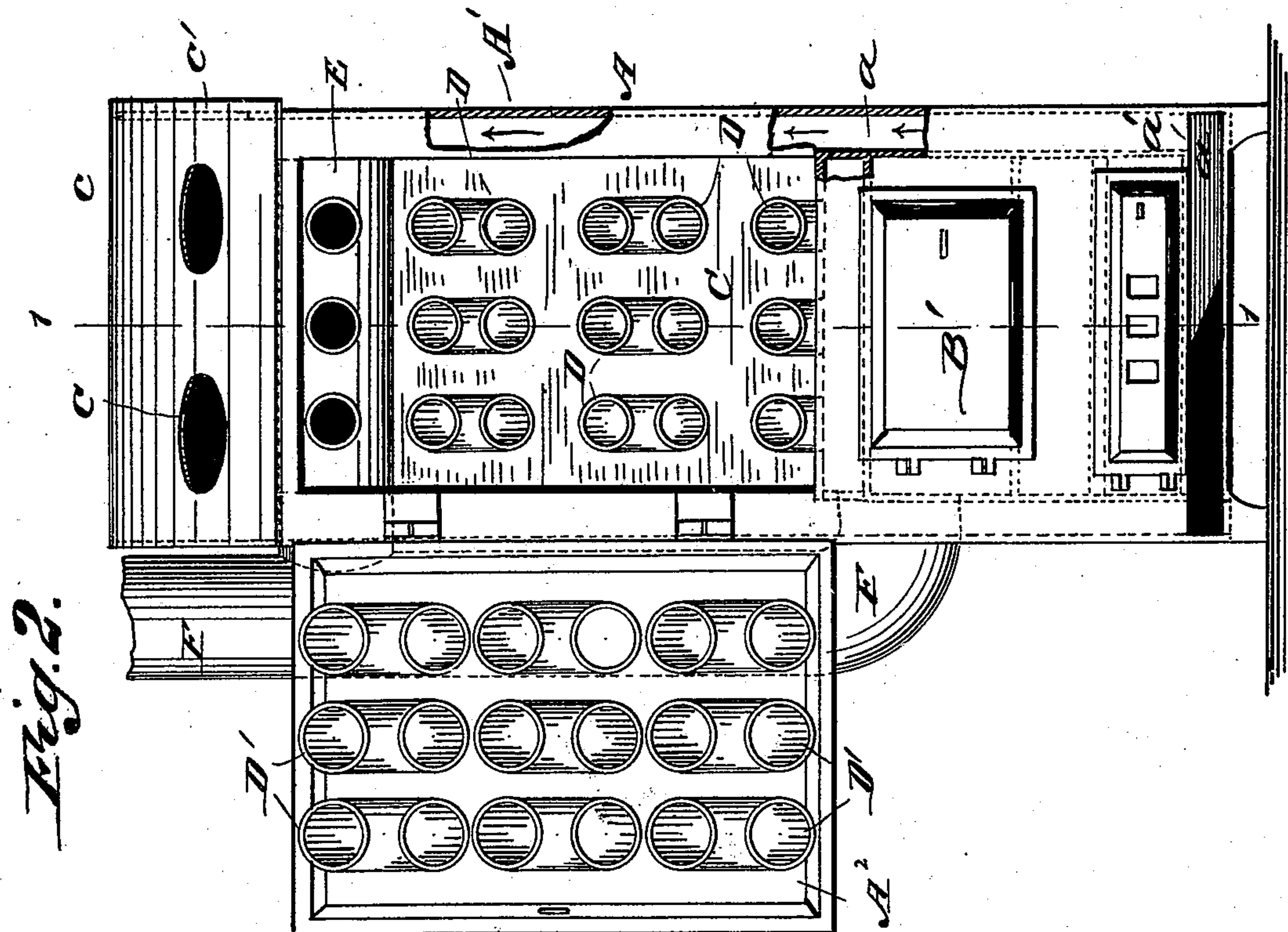


(No Model.)

J. J. ESKIL.  
STOVE.

No. 512,689.

Patented Jan. 16, 1894.



WITNESSES:  
*F. M. Apple*  
*C. Bedgwick*

INVENTOR:  
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ATTORNEYS



# UNITED STATES PATENT OFFICE.

JORGEN J. ESKIL, OF IRON MOUNTAIN, MICHIGAN.

## STOVE.

SPECIFICATION forming part of Letters Patent No. 512,689, dated January 16, 1894.

Application filed March 7, 1893. Serial No. 464,936. (No model.)

*To all whom it may concern:*

Be it known that I, JORGEN J. ESKIL, of Iron Mountain, in the county of Dickinson and State of Michigan, have invented a new and Improved Stove, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of stoves which heat by direct radiation, and which also eject into a room a current of hot air, and the object of my invention is to produce a stove that will give out a large amount of heat in proportion to the amount of fuel consumed.

To this end my invention consists in a stove constructed substantially as hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar letters of reference indicate corresponding parts in both the figures.

Figure 1 is a broken vertical section of the stove embodying my invention on the line 1—1 of Fig. 2; and Fig. 2 is a broken front elevation of the stove with the door to the hot air chamber open.

The stove A is provided with an outer casing A' which incloses the fire box B, the fire box being located in the lower part of the stove and having a door B' opening through the outer casing, and a flue a is thus formed extending around the fire box, the flue opening from the outer air at the point a' beneath the ash box B<sup>2</sup>, and into the hot air chamber C, above the fire box. The cold air will thus enter the lower portion of the flue and as it becomes heated will rise and pass out through the openings c in the top of the stove. The front portion of the stove is provided with a door A<sup>2</sup> which swings outwardly, and which opens directly into the hot air chamber C. Opening from the fire box B and extending upwardly through the hot air chamber C are coils of pipe D, which terminate at their upper ends in the smoke box E, which in turn is connected with the funnel or smoke stack F. The outer ends of the coils of the pipes D are provided with elbow couplings D' which are fixed to the door A<sup>2</sup>, and which shut closely upon the pipes D so that when the door is opened, the couplings will be removed from the pipes, thus affording easy access to the

pipes when they are to be cleaned. The funnel F is also connected with the fire box B and the entrance to the funnel is controlled by a damper b. A damper d is also pivoted in the lower entrance to the pipes D, and the dampers d and b are so connected that they may be simultaneously operated, one being opened when the other is closed. This is accomplished by the following mechanism: A crank shaft g is fixed to the damper b and extends outwardly through the stove casing, and pivoted to the crank g' of the shaft is a rod h, which is pivoted to the outer end of a rod h' said rod being centrally pivoted in the stove casing, and having its inner end connected with a crank d' of the damper d. It will thus be seen that when the shaft g is turned to open the damper b, the rods h and h' and the crank d' will be actuated, thus closing the damper d.

I do not confine myself, however, to the mechanism above described for operating the two dampers, as any suitable means may be employed that will close one damper when the other is opened. The smoke box E is supported in the upper portion of the stove and connects with the funnel or smoke stack F and pivoted in the smoke box is a damper E', provided with a suitable rod e extending outwardly through the stove casing, so that the damper may be operated thereby.

The stove operates as follows: After a fire is well started in the fire box B, the damper b is closed, and the smoke and heat pass upward through the pipes D, and into the smoke box E, and from thence the smoke passes into the smoke stack F. It will thus be seen that by regulating the damper in the smoke box E, the heat from the fire may be all utilized by passing it through the series of coils, so that nothing but smoke will escape into the smoke stack. When there is a fire in the stove, the cold air enters the lower portion of the flue a at the point a' and as the air in the upper portion of the stove above the fire box becomes heated, it passes out through the openings c into the room, thus drawing in the cold air and keeping up a constant circulation, thereby giving to the room a very even temperature. The device is primarily intended for use as a stove, but it is obvious



that it may be used as a furnace and connected with various rooms by pipes in the ordinary manner. When used as a furnace, it may be inclosed by a brick wall, and may be  
5 provided with a door A<sup>2</sup> and couplings D' at each end.

I do not confine myself to any particular number of coils D, but enough should be used to utilize all the heat from the fire box. The  
10 stove may be made in any desired shape and may be ornamented in any desired manner.

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

15 1. The combination with the case, and the pipes therein, of an outwardly swinging door having couplings thereon to close over the ends of the pipes, substantially as described.

20 2. The combination with a casing, and a fire box in the lower part of the casing, of coils of pipe connected at one end with the fire box and at the other end with the smoke stack, said coils being provided with removable elbow couplings, at one end and a door to which  
25 the said elbow couplings are secured, substantially as described.

3. A stove, comprising a case, a fire box in the lower part of the case having an opening adapted to connect with the smoke stack, an air chamber above the fire box having open- 30 ings through the top into the outer air, a flue opening from beneath the fire box and connecting with the air chamber, a transverse smoke box mounted in the upper portion of the air chamber and adapted to connect with 35 the smoke stack, said smoke box having a suitable damper therein, coils of pipes located within the air chamber and connected at their lower ends with the fire box, and at their upper ends with the smoke box, a door hinged 40 to the stove casing and provided with elbow couplings adapted to engage the ends of the pipe coils, a damper located in the main opening from the fire box, dampers pivoted in the lower ends of the pipes, and a lever mechanism for simultaneously operating the fire box 45 damper and the dampers in the pipes, all substantially as described.

JORGEN J. ESKIL.

Witnesses:

R. TH. MILLER,  
A. H. HUNTING.