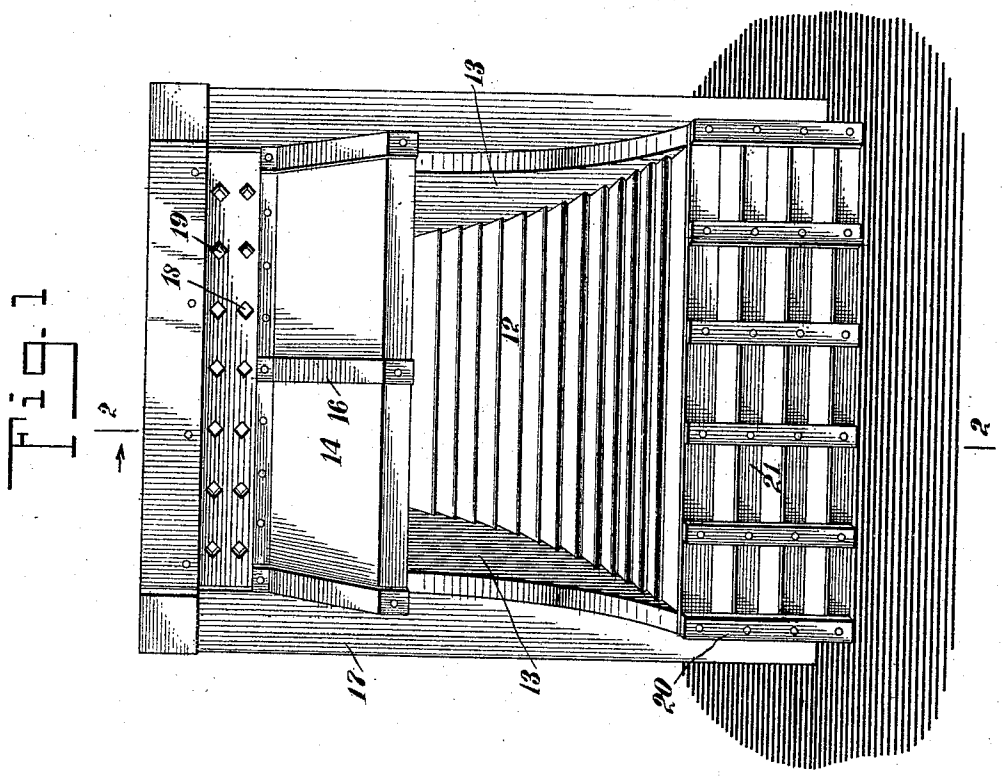
J. T. REZNOR.

REFLECTOR STOVE.

APPLICATION FILED JULY 21, 1909.

**956,420.** **Patented Apr. 26, 1910.**

Fig. 1



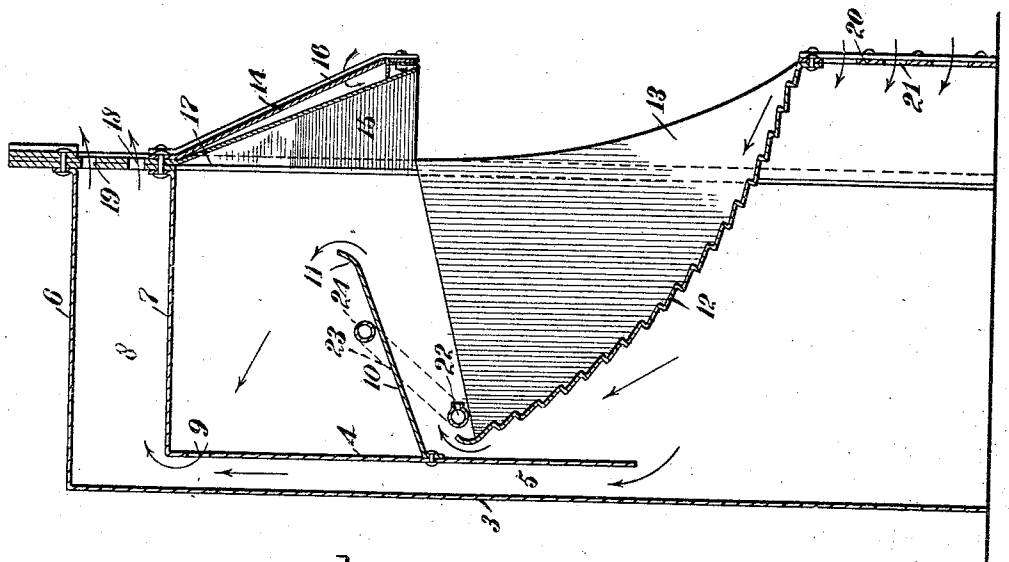




Fig. 2

WITNESSES

J. A. Brophy

W. Harrison

INVENTOR

Jessie T. Reznor

BY Munn & Co

ATTORNEYS

ANDREW B. GRAHAM CO., PHOTO-LITHOGRAPHERS, WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

JESSIE T. REZNOR, OF MERCER, PENNSYLVANIA.

## REFLECTOR-STOVE.

956,420. Specification of Letters Patent. Patented Apr. 26, 1910.

Application filed July 21, 1909. Serial No. 508,694.

*To all whom it may concern:*

Be it known that I, JESSIE T. REZNOR, a citizen of the United States, and a resident of Mercer, in the county of Mercer and State of Pennsylvania, have invented a new and Improved Reflector-Stove, of which the following is a full, clear, and exact description.

My invention relates to reflector stoves, my more particular purpose being to provide a stove to be heated by gas, vapor, or other combustible aeriform body, the construction of the stove being such that the heat when produced is distributed advantageously and diffused as nearly equally as possible.

My invention further relates to various details in stove construction, applicable alike to my improved stove and to stoves of other kinds, for the purpose of increasing the general efficiency thereof and of promoting simplicity, cheapness of construction, and ease of operation.

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

Figure 1 is a front elevation of my improved stove complete; and Fig. 2 is an enlarged vertical section upon the line 2—2 of Fig. 1, looking in the direction of the arrow, and showing the relative positions of various parts, and also indicating by arrows the directions followed by the several air currents.

At 3 is shown a back sheet and at 4 a false back, a space 5 being left intermediate the back sheet and the false back, and serving as a flue through which cool air may pass upwardly so as to avoid undue heating of the back sheet 3, and danger of fire. The back 3 is provided with a top 6 and the false back 4 with a top 7, these tops being parallel with each other and the space 8 intermediate them serving as a flue and forming a continuation of the flue 5. The false back 4 is provided with holes 9 through which heated air can readily pass.

At 10 is a flame plate which is mounted securely upon the false back 4 and is provided with an upturned edge 11 slightly rounded.

A heat reflector 12 is made of sheet metal and is corrugated, the general form of this heat reflector, as seen in cross section, being arcuate as indicated in Fig. 2. Connected with opposite sides of the heat reflector and integral with it are side plates 13. The heat reflector including its two sides is made preferably of copper and polished to a high degree.

At 14 is an outside hood and at 15 is an inside hood. The inside hood 15 protects the outside hood 14 from the direct effects of the heat, so that the hood 14 may receive a highly smooth finish, which lasts a long time. Ribs 16 are connected with the outside hood 14 and by aid thereof serve to support the inside hood 15. Cool air from the outside circulates freely between the outside hood and the inside hood. The front plate is shown at 17 and is provided with two rows of air holes 18, 19. At the bottom of the reflector plate 12 is a grid 20, having generally the form of a number of crossed bars, the interstices 21 of this grid serving as holes for admitting air.

At 22 is a burner which is connected by a pipe 23 with a superheater 24.

The operation of my device is as follows: The burner 22 being lighted, the flame goes upwardly from it and extends parallel with the flame plate 10, bending to the right according to Fig. 2, and following the under side of this plate to a point at or about the upturned edge 11. The air currents supplied over and under the flame afford the means for perfect combustion. The heat from the flame and from the flame plate 10 is radiated downwardly, and striking the reflector plate 12 is diffused by secondary radiation so as to heat the room. In doing this the various parts above described, being of metal, become heated to a greater or lesser extent by conduction and being thus heated they radiate heat in all directions. The air flows into the interstices 21 at the bottom and becomes heated more or less as it rises, following as it does, the corrugated surface of the reflector plate 12. A portion of this air passes upwardly through the flue 5 intermediate the back plate 3 and inner back 4, and becomes heated more and more as it rises. Another portion of the air passes obliquely upward and over the top of the reflector plate 12 into proximity to the flame and the flame plate. This air, like the flame, follows a path parallel with the under surface of the flame plate 10 and escaping from the upturned edge 11 it passes obliquely upward therefrom to the left according to

Fig. 2, passing through the holes 9 where it joins the cool air passing directly upward through the entire length of the flue 5. All of the air just mentioned passes through the flue 8 and out through the holes 18, 19 into the room. The flame from the burner 22 in following the under side of the flame plate 10, is directed toward the inner hood 15, which is thus heated partly by radiation from the flame and partly by the drafts of hot air accompanying the flame. Between the inner hood 15 and the outer hood 14 is an air space, the air in which also becomes heated. The inner hood 15 serves to some extent as a reflector and as such directs radiant heat downwardly against the surface of the reflector plate 12, this heat being thence, by secondary radiation, diffused into the room.

I have found the construction above described very economical and uniform in its distribution of heat.

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

In a stove, the combination of a back plate, a false back disposed adjacent to said back plate and spaced therefrom so as to leave between said back plate and said false back a space adapted to serve as a flue, said false back having holes which open directly into said flue, a flame plate mounted upon said false back and inclined obliquely upward and away therefrom to a point some little distance obliquely downward from said holes for the purpose of deflecting air and burned gases away from said holes and liberating said air and burned gases obliquely below said holes, a top for said back plate, and a top for said false back, said tops being disposed horizontally and parallel with each other and spaced from each other, the space intermediate said tops constituting a flue which communicates with said first-mentioned flue, said top of said false back being disposed above said flame plate and spaced therefrom, a front plate connected with said tops and provided with openings through which hot air may be discharged, and a burner disposed adjacent to said false back and below said flame plate.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JESSIE T. REZNOR.

Witnesses:
T. W. McClain,
H. E. Barr.