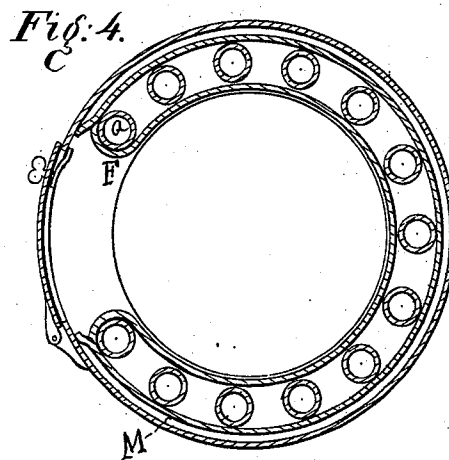
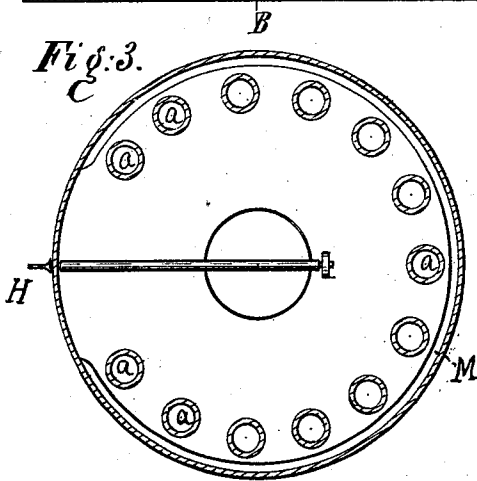
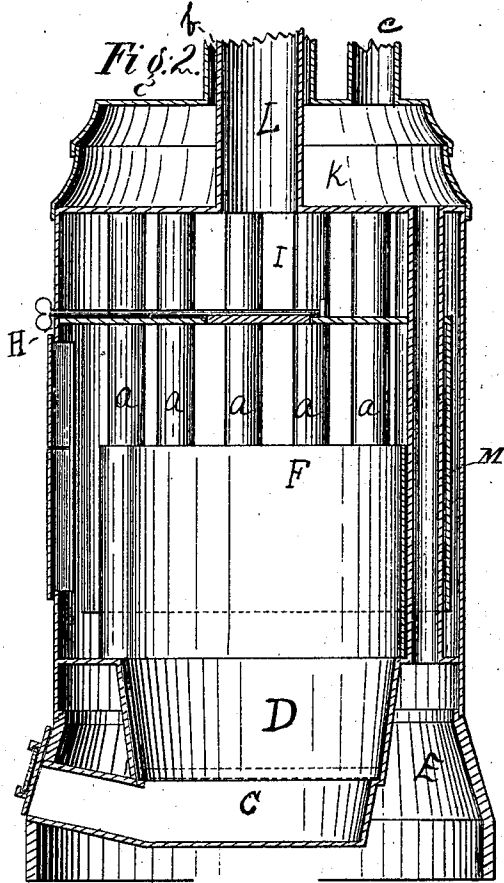
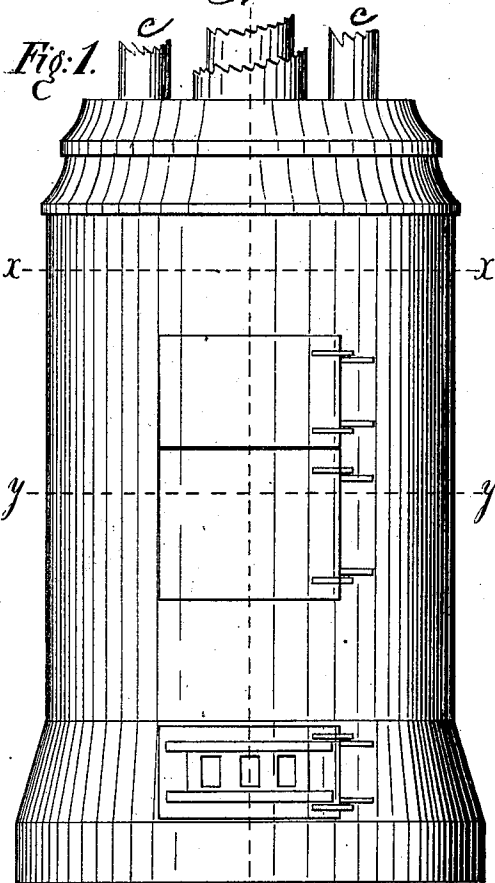


A. T. LANPHERE.

HEATER.

No. 173,173.

Patented Feb. 8, 1876.



WITNESSES:

Geo. H. Milburn.
Geo. C. Jacobs

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UNITED STATES PATENT OFFICE.

ALVIN T. LANPHERE, OF COLDWATER, MICHIGAN.

IMPROVEMENT IN HEATERS.

Specification forming part of Letters Patent No. 173,173, dated February 8, 1876; application filed November 6, 1875.

To all whom it may concern:

Be it known that I, ALVIN T. LANPHERE, of Coldwater, in the county of Branch and State of Michigan, have invented certain new and useful Improvements in Heaters and Stoves; and I do hereby declare that the following is a full, clear, and exact description thereof, that will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

The same letters and figures of reference are used to indicate the corresponding parts.

After describing the invention, its nature and extent will be shown in the claims.

The object of my invention is to provide a cheap and economical heating-stove for the use of halls, school-rooms, churches, &c., in which wood can be burned. Coal can be used in my heater, if desired; but its main design is for those sections of the country where wood is principally used for fuel.

Figure 1 is a perspective view; Fig. 2, a vertical section through the line A B. Fig. 3 is a transverse sectional view through the line *x x*, and Fig. 4 is a similar view through the line *y y*.

C is the ash-pit; D, the fire-box and chamber. E is the cold-air chamber surrounding the ash-pit and fire-box. F is a lining of cast-iron covering the hot-air pipes *a a*, and extending something more than one-half the distance from the bottom to the top of the fire-chamber. I is the smoke-chamber, which communicates with the fire-chamber by means of the damper H. M is a curtain of sheet-iron placed between the hot-air tubes and the outside of the heater, and extending rather more than half-way down from the top to the bottom of the fire-chamber. K is the hot-air chamber. The hot-air pipes *a a* conduct the air from the cold-air chamber E to the hot-air chamber K. *c c* are hot-air cylinders leading from the hot-air chamber to any apartments which it is desired to heat. *b* is an outer cylinder surrounding the smoke-pipe L, and also may be connected with any apartment it is desired to heat.

In using wood no grate is needed between the ash-pit C and the fire-pot D.

The operation of my heater I will now describe. Wood is burned in the fire-pot. Gradually the air in the hot-air tubes *a a* is heated, which causes a current to pass to the hot-air chamber K. The hot-air cylinders *c c* and *b* conduct the hot air wherever desired. As the heat increases the damper H is partially or wholly turned. This causes the heated air in the fire-chamber, and also the smoke, to wind over and down between the lining F and the hot-air pipes, and then it turns, and, passing between the curtain M and the outside of the heater, enters the smoke-chamber I, and is discharged through the smoke-pipe L.

The advantages which I claim for my heater over other wood-burning heaters are, that it saves a larger percentage of fuel, while generating the same degree of heat. It does not choke up with ashes, &c. The cast-iron lining F is removable, and ashes are easily removed when they collect there, and they can collect in no other place.

Having now fully described my invention, what I desire to secure by Letters Patent is—

1. The cold-air chamber E, surrounding the fire-pot and ash-pit, in combination with the hot-air pipes *a a*, the cast-iron lining F in front of said pipes, and extending from the bottom of the combustion-chamber upward rather more than half its height, the curtain M, the hot-air chamber K, the discharge-pipes *b c c*, and the smoke-pipe L, substantially as described, and for the purposes set forth.

2. The discharge-pipes *b c c*, the hot-air chamber K, the smoke-pipe L, in combination with the smoke-chamber I, provided with the damper H, the hot-air tubes *a a*, the lining F, curtain M, fire-pot D, and cold-air chamber E, all relatively arranged to each other as described, and for the purposes set forth.

In testimony that I claim the foregoing, I have hereunto set my hand this 1st day of November, 1875.

ALVIN T. LANPHERE.

Witnesses:

C. E. THORNTON,
DAVID THOMPSON.