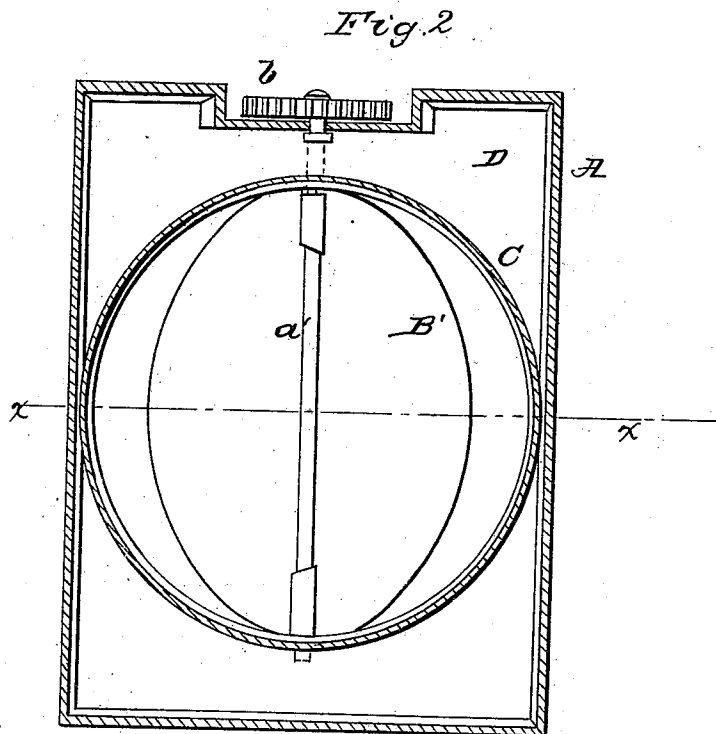
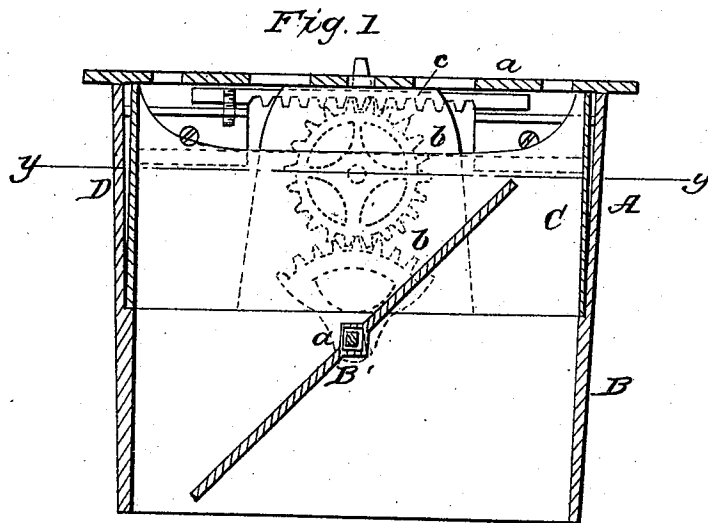


C. B. SAWYER.
Hot Air Register.

No. 34,783.

Patented March 25, 1862.



witnesses
James David
D. Hawley.

Inventor
C. B. Sawyer.

UNITED STATES PATENT OFFICE.

CHARLES B. SAWYER, OF FITCHBURG, MASSACHUSETTS.

IMPROVEMENT IN HOT-AIR REGISTERS.

Specification forming part of Letters Patent No. 34,783, dated March 25, 1862.

To all whom it may concern:

Be it known that I, CHARLES B. SAWYER, of Fitchburg, in the county of Worcester and State of Massachusetts, have invented a certain new and useful Improvement in Registers, &c., for the Hot-Air Pipes of Heaters; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a vertical section of my invention, taken in the line *x x*, Fig. 2; Fig. 2, a horizontal section of the same, taken in the line *y y*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in combining a water-chamber with a hot-air register, substantially as hereinafter fully shown and described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents the register box or pan, which is of quadrilateral form and has its top plate *a* perforated or formed of open scroll-work to admit of the heated air passing through it. The box A may be of cast metal, and it has a cylindrical flange B cast with it, which projects down from its bottom a suitable distance. This flange is of such diameter that it may receive the hot-air pipe, which is of cylindrical form and is designed to fit snugly on the flange B.

The box A is to be fitted in the floor of the apartment with its upper surface "flush" with the floor, as usual, and within the flange B there is placed a circular damper or valve B', which is hung on pivots or a central shaft *a'*, and may be opened and closed by gears *b* and a sliding rack *c*, all of which are shown by dotted lines in Fig. 1. Other means, however, may be employed for operating the damper.

Within the register box or pan A there is placed an upright cylindrical flange C, which may be equal in diameter to the flange B and in line with it. This flange C does not extend up quite as high as the top of the box A, and it serves as a partition in said box to form a water-chamber D. The flange C may be cast

with the box A and flange B, or be made separately and then attached. The flange B may also be cast or made separately and then attached to the box A; but the most desirable mode of manufacture would be to cast the box A and the two cylindrical flanges B C in one piece.

The chamber D is supplied with a requisite quantity of water, and as the heated air passes into the box A it will take up moisture from the chamber D as much as it requires and no more, it being well ascertained that air, whether hot or cold, will when lacking a requisite quantity of moisture supply itself with a sufficiency only if allowed to be brought in contact with it.

Water-chambers have been used in connection with air-heating furnaces, but so far as I am aware they have invariably been placed within the heater or furnace and in such position as to reach at times the boiling-point. When this occurs, the heated air becomes loaded with steam, the latter being carried along into the apartment and rendering the latter damp and consequently unwholesome; but by having the water-chamber D placed in the register-box A said chamber is entirely too remote from the heater or furnace to admit of the water reaching the boiling-point, and hence the difficulty alluded to is obviated. By having the cylindrical flange B directly connected to the register-box A and the circular damper or valve B' fitted therein, I avoid the comparatively expensive valves hitherto employed in the register box or pan A.

I would remark that the water-chamber D serves effectually as a preventative against fire. The wood-work in which the register is set cannot be ignited from the hot-air pipe, a contingency which not unfrequently occurs with the ordinary registers.

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

Combining a water-chamber with a hot-air register in such a manner that the hot-air pipe shall pass through the water-chamber, substantially as set forth.

CHARLES B. SAWYER.

Witnesses:

JAMES LAIRD,
R. GAWLEY.