

BENDER & TELLER.

Hot-Air Register.

No. 76,388.

Patented April 7. 1868.

Fig. 1.

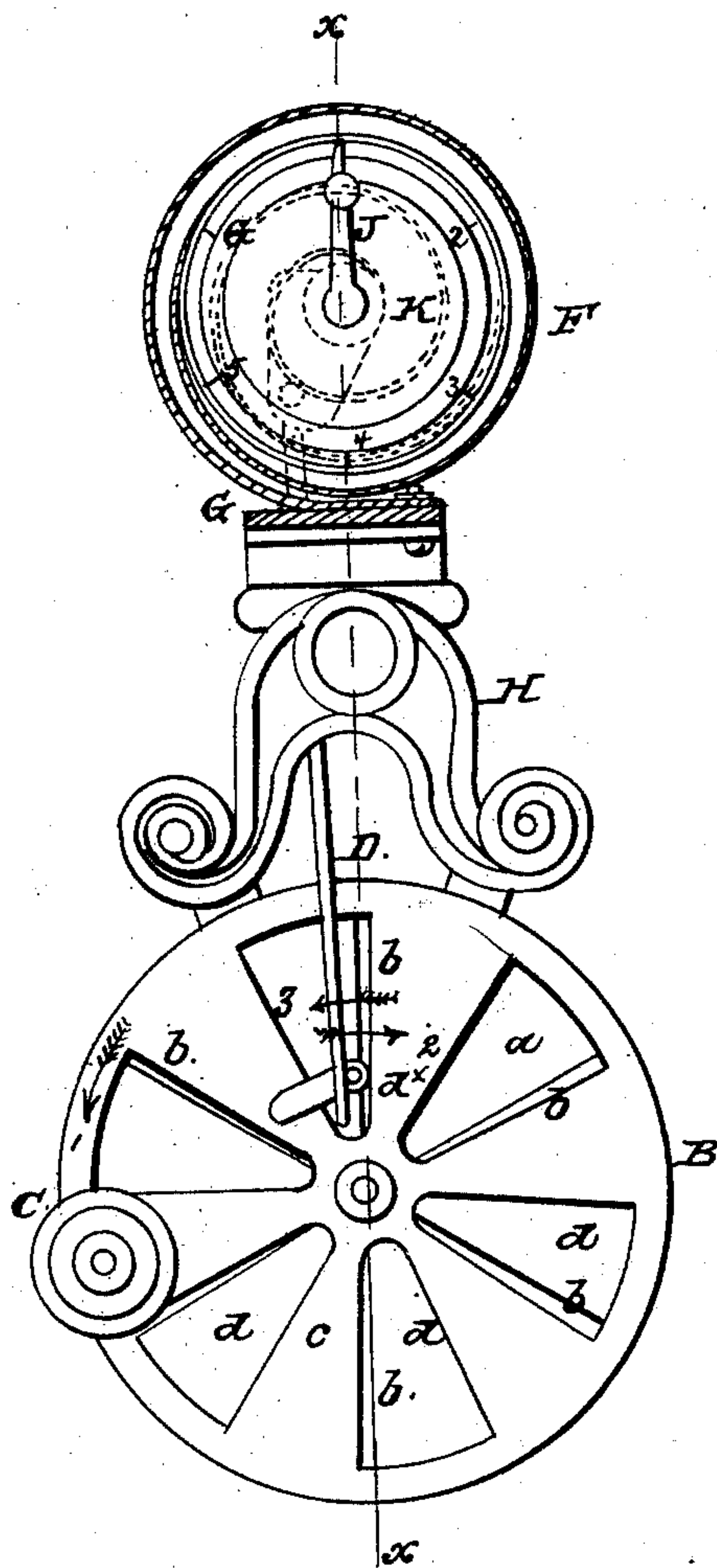
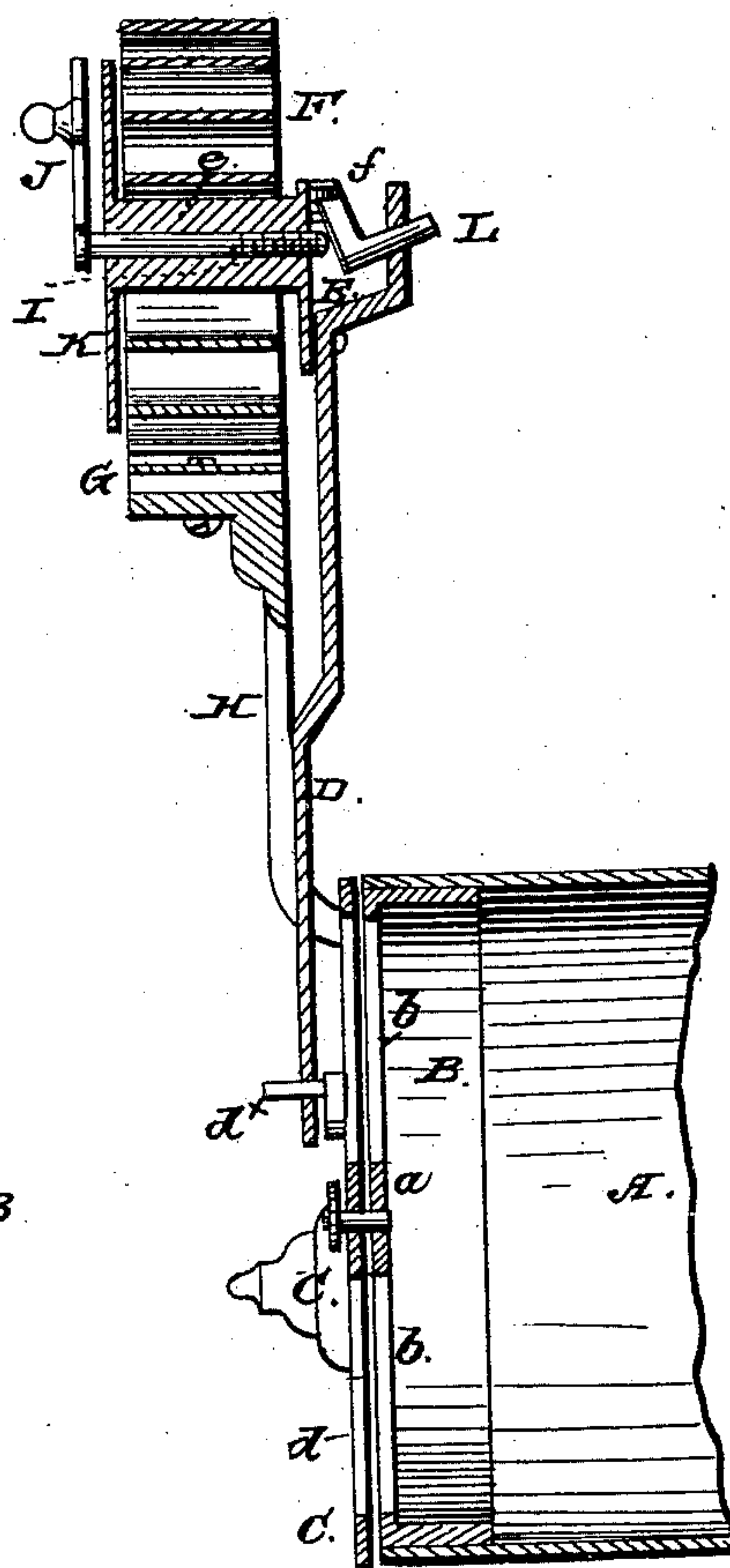


Fig. 2.



Witnesses  
W. C. Ashkett  
J. H. H. H.

Inventor  
H. Bender  
T. Teller  
per M. H. H. H.

1630

# United States Patent Office.

KARL BENDER AND CHARLES FREDERIC TELLER, OF BANHOFE OFFENBACH, A. M., GRAND DUCHY OF HESSEN, ASSIGNOR TO MARTIN LOCHNER, OF NEWARK, NEW JERSEY.

*Letters Patent No. 76,388, dated April 7, 1868.*

## IMPROVEMENT IN THERMOSTATS.

*The Schedule referred to in these Letters Patent and making part of the same.*

### TO ALL WHOM IT MAY CONCERN:

Be it known that we, KARL BENDER and CHARLES FREDERIC TELLER, of Banhofe Offenbach, A. M., in the Grand Duchy of Hessen, have invented a new and improved Thermostat or Heat-Regulator; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and improved self-acting apparatus or device for regulating the combustion of fuel in stoves, and keeping the temperature of an apartment at a uniform height. In the accompanying sheet of drawings—

Figure 1 is a front or face view of my invention.

Figure 2 a vertical central section of the same, taken in the line *x x*, fig. 1.

Similar letters of reference indicate corresponding parts.

The device may be applied to the door of a stove, or to any part which will admit of air passing over the fire, or it may be applied to a stove-pipe to admit of cold air passing therein to check the draught.

A represents a flange, which is secured in the door of a stove, in the side thereof, or in the stove-pipe, and B is a register at the outer end of the flange, said register being composed of a fixed plate, *a*, provided with radial openings *b*, and a rotating plate, *c*, provided with radial openings *d*, similar to those of *a*, and of the same dimensions. The plate *c* of the register is loaded at a point near its edge by a knob, C, the gravity of which has a tendency to keep the register closed, by moving it, when allowed, in the direction indicated by arrow 1. To the plate *c* there is attached a pin, *d*<sup>x</sup>, for the lower end of an arm or lever, D, to act against. This arm or lever is pivoted near its upper end to a plate E, which is attached to one end of the centre of a metal plate, F, which is bent in the form of a coil, and has its outer end attached to a piece of wood, G, or other poor conductor of heat, which is secured to a standard, H, connected to the flange A or fixed plate *a* of the register. The centre of the coiled plate F is a bar, *e*, of sufficient thickness to admit of being drilled longitudinally for a screw-rod, I, to pass through, said rod being provided with a crank, J, at its front or outer end, for the convenience of turning it, and also to serve as an index which works over a graduated dial-plate, K, at the outer side of the plate F. To the plate E, at the rear side of the bar *e*, there is secured, by a pivot, *f*, a bent or right-angular arm, L, the outer end of which bears against the upper end of the arm or lever D, and forms a connection between the coiled plate F, and the arm or lever D.

In adjusting the device for use, the rod I is turned to act upon the bent arm L, and adjust the arm or lever D so that the rotating plate *c* will be placed as desired.

In commencing, the plate *c* is generally allowed to close, the arm or lever D being so placed as to admit of the weight or knob C effecting this.

When the fire is under way, the heat from the stove will expand the coiled plate F, and the arm or lever D will consequently be moved in the direction indicated by arrow 2, and said arm or lever will turn the plate *c* of the register, and open it to admit a current of air over the fire and check the same as the temperature lowers, since the coiled plate F will cool and contract, and the arm or lever D will be moved in a reverse direction, as indicated by arrow 3, and the knob or weight C will turn plate *c*, so as to close the register.

In moderate weather, the screw-rod I may be turned so that the arm or lever D will not allow the register to close, but keep it more or less open. By this means a moderate fire only may be kept up.

In severe weather, the arm or lever should be so adjusted as to admit of the register closing, and said arm or lever may have its lower end adjusted at some distance from the pin *d*<sup>x</sup>, so that an apartment may be well heated before air is admitted through the register.

Thus by this simple means an apartment may be kept at a uniform temperature, and the combustion of fuel regulated to suit the state of the weather, large fires being kept up in severe weather, and smaller ones in moderate weather.

We claim as new, and desire to secure by Letters Patent—



76388

1. The coiled plate F, in combination with a register, B, and the arm or lever D, or its equivalent, all arranged substantially in the manner as and for the purpose set forth.
2. The screw-rod I and bent arm L, for adjusting the arm or lever D, to regulate the temperature of the room, substantially as shown and described.
3. The index-crank J on screw-rod I, in connection with the graduated dial-plate K, bent arm L, and the arm or lever D, all arranged substantially as and for the purpose set forth.

The above specification of our invention signed by us, this 13th day of January, 1868.

KARL BENDER,  
C. F. TELLER.