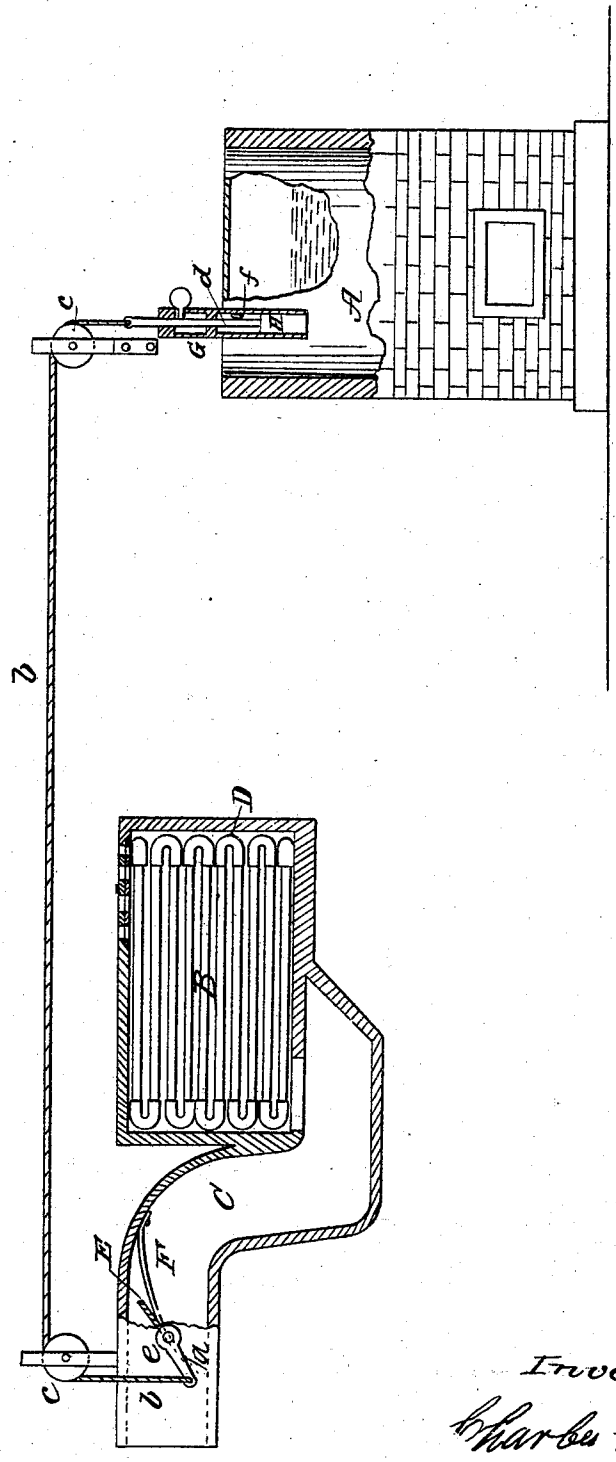
C. GREGG.

Steam Heater.

No. 32,559. Patented June 18, 1861.



Witnesses
C. H. Courtan
J. H. Cooke

Inventor
Charles Gregg

N. PETERS. Photo-Lithographer. Washington, D. C.

UNITED STATES PATENT OFFICE.

CHARLES GREGG, OF NEW YORK, N. Y.

AUTOMATIC REGULATOR FOR STEAM HEATING APPARATUS.

Specification of Letters Patent No. 32,559, dated June 18, 1861.

To all whom it may concern:

Be it known that I, CHARLES GREGG, of the city, county, and State of New York, have invented a new and Improved Automatic Regulator for Controlling the Temperature of Buildings and Apartments Warmed by Steam; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, forming part of this specification, said drawing representing an elevation, partly in section, of a boiler and steam-radiator with my invention applied.

My invention consists in regulating the supply of cold air to the radiator, by the pressure of steam in the boiler, supplying the radiator, by means of a spring damper in the cold air duct, in combination with a piston, or diaphragm, acted on by the steam, as hereinafter fully described.

To enable others skilled in the arts to make and use my invention I will proceed to describe its construction and operation.

A, is the boiler. B, the radiator composed of a coil of pipe or of any other construction and C, is the fresh air duct for the admission of fresh air from outside the building to the chamber D, in which the radiator is situated and from which the air after having been warmed is to be supplied to the building or apartment.

E, is the valve in the fresh air duct for regulating the supply of fresh air having a spring F, applied in such a manner as to exert a constant tendency to close it.

G, is a small upright steam cylinder attached to the boiler and fitted with a piston H, whose rod *d*, is connected by a cord *b*, running over pulleys *c*, *c*, with an arm *a*, on the spindle *e*, of the valve E. The piston H, is so arranged in the cylinder relatively to the opening *f*, by which the latter communicates with the boiler that the pressure of the steam acts upon the said piston in such a manner as to exert a constant tendency to open the air valve E. This tendency is opposed by the spring F, and may be also opposed by a spring in the cylinder G, but a spring F, should always be applied to the valve to exert a tendency to close it even though another spring be employed to the piston to act in opposition to the pressure of steam.

As the pressure of the steam acts upon the piston to open the valve E, it is obvious that the greater the pressure the greater the opening of the valve and the greater supply of cold air to the radiator. The greater the pressure of steam admitted to the radiator the greater will be the heat radiated from it but the supply of cold air by the valve being in proportion to the heat, the temperature of the building or apartment will be kept uniform provided the duct C, and valve E, are properly proportioned to the radiator.

It is obvious that instead of the piston H, a diaphragm may be used. It is also obvious that instead of the spring F, a weight may be applied to a lever secured to the stem of the valve outside of the air duct C.

An important feature of the invention consists in the prevention it affords against the freezing of the coil, for when the steam pressure ceases, the valve E, is closed by the spring or weight and no cold air is allowed to enter.

What I claim as my invention and desire to secure by Letters Patent is:

Regulating, or varying the supply of cold air to the steam heating surfaces automatically; to suit the condition of said heating surfaces; by means of a spring damper, in the supply pipe, connected to the piston, or diaphragm—the whole arranged to operate as and for the above described purpose.

CHARLES GREGG.

Witnesses:
C. W. COWTAU.
J. H. COOKE.