P. SCHAEFER.

Heater, Regulator and Damper Combined.

No. 204,685. Patented June 11, 1878.

Fig. 1.

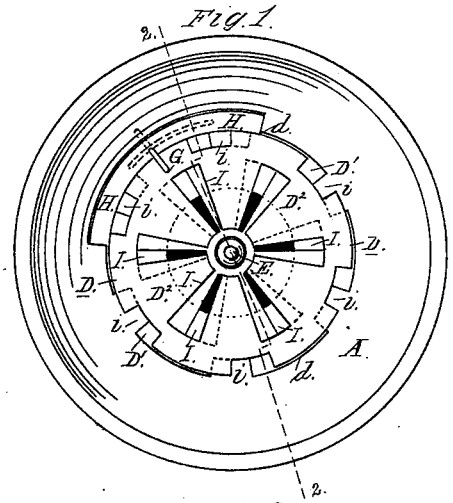


Fig. 2.

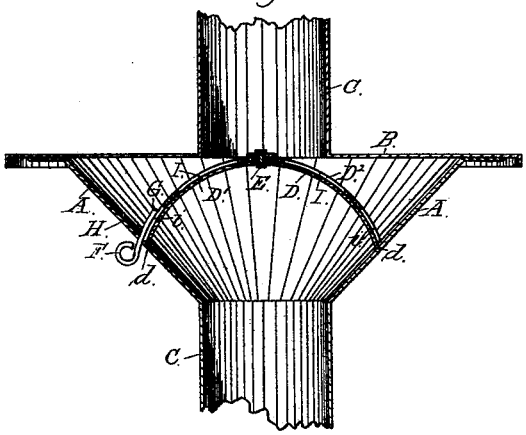
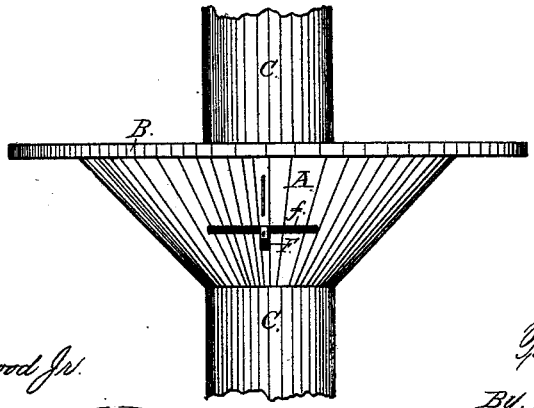


Fig. 3.



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UNITED STATES PATENT OFFICE.

PETER SCHAEFER, OF ST. PETER, MINNESOTA.

IMPROVEMENT IN HEATER REGULATOR AND DAMPER COMBINED.

Specification forming part of Letters Patent No. **204,685**, dated June 11, 1878; application filed February 25, 1878.

To all whom it may concern:

Be it known that I, PETER SCHAEFER, of St. Peter, State of Minnesota, have invented a new and valuable Improvement in Heater Regulator and Damper Combined; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

My invention relates to new and useful improvements in dampers or heat-regulators to be applied to stoves, furnaces, or any heating apparatus where a damper or heat-regulator is used.

The object of my invention is to so construct a damper and heat-regulator that the heat will be under complete control and can be regulated to any extent, said damper also serving to prevent high winds from interfering with the draft, as hereinafter described.

When my damper and heat-regulator is used with a stove-pipe, drum, or shelf, it is made dome-shaped, and is placed preferably at or near its top, so as to have more heating-space within the drum.

It is evident that said damper or regulator may be made horizontal or flat instead of dome-shaped without altering the nature of the invention; but the dome-shaped one is more desirable, as it tends to throw the heat back and retain it within the drum when the central vents are closed, as hereinafter described.

The damper and heat-regulator is peculiar in its construction, and is adapted to regulate the heat to any desired extent. It consists in a piece of metal, such as sheet-iron or any fire-proof material, preferably made dome-shaped, secured at its edge to the drum, and provided with two sets of alternately-disposed slots or openings, the first set extending from at or near its center nearly to its edge, while the second and smaller set of openings or slots extend from its edge toward the center, said openings or slots serving as vents for the passage of smoke.

The damper further consists in a second piece of metal, substantially like the first, with one exception—viz., the small vents at its edge are so constructed as to be open when the central slots or vents in the dome are closed, thus allowing a passage for the smoke, while the heat is retained by means of the dome. This second piece of metal is loosely attached to the first at its center, or rather at the top of the dome, and is operated by a handle rigidly secured to its edge, said handle working in a slot in the side of the drum, as hereinafter described with reference to the accompanying drawings.

In the drawings, Figure 1 is a top view of my improved damper and heat-regulator as applied to a stove-pipe drum and shelf, the flat top or table of the drum being removed. Fig. 2 is a section on the line 2 2 of Fig. 1. Fig. 3 is a side elevation.

A is the drum; B, its flat top or table; C, the smoke-pipe, to which the drum is attached. D is the damper and heat-regulator within the drum, the part D^1 being secured to the drum at *d*, and the part D^2 being centrally connected with the part D^1 at E. F is a handle working in a slot, *f*, and fastened rigidly to the part D^2 at G.

The part D^2 is provided with an ear or projection, H, which at all times covers the slot *f*, for the purpose of preventing the smoke from passing into the room through the slot *f*. I I are the vents in the dome for the passage of the smoke, and *i i* are the small vents at its edge or base, also for the passage of smoke.

It will be seen that when the handle F is turned to its limit to the left all the vents will be closed, thus stopping all draft; then, upon turning the handle to one-half its limit to the right, the small vents *i i* will be opened and the vents I I will still remain closed. Upon turning the handle to its limit to the right the vents *i i* will be found entirely closed and the vents I I will be opened. It is thus evident that if the handle F be turned three-quarters its limit to the right the vents I I *i i* will be just half opened, and by turning the handle three-quarters its limit to the left the vents *i i* will be half opened and the vents I I will be entirely closed. It will thus be seen that the heat can be regulated to any desired extent.

The vents *i i* are very important, especially when the drum is placed in a room in the upper part of a dwelling, for in case of a very

high wind it would only be necessary to turn the handle F to the center of the slot *f*, thus closing the vents I I and opening the vents *i i*, and the wind in coming down the pipe would strike against the top of the dome, which, being convex, breaks its force, and throws it against the outward slanting side of the drum, thus not interfering in the least with the draft coming through the small vents *i i*.

It is evident that the part D^2, instead of being connected to the part D^1, could work in a groove or way in the base of the dome, or at the point or place where the part D^1 is joined or secured to the drum; but it is preferable to connect them as shown at E, thus making a centrifugal damper.

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

1. The damper and heat-regulator consisting of the parts D^1 D^2, provided with vents or openings I I *i i*, proportioned and arranged substantially as shown, whereby I am enabled to close all the openings, or open them all, or open either set partially or wholly and independently, as set forth.

2. The combination, with the handle F and projection H, of the vents *i i*, operating, in connection with the vents I I, by means of said handle, substantially as and for the purposes shown and described.

3. The drum A, in combination with the handle F, projection H, and damper D, the part D^1 being rigidly secured to the drum, and the part D^2 operating, in connection with the part D^1, by means of the handle, as described.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

PETER SCHAEFER.

Witnesses:
JOSEPH S. MASON,
J. C. DONAHOWER.