

(No Model.)

G. M. COCKE.
DAMPER FOR STOVES.

No. 574,525.

Patented Jan. 5, 1897.

Fig. 1.

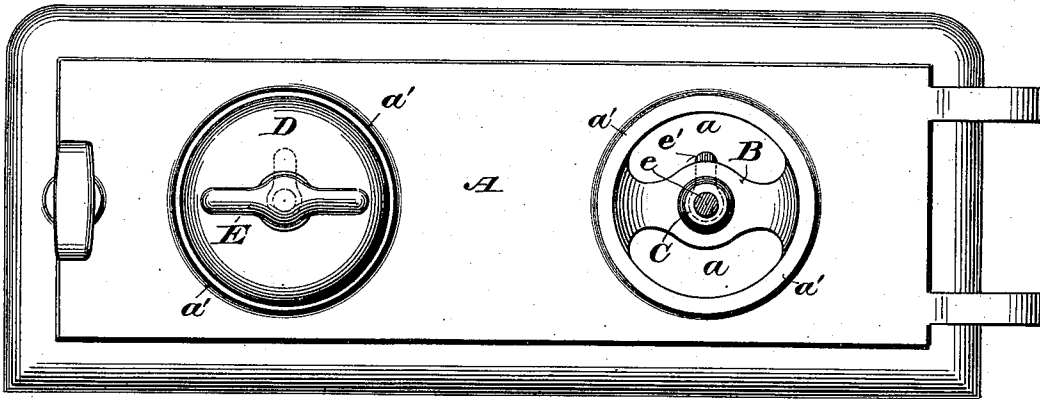


Fig. 3.

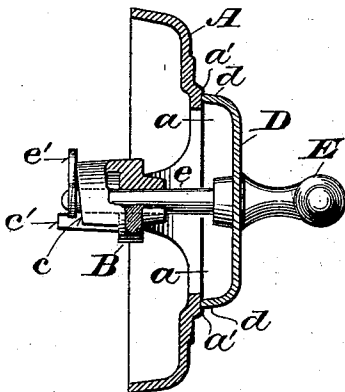
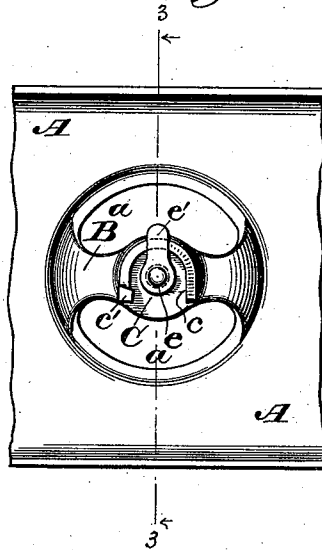


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE M. COCKE, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE
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DAMPER FOR STOVES.

SPECIFICATION forming part of Letters Patent No. 574,525, dated January 5, 1897.

Application filed April 25, 1896. Serial No. 589,036. (No model.)

To all whom it may concern:

Be it known that I, GEORGE M. COCKE, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Dampers for Stoves; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The main objects of my invention are to produce a tightly-closing damper, the operating connections of which will not be caused to stick or rendered inoperative by unequal expansion and contraction, and can be quickly and easily manipulated under all conditions. It consists in certain novel features in the construction and arrangement of the damper and its operating connections, as hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings like letters designate the same parts in the several figures.

Figure 1 is a front elevation of a stove-door to which my improved dampers are applied, one of the dampers being removed and its stem shown in cross-section to show its connection with the door. Fig. 2 is an elevation of the inside of a portion of the door and one of the dampers and its operating connections; and Fig. 3 is a vertical section on the line 3-3, Fig. 2, cutting one of the dampers axially.

For the purpose of illustration I have shown a door provided with two of my improved dampers, but any number and arrangement of these dampers may be applied to any convenient part of a stove, furnace, or other heater.

I am aware that dampers of this class have been provided with screw-threaded stems for opening and closing them and holding them tightly closed; but a screw is inconvenient and objectionable in practice, since it must be turned several times to fully open or close the damper, and is liable, on account of unequal expansion and contraction, to stick or work hard or to become loose and ineffective.

It is the purpose of my improvements to avoid these defects and objections.

Referring to the drawings, A designates a door, or it may be any plate or casting of a stove or heater, which it is desirable to provide with a damper. It is formed with one or more draft openings or orifices *a a*, preferably circular in form, and it is preferably formed on the outside with a slightly-raised rim *a'* around said opening to afford a seat for the rim of the damper plate or disk. On the inner side it is cast or otherwise provided with a bridge or cross-piece B, spanning said opening and formed centrally as to the opening with a sleeve or collar C, having a plain cylindrical bore approximately in line with the center or axis of the draft-opening. This sleeve is formed or provided at its inner end on one side of and at a distance from its bore with a flange or projection which terminates in a transverse incline or spiral *c*, curved approximately concentric with the axis of the sleeve, as shown in Fig. 2. This incline terminates at one end farthest from the plane of the draft-opening in an inwardly-projecting lug or stop *c'*.

D designates the damper plate or disk, which is preferably made of circular or approximately circular form and provided with an inwardly-turned marginal flange *d*, fitted to the flange or raised seat *a'* around the draft-opening. It is formed or provided on the outer side with a suitable handle E for turning the damper and opening and closing it. It is also provided on the inside, preferably at or near the center, with an inwardly-projecting plain cylindrical stem *e*, which is loosely fitted in the sleeve C, and provided at its inner end with a lateral projection or button *e'*, which is constructed and arranged to engage with the incline *c* when the stem of the damper is thrust inward and turned, as shown in Figs. 2 and 3, and to draw and hold the rim of the damper-disk snugly against its seat around the draft-opening.

The lug *c'* extends into the path of the projection *e'* when the damper is closed and serves to stop said projection when it is turned out of engagement with the incline in position to permit the stem *e* to be drawn outwardly in sleeve C and the damper to be thus fully

opened. It also serves in case the stem is expanded by heat or becomes permanently lengthened to prevent the projection *e'* from being turned to the right out of engagement with the incline *c* in closing the damper; but it is intended to make the stem of such length and the incline *c* of such pitch, and to so locate the projection *e'* on the stem that before the damper will be drawn tightly to its seat. Sufficient play between the sleeve *C* and the stem *e* is allowed to prevent the stem from sticking in said sleeve on account of unequal expansion and contraction due to the great variation of temperature to which they are subjected, and to insure the free operation of the damper under all conditions. The incline *c* is made of such length and pitch that it will properly cooperate with the projection or button *e'* to close the damper, and it will hold it to its seat regardless of the expansion and contraction and the consequent variation in the length of the stem *e*.

Various changes in the minor details of the device may be made within the intended scope of my invention.

I claim—

1. The combination with a stove, furnace or other heater having a draft opening or orifice and a sleeve or collar having an incline arranged transversely and to one side of its axis, of a damper disk or plate provided with a stem loosely fitting in said sleeve and having a lateral projection adapted to engage with said incline when the damper is closed and to prevent the withdrawal of the stem from said sleeve when the damper is opened, substantially as and for the purposes set forth.

2. The combination with a stove or heater having a draft opening or orifice and a bridge or cross-piece spanning said opening and provided with a sleeve which is formed at its inner end with an incline, of a disk or plate adapted to close said opening and provided with a stem loosely fitted to turn and slide endwise in said sleeve and having a lateral

projection adapted when turned into engagement with said incline to draw and hold said disk snugly against its seat, substantially as and for the purposes set forth.

3. The combination with a stove or heater having a draft opening or orifice, and within said orifice a sleeve formed or provided at its inner end on one side with a transverse incline terminating in a lug or stop, of a damper disk or plate provided on the outside with a handle secured thereto for opening and closing it and on the inside with an inwardly-projecting stem fitted to turn and slide endwise freely in said sleeve, and provided with a lateral projection adapted to be turned in engagement with said incline for tightly closing the damper and to be turned out of engagement with said incline to permit the stem to be withdrawn lengthwise for opening the damper, said projection serving as a stop for limiting the outward movement of the damper, substantially as and for the purposes set forth.

4. The combination with a stove door or plate having a draft-opening and a sleeve within said opening formed or provided at its inner end at a distance from its bore with a curved transverse incline extending partially around said sleeve, of a substantially circular flanged damper-disk provided with a plain inwardly-projecting cylindrical stem loosely fitting in said sleeve and having a lateral projection adapted to engage with said incline and draw the marginal flange of said damper-disk tightly against the face of the stove door or plate when said stem is thrust inward and turned to one side, substantially as and for the purposes set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

GEORGE M. COCKE.

Witnesses:

FRED J. WERGIN,
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