

W. J. KEEP.
Stove Pipe Damper.

No. 100,641.

Patented March 8, 1870.

Fig. 1.

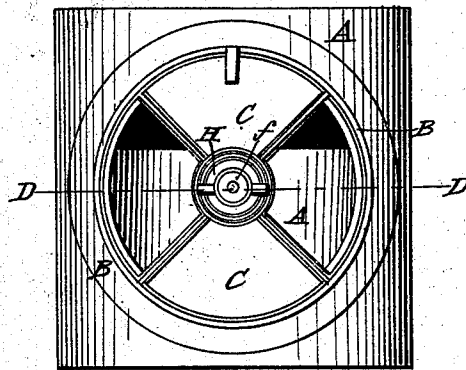


Fig. 2.

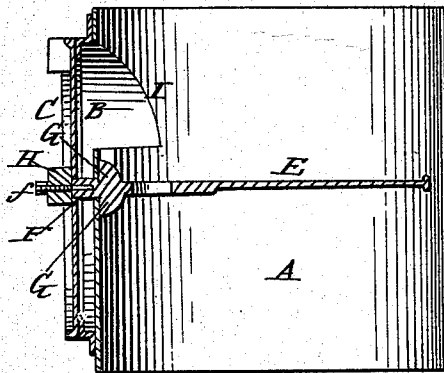
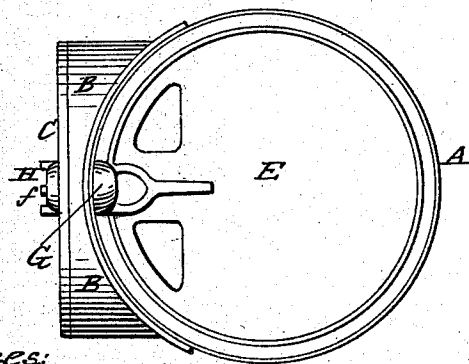


Fig. 3.



Witnesses:
Chas. C. ...
Samuel Harr

Inventor:
Wm. J. Keep
by Randall & ...
1870.

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Fig. 4.

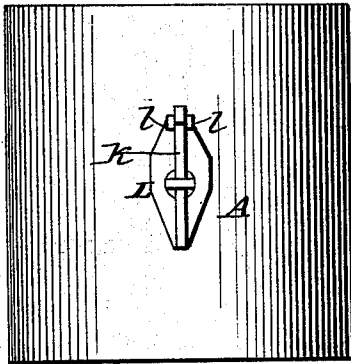


Fig. 5.

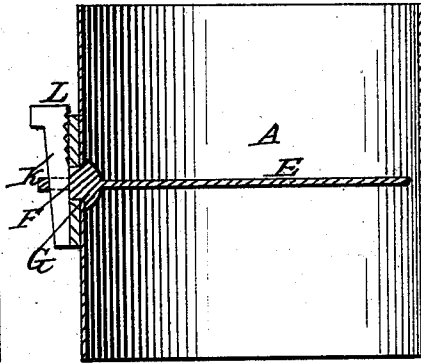


Fig. 6.

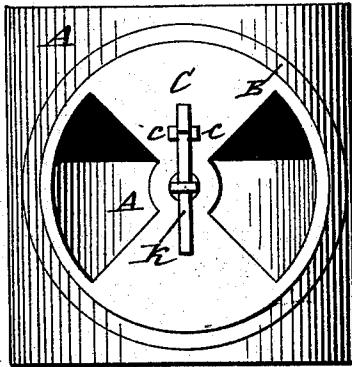
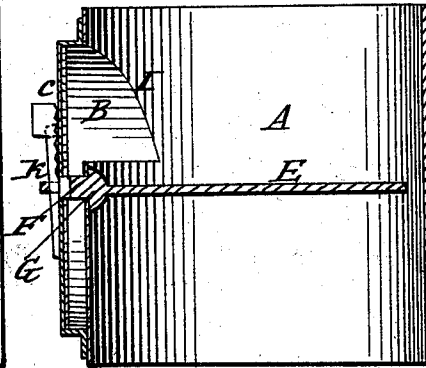


Fig. 7.



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United States Patent Office.

WILLIAM J. KEEP, OF TROY, NEW YORK.

Letters Patent No. 100,641, dated March 8, 1870.

STOVE-PIPE DAMPER.

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

To all whom it may concern:

Be it known that I, WILLIAM J. KEEP, of Troy, in the county of Rensselaer, and in the State of New York, have invented certain new and useful Improvements in Stove-Pipe Dampers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a front elevation of a combined register and damper connected together by means of my improved method;

Figures 2 and 3 are a central longitudinal section and a top view, respectively, of the same;

Figure 4 is a front elevation of a section of pipe having a damper attached thereto by means of a modification of my device;

Figure 5 is a vertical central section of the same; and

Figures 6 and 7 are a front elevation and a central longitudinal section, respectively, of a combined register and damper connected together by means of the same modification.

Letters of like name and kind refer to like parts in each of the figures.

My invention is an improvement in the means for attaching butterfly-dampers to stove-pipes, and also for connecting said dampers with vertical registers, and attaching the same, together with the necessary collar forming the seat of the latter, to a pipe; and to this end

It consists, principally, in the employment of a single axial pivot secured to the edge of a damper, and provided upon its inner end with a collar or shoulder, and upon its outer end with a screw-thread and nut, or a slot and key, by means of which, when said damper is placed in position within the pipe, with said pivot projecting through a suitable opening within the wall of the latter, the collar or shoulder upon said pivot shall bear against the inner side of said pipe, and the nut or wedge against its outer side, and thus firmly hold said damper in a horizontal position, while at the same time allowing it to be revolved, as is hereinafter specified.

It further consists in holding the register-collar in position against the pipe by means of the hereinbefore-named axial pivot provided with a shoulder and nut, or its equivalent device, and thereby dispensing with the use of rivets, as is hereinafter shown.

It further consists in employing the spring of the pipe to hold the damper in place, as is hereinafter set forth.

It further consists in causing the spring of the pipe to hold the collar firmly in place by means of the axial pivot provided with the shoulder and nut, or the equivalent of the latter, as is hereinafter specified.

It further consists in causing the register to bear firmly, but not rigidly, against the collar, by means of the spring of the pipe operating through the axial pivot, collar, and nut, as hereinafter shown.

It further consists in the combination of the pipe, the damper, the axial pivot provided with the shoulder, screw-thread, and nut, the collar, and the register, substantially as and for the purpose specified.

In the annexed drawing—

A represents a section of sheet-metal pipe having fitted to or upon one side thereof a metal collar, B, the outer end of which is partially inclosed and presents a circular face, having its plane in a line with the vertical wall of the pipe.

Corresponding with and fitting upon the face of the collar B is a register, C, in and through which are provided two openings, D, having each the form of one-fourth of a circle, which openings, when said register is placed in a certain position, coincide with similar openings provided within the face of said collar, and at other times come opposite the solid portions of said face.

B represents a butterfly-damper of usual form, having secured to and projecting outward from one side thereof a pintle or pivot, E, provided at its inner end with a shoulder, G, and at its outer end with a screw-thread, F, upon which is fitted a nut, H.

Suitable openings, corresponding in size with the pivot E, being provided in and through the center of the register and collar, and through the wall of the pipe, said pivot is passed through the same from within the pipe, and the nut placed upon its outer end, when, by screwing up said nut, the register, collar, and damper are caused to occupy their proper relative positions upon and within the pipe.

A semicircular opening, I, provided in and through the wall of the pipe within the collar B and above the pivot E, completes this device, the operation of which will be readily understood.

The pivot E serves as an axis for both damper B and register C, and also operates to hold the collar B in position radially, and, by means of the shoulder G and nut H, a sufficient degree of pressure is obtained to hold said collar firmly against the pipe without the aid of rivets or other equivalent devices, and also to retain said register and damper in whatever position they may be placed.

It will be observed that while the collar and register are firm and unyielding, the pressure of the shoulder G upon the thin metal composing the wall of the pipe will cause said wall to spring outward, and that by screwing up the nut H, any degree of pressure can be obtained that may be required for holding the collar against the pipe, without creating undue friction upon the register or shoulder.

Many modifications of this method of attaching the damper to a pipe will readily suggest themselves, of which, however, it will be necessary to give but one.

In figs. 6 and 7 are shown a front elevation and a vertical central section, respectively, of the hereinbefore-described register and damper combined, in which the screw-thread upon the end of the pivot F is replaced by a longitudinal slot passing through the same at a right angle therewith, which serves to receive a tapering key, K, that, resting upon the face of the register C, presses against the outer end of said slot and draws the pivot outward.

By driving the key K into or withdrawing it from the slot, the position of the pivot and register will be correspondingly changed, and the pressure between said register, the collar, and the shoulder F varied in a like degree.

In order to insure the relative positions of the register and key, two lugs, c, are secured to the former in such a position as to embrace the sides of the latter, and prevent all lateral movement of the same.

In figs. 4 and 5 is shown the application of this modification to a common butterfly-damper, which is constructed as before, except that the pivot is somewhat shorter, less length being required than when said damper is combined with a register.

A washer, L, having any form deemed best, is placed between the pipe and key, and furnishes a bearing for the latter. Suitable lugs l, secured to said washer upon either side of the key, connect said parts together and enable them to be used for adjusting the position of the damper.

It will, of course, be seen that the key and slot shown in the last above-described modification may be replaced by a screw and nut, but, in either case, as the shoulder F is straight or at a right angle to the pivot, while the wall of the pipe is curved, said shoulder will naturally touch said pipe only at its outer sides, horizontally, and that, therefore, as the pressure of the nut or wedge is increased or diminished, said pipe will be sprung so as to conform more or less to the shape of the shoulder, by which means an elastic pressure upon the shoulder and washer is obtained sufficient to securely hold the damper when adjusted, without rendering it at all difficult to change such adjustment.

The especial advantages possessed by this method of attaching the damper to a pipe are:

First. It dispenses with one pivot upon the damper

and one opening in the pipe, and renders it far more easy to place said damper in position within said pipe.

Second. In combining a register with a damper, it renders unnecessary the use of rivets or other equivalent devices for securing the collar in place.

Third. It enables the spring of the pipe to be used for retaining in place the damper, or registers and damper when adjusted to any desired position, and thus renders unnecessary the employment of special locking devices.

Having thus fully set forth the nature and merits of my invention,

What I claim as new, and desire to secure by Letters Patent, is—

The means employed for securing the damper in a horizontal position, consisting of the pivot F provided with the shoulder G and the screw-thread f, and the nut H, or its equivalent, substantially as and for the purpose specified.

Also, securing the collar B in position upon the pipe by means of the pivot F provided with the shoulder G and screw-thread f, and the nut H, or its equivalent, substantially as shown, and for the purpose described.

Also, causing the spring of the pipe to hold the damper in position, when adjusted by means of the hereinbefore-described devices, substantially as and for the purpose shown.

Also, causing the spring of the pipe to hold the collar B firmly in place by means of the pivot F, shoulder G, screw-thread f, and nut H, or its equivalent, substantially as shown, and for the purpose set forth.

Also, causing the register C to bear firmly but not rigidly against the collar B by means of the spring of the pipe operating through the pivot F, shoulder G, screw f, and nut H, or its equivalent, substantially as and for the purpose specified.

Also, the combination of the pipe A, the collar B, the register C, the damper E, the pivot F, the shoulder G, the screw-thread f, and the nut H, or its equivalent, substantially as shown and described.

In testimony that I claim the foregoing, I have hereunto set my hand this 29th day of January, 1870.

WILLIAM J. KEEP.

Witnesses:

WILLIAM HELLY,
B. MACGREGOR.