

J. C. MERRITT.
Stovepipe Damper.

No. 53,024.

Patented March 6, 1866.

Fig. 1.

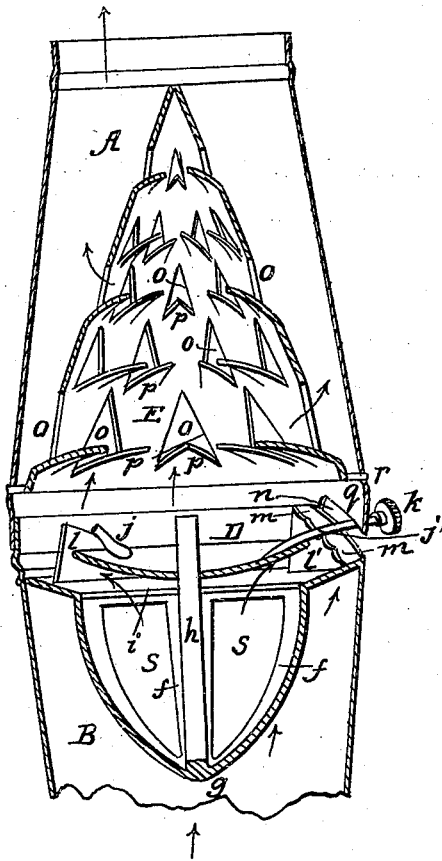


Fig. 2.

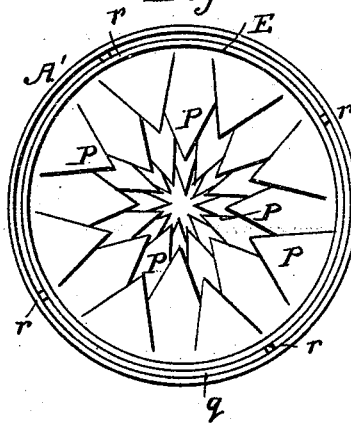
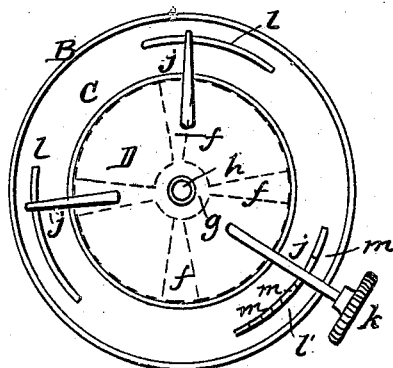


Fig. 3.



Witnesses:

Jay Keppatt.
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Inventor:

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UNITED STATES PATENT OFFICE.

J. C. MERRITT, OF WYOMING, NEW YORK.

STOVE-PIPE DAMPER.

Specification forming part of Letters Patent No. 53,024, dated March 6, 1866.

To all whom it may concern:

Be it known that I, J. C. MERRITT, of Wyoming, in the county of Wyoming and State of New York, have invented a certain new and Improved Stove-Pipe Damper and Cinder-Retainer; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a central vertical section of a portion of pipe and my improvements therein. Fig. 2 is a cross-section of the pipe, showing an inside view of the cone or cinder-retainer, looking toward the apex of the same. Fig. 3 is a similar section, showing a top plan of the damper.

Like letters of reference indicate corresponding parts in all the figures.

The object of my improvements is to provide a suitable damper for stove-pipes that shall both regulate the draft and deflect the same to the surface of the pipe, and in connection therewith a suitable device for arresting and preventing the sparks and cinders from ascending the pipe; and the invention consists in a damper composed of an annular disk, secured within the pipe, with a convex disk for closing the opening in the former, arranged and operating in the manner hereinafter described, and a hollow perforated cone provided with lips or ledges projecting inward, which serves to arrest the ascending cinders.

As represented in the drawings, A B are two enlarged sections of stove-pipe, jointed together in the usual manner; C, an annular ring or disk fastened within section B; D, the deflecting convex disk, arranged above the ring C, so as to close the aperture in the same, when required; and E is a conical spark-retainer, adjusted within section A of the pipe.

The annular disk C fits loosely within the pipe, as shown, so as to leave a narrow space between its periphery and the pipe as a passage for the soot and cinders. From the inner edge of the ring C converging arms *f f* unite at the center *g*, Figs. 1 and 3, so as to form a support for the axis or upright shaft *h*. This shaft passes loosely through the center of the disk D, so as to allow the latter a free movement as it is adjusted up and down, as will presently be described.

The disk C is made dishing or inclined inward, as shown in Fig. 1, so as to guide the arrested cinders as they fall into and through the aperture *i* in the former.

The disk D is of the form of a segment of a hollow sphere, presenting its convex side to the draft, (shown in Fig. 1,) and is provided with radial arms *j j j'* (three being sufficient, as shown) extending from the periphery of the same, one of them, *j'*, passing outward through the pipe, terminating in a knob, *k*, by which the damper is operated.

Inclined ledges *l l l'*, Figs. 1 and 3, are cast or otherwise formed on the upper side of the annular ring C, having a position corresponding relatively with the arms *j j j'*, which rest upon and slide up and down the same in operating the damper.

The ledge *l'* is provided on its inclined upper edge with notches *m m*, which serve to retain the handle-arm *j* in any position on the same required. There is an inclined slot, *n*, made in the joint of the sections of pipe A B, corresponding in inclination with the ledges *l l'*, so as to allow the necessary movement of the handle-arm in raising or lowering the disk D.

The spark-arrester and cinder-retainer E is of conical form, and may be made of sheet-iron, and is provided with apertures or perforations *o o*, of triangular or other suitable form, and lips or ledges *p p* projecting inward from the sides of the same. These lips and apertures are conveniently formed by stamping or partially cutting out portions of the metal and then bending the same inward, so that the lips will be nearly horizontal, or at right angles with the direction of the draft.

The lips are preferably so formed as to give their under side a slightly concave form, so as to more perfectly arrest the passage of the cinders.

The cone E is constructed of such a size as to leave a narrow space, *q*, between its base and the surface of the pipe, (shown most clearly in Fig. 2,) for the passage of any soot that may fall from above. It is retained and secured in the pipe by means of lugs or projections *r r* from the same, which may be sprung into suitable holes or indentations made in the pipe, or it may be secured therein in any other suitable manner.

The sections of the pipe intended to receive

the apparatus described are preferably enlarged conically at their junction, as shown in Fig. 1, to prevent there being too great a degree of obstruction to the passage of the products of combustion.

The operation of my improvements is as follows: The damper and retainer are first inserted in place in their respective sections of pipe, when the latter are jointed together in the usual manner, so that the slots *n* shall properly coincide. The draft-current, flowing in the direction of the arrow at the bottom of Fig. 1, is partially deflected by the curved arms *ff* against the surface of the pipe and under side of the ring C, while the other portion passes through the spaces *ss* and aperture *i*, which the enlargement of the pipe allows to be made of sufficient size to admit the products of combustion. The draft as it passes through *i* impinges against the convex surface of D, and is thereby deflected against the inner surface of the pipe, and thence passes into the cone E, where it strikes the lips *pp*. These lips are so arranged, as shown in Fig. 2, that every portion of the current must come in contact with some of them before it can pass through the openings *oo*. This contact with the lips arrests the sparks and cinders and prevents their further passage, when they fall and are conducted by the inclined sides of the disks C D through the space surrounding the shaft *h* and through the aperture *i* beneath.

The force of the draft is regulated by raising or lowering the disk D by means of the handle *k* and inclined ledges, so as to entirely close the aperture *i* or allow the draft an unobstructed passage through the same, the notches *mm* retaining the arm *j'*, and consequently the disk D, in any position required.

The advantages of my improvements may be briefly enumerated as follows: The convex disk D and arms *ff* serve as a deflector to direct the products of combustion to the inner surface of the pipe, which absorbs the heat, and thereby radiates the same into the apartment. The enlargement of the pipe gives a greater radiating-surface, and also enables the opening *i* to be of a size equal to or nearly that of the unenlarged pipe, so as to allow a full and unobstructed draft when required. The construction of the cone E with lips prevents the passage of cinders, and hence obviates the necessity of so frequently taking down the pipe for cleaning it, as is ordinarily required. It also acts as a safeguard against those fires which originate from the ignition of cinders in the pipe and chimney that so frequently occur.

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

1. The perforated cone E, provided with the lips or ledges *pp*, for arresting the cinders, in combination, with the stove-pipe A and damper-disks C D, substantially as and for the purpose herein specified.

2. The combined construction and arrangement of the concave annular disk C, with its downwardly-converging arms *ff* and central guide-shaft, *h*, and of the central concave disks, D, and for the purpose herein set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

J. C. MERRITT.

Witnesses:

JAY HYATT,
ALBERT HEIGHT.