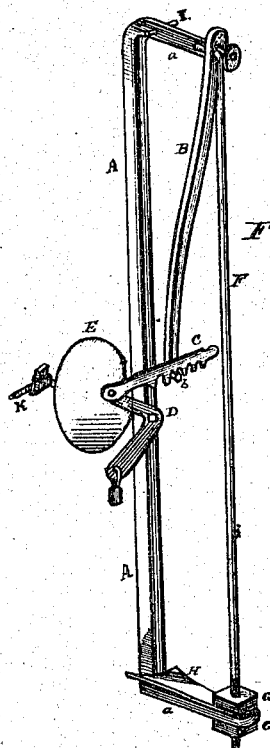
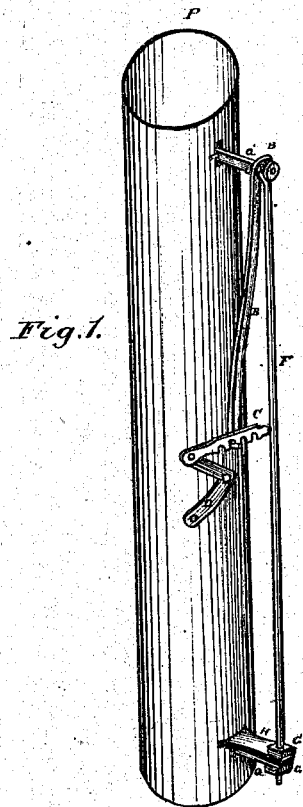


**W. H. LUTZ assignor to himself & W. BOAS,
For an Expansion, Self-adjusting, Safty
STOVE PIPE DAMPER.**

112260

PATENTED FEB 28 1871



Witnesses.

Wm. B. Miller
Jacob Stauffer

Inventor.

William H. Lutz

United States Patent Office.

WILLIAM H. LUTZ, OF LANCASTER, PENNSYLVANIA, ASSIGNOR TO HIMSELF AND WILLIAM BOAS, OF SAME PLACE.

Letters Patent No. 112,260, dated February 28, 1871.

IMPROVEMENT IN STOVE-PIPE DAMPERS.

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

I, WILLIAM H. LUTZ, of the city and county of Lancaster, in the State of Pennsylvania, have invented a Device to Constitute an Expansion Self-acting Safety-Damper for Stove-Pipes, of which the following is a specification.

The object of this invention is the application of the well-known power heat exerts in the expansion of an iron or metallic bar, so combined that said expansion governs the valve or damper so as to decrease the amount of draught and always adjust itself to the degree of temperature within the stove-pipe, the parts so graduated as to be adjustable to various conditions. The drawing illustrates the construction and application.

Figure 1 is a section of a stove-pipe, showing the external parts in perspective.

Figure 2; the arrangement of the several parts, with the pipe removed to show the expansion-rod and valve or damper within the pipe.

A brief explanation will enable any one skilled in the art to make and apply my invention, by reference to the drawing and letters thereon.

P, fig. 2, is a section of an ordinary stove-pipe of any desired diameter.

A stout rod or iron bar, A, nearly the length of a section, say twenty inches, is bent at right angles at both ends, *a a'*. These ends are thrust through openings made in the pipe to the outside, the upper being an oblong slot, to allow the inner bar A to expand. The ends of said bar may project an inch and a quarter beyond the outside of the pipe above and below. The upper end *a'* has a shoulder, and passes through the acting lever B, and on the end a circular plate is riveted, between which plate and the shoulder the lever-bar B and tension-rod F are confined.

This tension-rod F hooks through a hole made in the head of the lever-rod or bar B, the lower end of said tension-rod being secured through the lower end *a* of the extension-bar by means of a screw N and a pair of jam-nuts, G' G. The lower end may be more firmly secured by a brace-plate, H.

The lever-bar B is bent inward to about the center

between *a' a*, and is provided with a headed pin, *b*, that fits into any of a series of notches in a rack, C.

To one end of this notched rack one end of an elbowed lever, D, is secured by a pivot-joint. This lever D connects in the angle with the shaft of the damper E, so as to turn the same.

The other arm of the elbowed lever shows a perforation, to which a weight may be hung, if required, in certain cases to govern the action.

The elbow is, however, not essential. One lever-arm would also act.

The operation is easily understood. As the heat, going up the pipe, expands, the inner bar A and the tension-rod F being rigid, remote, and outside, the expansive force can only operate on the upper end, which, by elevating the lever-bar B, held back by the tension-rod, must necessarily act upon the notched rack C, connected with the elbowed lever, and the damper within the pipe, to close the same more or less, in proportion to the heat and degree of expansion. As the same cools it shrinks and opens the damper. An indicator, K, on the outer end of the shaft of the damper, would show its position.

It may be necessary to unshift the lever-bar from the rack in kindling a fire, as a brisk fire might check the draught too soon; but when once adjusted the degree of draught will always be in conformity with the degree of heat, and will not only be self-adjusting, but prevent that excess of heat in stove-pipes that often proves destructive to carpets or property.

I am aware that the mere expansion of iron by heat is not new, nor do I claim such a property.

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

The combination and arrangement of the bar A *a'*, lever-bar B, rack C, a simple or elbowed lever, D, and tension-rod F, together with the damper E, operating substantially in the manner and for the purpose specified.

Witnesses:

WM. B. WILEY,
JACOB STAUFFER.

WILLIAM H. LUTZ.