G. TAMKIN.

Stove Pipe Damper.

No. 82,565. Patented Sept. 29, 1868.

Fig. 1

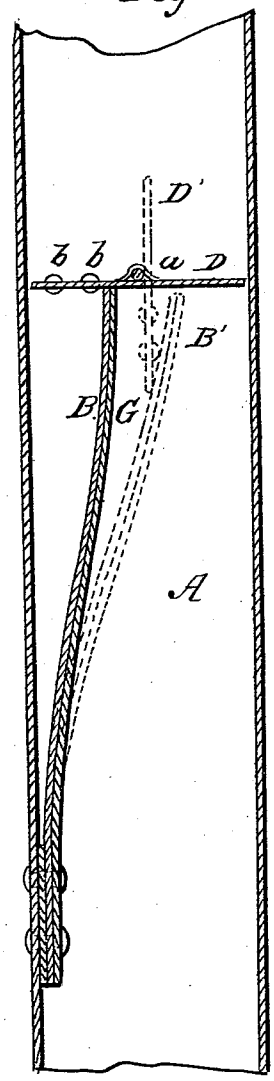
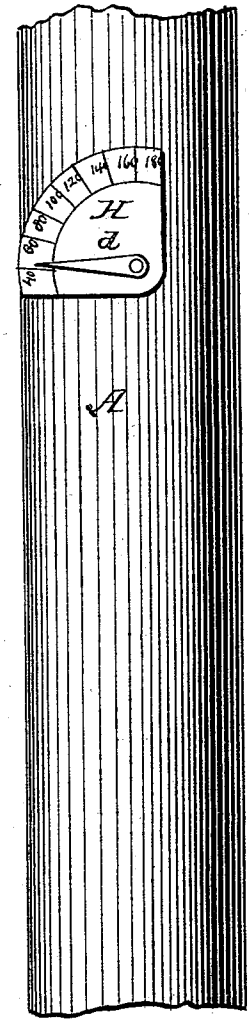


Fig. 2



Witnesses.
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GEORGE TAMKIN, OF NEWBURG, NEW YORK.

Letters Patent No. 82,565, *dated September* 29, 1868.

IMPROVEMENT IN STOVE-PIPE DAMPERS.

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, GEORGE TAMKIN, of Newburg, in the county of Orange, and State of New York, have invented a new and improved Self-Acting Damper; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a central vertical section of stove-pipe furnished with my improved damper.

Figure 2 is an exterior view of the same, showing the pointer and graduated sector.

Similar letters of reference indicate corresponding parts

This invention consists in the employment of a composite metallic rod within the stove-pipe, in connection with the usual circular damper, and so arranged that the damper will be adjusted automatically by the vibration of the rod, which vibration is due to the unequal expansion or dilatation of the two parts composing the rod.

In the drawings, A is the pipe or flue, wherein such interior dampers are usually placed to regulate the degree of heat to be given out from the fire, by being opened or closed, to enlarge or contract the aperture through which the ascending heat passes in obedience to the draught from below.

The damper D is nearly poised on a shaft-rod, *a*, to which it is affixed in the usual manner.

A few rivets *b b*, or other equivalent weight, are placed upon one side of the shaft-rod, so that the damper will always tip or open in one direction when free to do so.

The composite rod is composed of two metals, having different expanding qualities, as iron and copper, or their equivalent, as shown at B and G, the latter being the copper, or its equivalent.

The lower end of the composite rod is riveted or otherwise suitably connected to the side of the pipe or flue, as shown.

The upper part of the rod is placed in such co-relation to the damper that it will permit the latter to hang vertically when the rod is cold, as shown by the red outlines D′ B′.

The metal of less expanding quality is placed next the weighted half of the damper, so that the other metal, of greater expansive character, will, in expanding, curve or bend the rod toward the weighted half of the damper, and raise it, to shut off the draught as the heat increases.

When there is little or no heat in the flue or pipe, the damper will hang vertically, as shown by the red outline D′, and the rod being then at the red outline B′, but as the heat increases, the copper part G of the rod dilating more in extent than thei ron part B, the rod will be curved toward the weighted side of the damper, and the upper end of the rod, which was in easy contact with the under side of the damper, will raise the latter (as the rod is bent by the excessive expansion of the copper to the position shown at B G) to the position shown at D, whereby the draught will be shut off and the heat reduced.

The extreme of the automatic operation of the damper and rod has been described to set forth more clearly the principle of their action, but in actual practice the extreme closing of the damper will not take place, but merely a partial closing of the same, for as the damper approximates to a horizontal position, the heat will be lessened in proportionate degree, and the expansion of the copper thereby diminished, the effect of which will be that the variation will be maintained within a small limit, and an equable degree of heat maintained in the stove or fire-box.

A graduated sector, H, may be affixed to the exterior of the pipe or flue, and a pointer, *d*, affixed to the end of the shaft-rod *a*.

This device will enable the attendant or occupant of the room to note the position of the damper at any time, and regulate the fire accordingly, if such regulation be of importance.

The rod B G and the graduations in the sector H may be so constructed and arranged as to indicate pyrometrically the degree of heat present within the pipe.

This invention is designed more particularly for stoves and other household warming-apparatus, but will be found of service in regulating the boilers of sugar-houses or the steam-generators of paper-mills and steam-

engines, and the adoption of such a device would conduce to no inconsiderable economization of fuel in these and other like circumstances.

It is simple, cheap, and not likely to become deranged or inoperative

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

The composite rod, composed of the metallic strips B G, of different expansibility, riveted together, and arranged, with relation to the damper and stove-pipe, as described, whereby the expansion of said rod causes it to move laterally, and thereby to close the damper, as herein shown and described.

The above specification of my invention signed by me, this 10th day of February, 1868.

GEORGE TAMKIN.

Witnesses:

WM. F. MCNAMARA,

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