N. PRUITT.

DAMPER.

APPLICATION FILED APR. 17, 1908.

969,188. **Patented Sept. 6, 1910.**

Fig. 1.

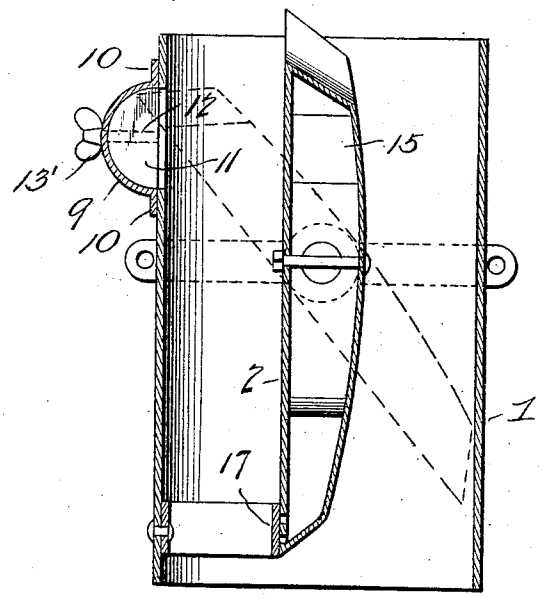
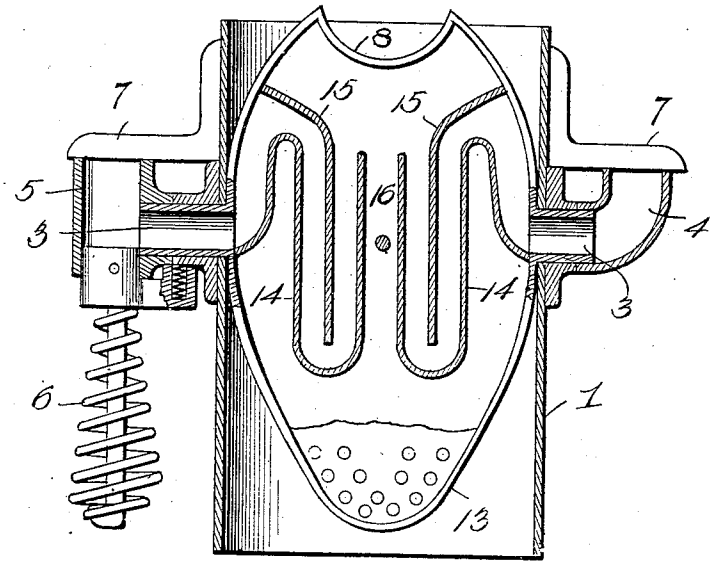


Fig. 2.



Witnesses

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NORMAN PRUITT, OF WASHINGTON, DISTRICT OF COLUMBIA.

DAMPER.

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To all whom it may concern:

Be it known that I, NORMAN PRUITT, a citizen of the United States, residing at Washington, in the District of Columbia, have invented a certain new and useful Damper, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to dampers, the object in view being to improve and render more effective and economical the construction illustrated and described in Patent Number 835,915, granted to me November 13, 1906, the invention having in view the provision of means for regulating the amount of draft when the damper is in its closed position; also means for effecting and more thoroughly heating the fresh air introduced to the interior of the flue through the medium of the hollow damper.

With the above and other objects in view, the nature of which will more fully appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts as hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a vertical longitudinal section of a flue section showing the damper arranged therein and the means for providing additional draft when the damper is closed. Fig. 2 is a view taken at right angles to Fig. 1, showing a sectional plan of the damper.

Referring to the drawings, 1 designates a flue section which constitutes the casing or housing of the damper of this invention.

The damper shown at 2 is of the hollow construction described in my previous patent referred to, and provided with hollow trunnions 3 through which the air is admitted into the damper from the outside of the flue by means of the elbow and tee-connections 4 and 5, respectively, 6 designating a handle for turning the damper to a closed or open position or to an intermediate position as may be desired.

7 designates the stops or closures for the connections 4 and 5 when the damper is moved to the position illustrated in Fig. 2. The damper is also shown as provided with a segmental or half-moon shaped recess 8 in one end thereof which provides for a reduced draft even when the damper is entirely closed, it being understood that when the damper is turned from the vertical position shown in Figs. 1 and 2, which is the open position, said damper, by reason of its shape will form a closure for the flue with the exception of the segmental or half-moon shaped recess 8 which provides for a materially reduced and sufficient draft.

In carrying out the present invention, to provide for greater draft and thereby enable the user of the device to satisfactorily regulate the draft when the damper is closed, I provide the main flue casing or housing 1 with a hollow offset 9 which may be formed separately from the flue, if desired, and provided with flanges 10 by which it is attached to the main flue 1 as illustrated in Fig. 1. Within the hollow extension 9 is arranged an additional auxiliary damper 11, the shaft 12 of which extends outward through an opening in the offset 9 where it is provided with a suitable operating handle 13′. The shape of the auxiliary damper 11 may be varied as well as the shape of the hollow offset 9 and it will also be apparent that the capacity of said hollow offset and auxiliary damper may be widely varied. Furthermore, the manner of mounting the auxiliary damper 11 within the offset may be changed, the main feature of the invention being that the casing 1 is provided with a hollow offset which registers substantially with the half-moon shaped recess 8 of the hollow damper when the damper is closed, which hollow offset is controlled by an auxiliary damper whereby the minor draft in the flue when the damper is closed may be regulated.

At the end of the damper opposite the recess 8, said damper is provided with exit perforations 13 for the escape of the heated air from the hollow damper. In order to effectively heat the air which is received through the trunnions 3, the damper is provided internally with U-shaped baffle walls 14 and other baffle walls 15 which lie between the opposite portions of the baffle walls 14 thereby forming tortuous or S-shaped passages which act to deflect or conduct the in-coming air back and forth lengthwise of the damper a plurality of times so that before the air traverses the final passage 16 between the two sides or baffles, it is thoroughly heated and escapes in such heated condition through the exit openings 13. It will be seen that when the air enters the hollow trunnions 3 it passes first toward that end of the damper in which the half-moon shaped recess 8 occurs. The air is

then deflected and carried toward the opposite end of the damper. It is then again deflected and carried back in the same direction as at first and finally the air is centralized and forced to pass through the central passage 16 toward the end of the damper where the openings 13 occur, the air escaping through said openings into the flue and greatly aiding combustion by supplying heated oxygen above the bed of coals.

17 designates a rest for the lower end of the damper when in a vertical or open position.

I claim:—

1. The combination of a pivoted damper, and a flue controlled by said damper and provided with a hollow outward extension having its inner side open and in line with the edge of the damper when closed, said extension being located above the axis of the damper and constituting a by-pass directly around the free edge of the damper when closed.

2. The combination with a flue having a hollow offset, of a hand operated damper controlling the main body of the flue and provided with a recess in its edge which in connection with the offset in the flue wall forms a draft opening around the free edge of the damper when closed, and means independent of the said damper for regulating the size of said shaft opening.

3. The combination with a main damper, of a flue having a hollow outward extension having the inner side thereof open and forming a by-pass directly around the edge of the damper when closed, and an auxiliary hand-operated damper operable independently of the main damper and controlling such by-pass.

In testimony whereof I affix my signature in presence of two witnesses.

NORMAN PRUITT.

Witnesses:

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