C. M. JENSEN.

DAMPER.

APPLICATION FILED MAR. 7, 1919.

1,408,204.

Patented Feb. 28, 1922.

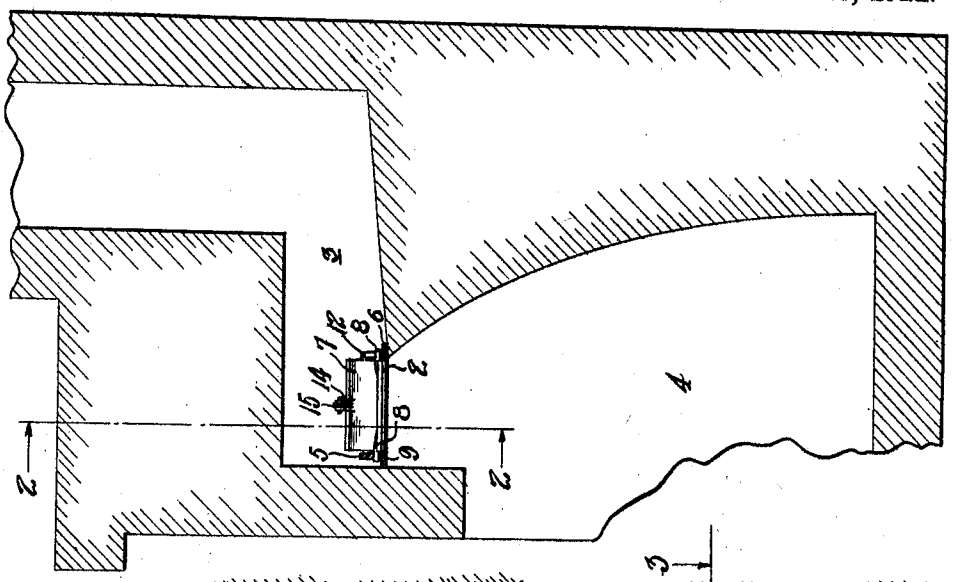


Fig. 1

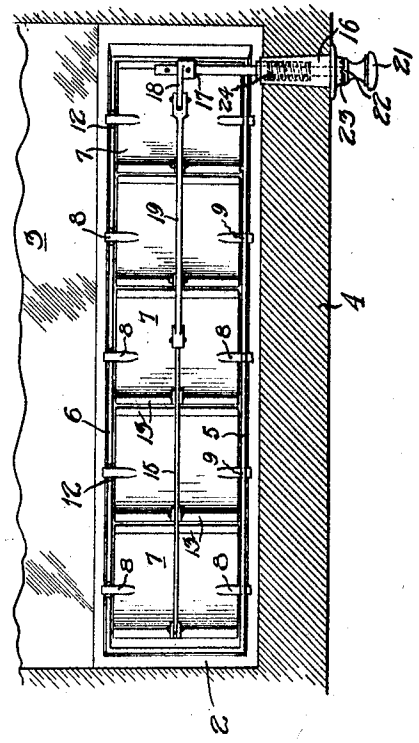


Fig. 3

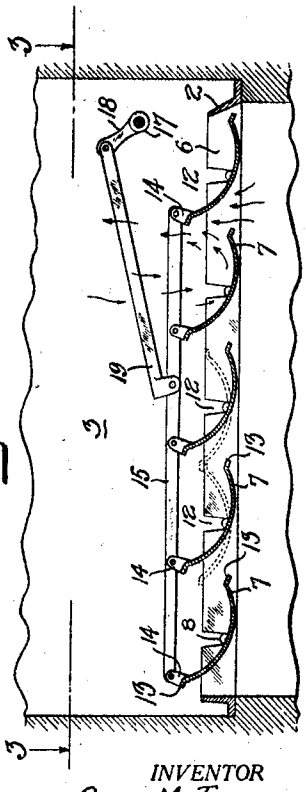


Fig. 2

WITNESS

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INVENTOR

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UNITED STATES PATENT OFFICE.

CARL M. JENSEN, OF OAKLAND, CALIFORNIA, ASSIGNOR, BY MESNE ASSIGNMENTS, OF ONE-HALF TO LEONARD D. FRAZEE, OF OAKLAND, CALIFORNIA.

DAMPER.

1,408,204. Specification of Letters Patent. Patented Feb. 28, 1922.

Application filed March 7, 1919. Serial No. 281,171.

To all whom it may concern:

Be it known that I, CARL M. JENSEN, a citizen of the United States, and a resident of Oakland, county of Alameda, State of California, have invented a new and useful Damper, of which the following is a specification.

My invention relates to improvements in dampers and particularly to those adapted for use in a chimney or flue from a fire-place.

An object of the invention is to provide a device of this character which will convert the incoming or down draft in a flue to an outgoing or up draft, thereby increasing the outgoing draft and preventing the incoming draft from forcing its way into the fire-place to expel the burnt gases into the interior of the building.

Another object of the invention is to provide simple means which will not only permit the efficient regulation of the damper but which presents only a small exposed portion for manipulation of the damper.

A further object of the invention is to provide a device embodying these features which is exceedingly simple in construction and easy to assemble.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of my invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood that I do not limit myself to the showing made by the said drawings and description, as I may adopt variations of the preferred form within the scope of my invention as set forth in the claims.

Referring to the drawings:

Fig. 1 is a vertical sectional view of a fire-place equipped with my invention.

Fig. 2 is a vertical sectional view of the fire-place and damper on an enlarged scale. The plane of section is indicated by the line 2—2 of Fig. 1.

Fig. 3 is a horizontal sectional view taken on the line 3—3 of Fig. 2.

In general terms my invention comprises a plurality of concave plates so arranged within the flue as to prevent passage of the air or gas currents when the plates are in closed relation and adapted to convert the incoming air currents into outgoing currents when said plates are in spaced relation.

A detailed description of my invention follows:

The damper comprises a rectangular frame 2 suitably fixed in the flue 3 formed in the upper portion of the fireplace 4. Pivotally supported in the side members 5 and 6 of frame 2 are a plurality of concave plates 7 spaced equidistantly and disposed in a plane transversely of the path of the gases passing through the damper. The plates are each provided on opposite ends intermediate the edges with alined pivot lugs 8. The lugs arranged on one end, engage in apertures 9 formed in the side 5 of the frame, while the lugs on the other end seat in open slots 12 formed in the side 6. This construction facilitates the ready assembling of the plates in the frame. The plates 7 are of such width as to overlap slightly when they are in closed relation. The portions of the plates adapted to overlap comprise flat extensions 13 which afford sufficient area of contact to insure an efficient seal when the plates contact with each other to effect a closure of the damper.

Means are provided for moving the plates in unison to either a position of closed or spaced relation. Formed on the same edge of each plate are integral lugs 14 which are pivotally secured to a rod 15. Journaled in the bearing 16 which is fixed in the front wall of the fire place is a crank 17 whose arm 18 is secured to the rod 15 by means of a link 19. The free end of the crank is formed with a knob 21 and rotation of the knob produces a corresponding movement of the plates to open or close the damper.

Means are also provided for locking or retaining the plates in the closed position or in any open position as adjusted by the knob 21. In the present form this function is performed by locking the crank in the position which produces the desired relation of the plates. The inner face of the crank knob 21 is formed with a stud 22 which is adapted to engage any one of a series of notches 23 formed in the outer face of the bearing 16. The knob is held in resilient engagement with the bearing by a spring 24 disposed about the crank and abutting on one end against the inner face of the bearing 16.

In the operative or open position of the damper as is best shown in Figure 2 the gases of combustion pass through the damper between the concave plates, thus restrict-

ing the respective areas between the plates for the passage of outgoing currents. Consequently the incoming streams of air which are directed against the damper, impinge on the curved surfaces of the plates and due to the inclination of the plates and the concave form thereof, the air is deflected toward and in the direction of the escaping or outgoing streams of burnt gases. The down draft or incoming air currents are thus not only prevented from passing through the damper, but reverse their direction and tend to augment the suction through the spaces between the plates, which draws the burnt gases from the fire place.

I claim:

The combination with a chimney having a throat provided with a shoulder, of a damper structure comprising a frame having a flat flange at its base to rest on said shoulder, the frame having parallel upstanding side parts which are notched, downwardly from the top, nearly to the base flange, the notches being opposite to each other in the side walls; damper plates having medial trunnions at opposite sides to be disposed and pivot in the bottoms of the said slots, the plates being adapted to rock to open and close position in the frame; and a link connected to each of the damper plates and being connected to an operating device to adjust the damper plates.

In testimony whereof, I have hereunto set my hand at Oakland, California, this 28th day of February 1919.

CARL M. JENSEN.

In presence of—
J. B. GARDNER,
N. M. ISAAC.