Aug. 11, 1925. 1,549,231

J. B. STOKES

CHIMNEY DAMPER

Filed Sept. 10 1924

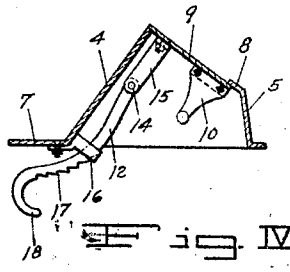


Fig. IV

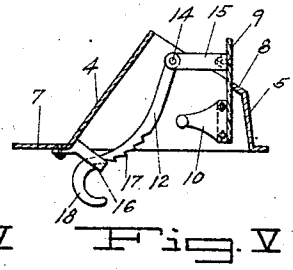


Fig. V

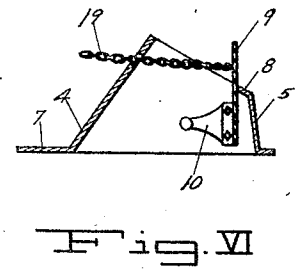


Fig. VI

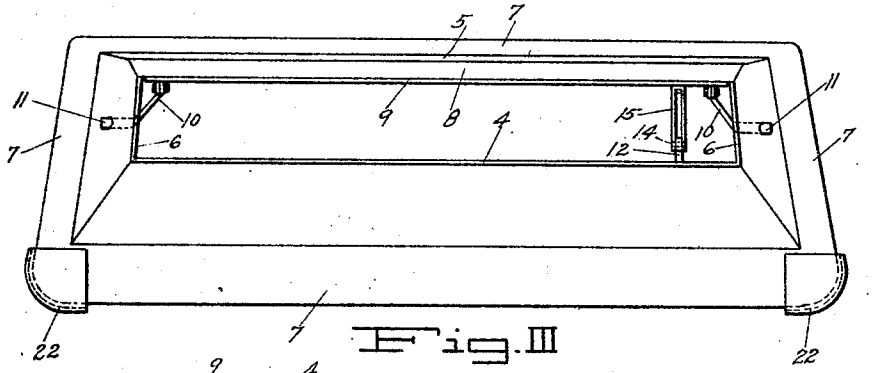


Fig. III

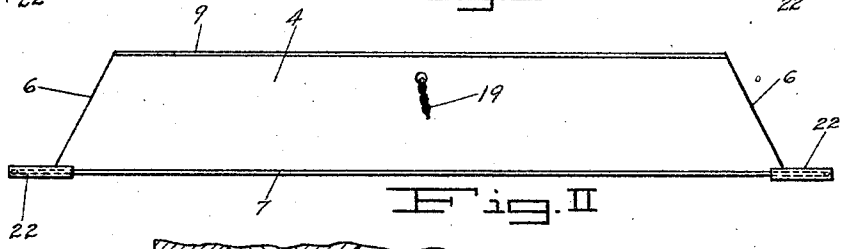


Fig. II

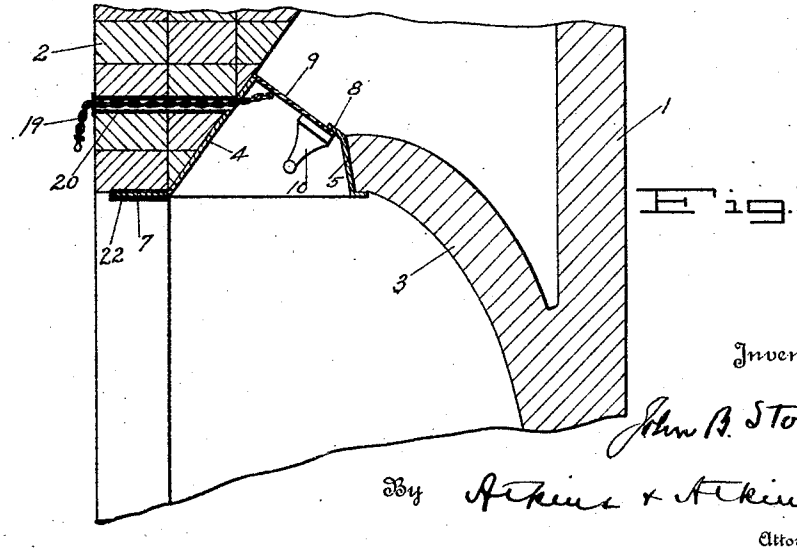


Fig. I

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UNITED STATES PATENT OFFICE.

JOHN B. STOKES, OF PORTLAND, OREGON.

CHIMNEY DAMPER.

Application filed September 10, 1924. Serial No. 736,902.

To all whom it may concern:

Be it known that I, JOHN B. STOKES, a citizen of the United States of America, and resident of Portland, in the county of Multnomah, in the State of Oregon, have invented a certain new and useful Chimney Damper, of which the following is a specification, reference being had to the accompanying drawing.

My invention relates to means for regulating the draught of chimneys, and is intended mainly for use in connection with fire places.

In chimney dampers it is usual to employ a damper whose weight tends to close the chimney automatically by the action of gravity. This has proved to be often objectionable, and upon occasion to be a source of danger by setting fire to the house in which it is placed, in consequence of the closure of the damper from some accidental or unintentional cause.

It is, therefore, a main object of my invention to provide a damper which opens by gravity, and which can be closed only by positive manipulation of its regulative mechanism. Other objects of my invention will be apparent from the following specification.

What constitutes my invention will be hereinafter described in detail and succinctly defined in the appended claims.

In the accompanying drawing,

Figure I is a vertical cross-sectional view of a chimney throat, and of my invention, in preferred form of embodiment, operatively installed therein.

Figure II is a front elevation of the damper frame shown in Figure I, detached.

Figure III is a top plan view of the damper frame and its damper regulating mechanism detached.

Figure IV is a vertical cross section of the subject matter of Figure III, showing the damper closed.

Figure V is a view similar to Figure IV showing the damper in the completely open position.

Figure VI is a view similar to Figure V illustrative of a modification of the damper regulating mechanism.

Referring to the numerals on the drawing, 1 indicates a chimney back, 2 a chimney breast, and 3 a chimney throat-defining wall. The parts above named may be of any usual or suitable and preferred shape, relationship, material and dimensions. Confined and supported within the throat defined between the breast 2 and the wall 3, I provide a damper supporting-frame, which consists, preferably, of an oblong metallic casting comprising a preferably inclined front wall 4, and an opposing rear wall 5 united as by opposite end walls 6, the several walls aforesaid being joined together by a peripheral flange 7.

The rear wall 5 preferably includes an overhanging flange 8 which represents any suitable stop-piece, and which defines on the rear side of the supporting frame, between it and the upper edge of the wall 4, an open space designed to be opened and closed, at will, by a damper plate 9.

The damper plate 9 preferably consists of a metallic casting of suitable weight and of dimensions adapted to close the said space within which it is operatively hung and with the least obstruction thereof when open. The preferred means for hanging the damper plate comprises ears or arms 10 provided at opposite ends thereof on one side of its longitudinal axis. Said ears are pivotally united to the end walls 6, respectively, as indicated by the numerals 11, they and their pivotal points 11 being relatively disposed so that the swinging of the damper plate will cause it to assume at one limit of its pivotal movement the position upwardly inclined towards the breast 2 which is illustrated in Figure I, and at the other limit of its pivotal movement the substantially vertical position it occupies in Figure V. Furthermore, the ears or arms 10 are positioned so as to act as counterweights and normally tend to cause the damper plate 9 to assume the open position indicated in Figures V and VI. It may be observed that an important preferred function of the flange 8 is to serve in the capacity of a stop-piece for the damper plate in either of the positions last indicated.

Actuating means are provided for the regulation of the damper through positive manipulation. Such means may consist, by way of example, of the notched lever shown in Figures IV and V, or of the chain pull shown in Figures I and VI.

In respect to the lever form of actuating means, a simple and therefore preferred kind of lever is shown in Figures IV and V, wherein a conveniently curved bar 12 is shown as pivoted at one end as indicated by

the numeral 14 to a fixed stud 15 projecting at right angles from one side of the damper plate 9. The bar passes through a stirrup 16 which projects from the wall 4 and is provided for engagement with the stirrup with a succession of notched teeth 17. The said bar terminates at its free end in a hook 18 which serves for its manipulation and to assist in keeping it in place.

Instead of the bar 12 and its connections, a chain 19 may be employed for adjusting the damper in order to regulate its position and thereby to shut off or to control at pleasure the chimney draught. The chain 19, when employed, preferably extends through a pipe 20 or like extended opening in the breast 2, and is provided with any suitable and ordinary means for fixing it at any desired adjustment of length.

At each of the two opposite forward corners of the flange 7 of the damper supporting frame, I provide, for a definite purpose, a corner pocket 22. Said pockets are preferably made of sheet metal bent into shape and dimensions adapting them each snugly but loosely to fit its appropriate corner. The purpose of these pockets is to allow for contraction and expansion by variation of temperature of the damper supporting frame and its flange 7 without disturbing the masonry or the like material in which said frame by aid of its flange 7 is set. Without such provision as said pockets afford, the frame will in use after a time tend to work loose from its supporting masonry; but the pockets by their presence enable the flange to slip back and forth as in a sheath without in any wise disturbing the joints which unite the pockets and the masonry into a firm unitary structure or common mass.

No further description of the operation of my device appears to be required, in view of the foregoing specification, than the statement that the ears 10 and their pivotal supports 11 are such as to dispose the weight of the damper plate so as to render it self-opening by the action of gravity. Consequently, the function of the bar 12 or of the chain 19 is always to resist the said self-opening tendency, and upon adjustment to secure the damper-plate in any position desired between the limits of its complete closure as shown in Figure IV and the vertical position it occupies when fully open as shown in Figure V, for example.

What I claim is:

1. A damper of the class described, comprising a casing, having an open top and converging side and end walls, the rear wall terminating at its upper edge in an inwardly projecting flange, a tilting damper plate having arms pivotally connected to the sides of the casing adjacent the rear thereof, said arms serving as a counterweight to maintain said damper plate in open position, said damper plate arranged to abut the flange on the rear wall of the casing to limit its forward and rearward movement, the open top of the casing being in a plane substantially inclined with respect to the base of the casing and the damper plate when closed having a position substantially in the inclined plane of the open top, and means connected to the damper plate to actuate the same.

2. A damper of the class described comprising a casing having an open top and side and end walls, a tilting damper plate for closing said top and having arms pivotally connected to the sides of the casing, said arms being arranged to serve as a counterweight and to maintain the damper plate normally in open position, and means on the casing for limiting the movement of said damper plate in either direction.

In testimony whereof, I have hereunto set my hand.

JOHN B. STOKES.