May 10, 1938. J. M. TAPLEY 2,116,648

DAMPER

Filed April 1, 1936

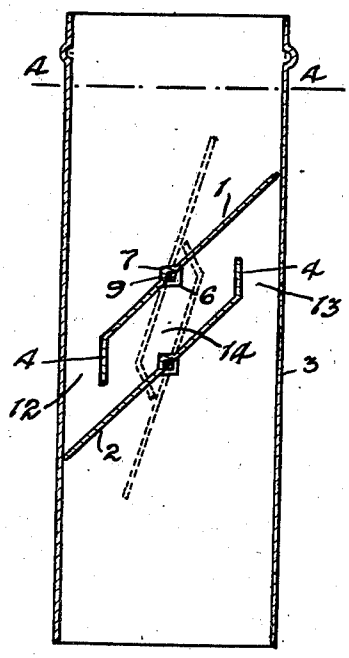


Fig. 1

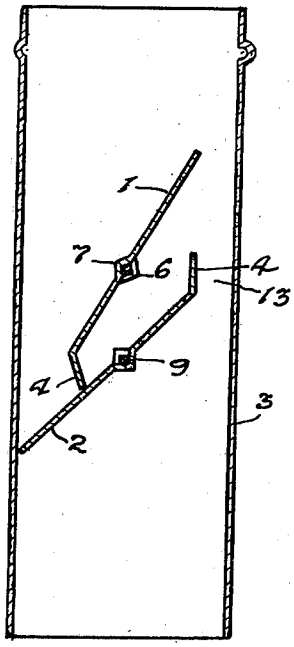


Fig. 2

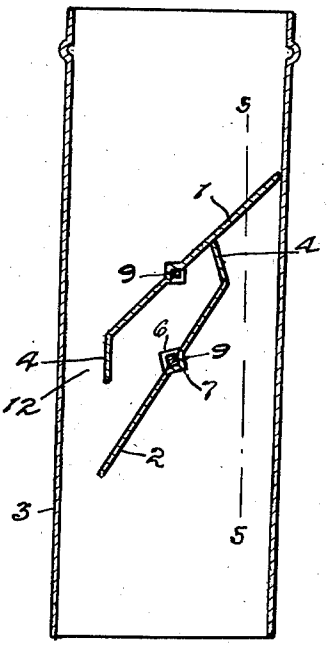


Fig. 3

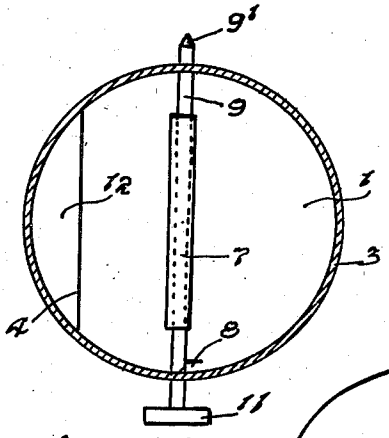


Fig. 4

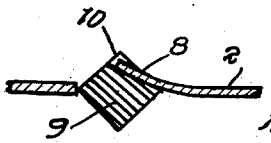


Fig. 7

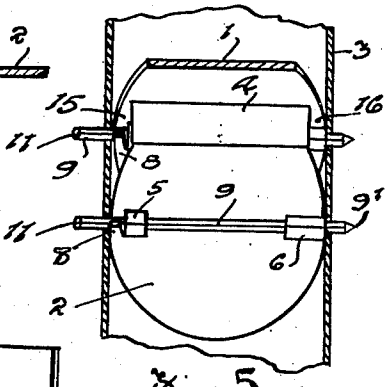


Fig. 5

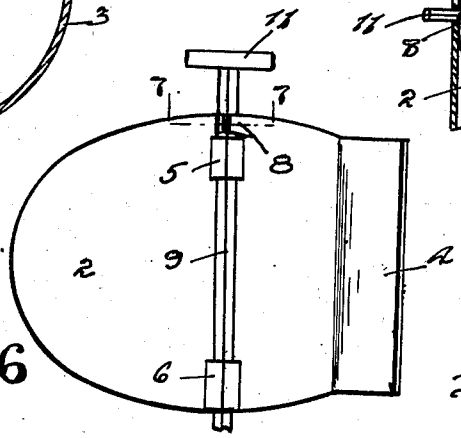


Fig. 6

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UNITED STATES PATENT OFFICE

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DAMPER

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Application April 1, 1936, Serial No. 72,185
In Canada April 1, 1935

1 Claim. (Cl. 126—296)

The invention relates to dampers, and particularly to check dampers for insertion in a length of pipe, and an object of the invention is to provide a pair of similar check dampers which can be manufactured at low cost and can be easily and quickly inserted in a length of pipe and thereafter independently operated to bring them into various positions relative to one another and the pipe for draft checking purposes.

A further object is to construct and arrange the dampers so that when installed in the pipe and in their closed positions, there is a downwardly inclining smoke passage or chamber formed therebetween through which the smoke is compelled to pass in its outward travel and further to provide each damper with an end wing or vane adapted in the latter position of the dampers to partially close the ends of the smoke passage and produce a churning effect of the smoke in the chamber and in other positions of the dampers to act as stops or partial stops for the draft between the dampers.

A further object is to construct each damper a duplicate of the other, thereby facilitating in manufacturing and installing.

A further object is to provide a pair of check dampers which will operate with equal facility in either the vertical or horizontal position of the pipe in which they are used.

With the above objects in view, the invention consists essentially in the arrangement and construction of parts hereinafter described, reference being had to the accompanying drawing, in which

Figs. 1, 2, and 3 are vertical sectional views centrally through the pipe and check dampers and showing the dampers in various operating positions.

Fig. 4 is an enlarged horizontal sectional view at 4—4, Fig. 1.

Fig. 5 is a vertical sectional view through one of the dampers at 5—5, Fig. 3, the pipe being shown in a vertical section passing centrally therethrough.

Fig. 6 is an enlarged plan view of one of the dampers.

Fig. 7 is an enlarged vertical sectional view at 7—7, Fig. 6.

In the drawing like characters of reference indicate corresponding parts, in the several figures.

In carrying out my invention I insert an upper check damper 1 and a lower check damper 2 in a length of pipe 3. The dampers are both identically constructed, each being made from a sheet metal plate cut for the greater part in the form of an ellipse and having one end provided with a wing or vane 4 positioned at an obtuse angle to the plate body. At its minor axis the plate is slotted and then presses in one direction to provide non-circular end channels 5 and 6 and then in the other direction to provide an intervening channel 7. A spring tongue 8 is also formed from the material of the plate, being positioned adjacent one of the end channels.

The channels are herein shown as of a flattened V-shape and they receive the damper rod 9, in the well known manner, the arrangement being such that the applied damper turns with the rod. The rod is supplied with a notch 10 adapted to receive the spring tongue and such arrangement prevents end shifting of the rod in respect to the applied damper. The rod has one end sharpened or pointed at 9^1 and the other end supplied with a handle or hand grip 11.

The dampers are placed in the pipe in the usual way and when installed are independently adjustable, friction being relied upon to keep them in any adjusted position.

The dampers are shown in their closed position in Fig. 1 and here it will be observed that the upper damper takes an inclined position within the pipe and closes the pipe with the exception of the opening appearing at 12 between the downturned wing of such damper and the pipe body and that the lower damper is parallel to and spaced from the upper damper and closes the pipe with the exception of the opening appearing at 13 between the wing of the lower damper and the pipe body. It will also be seen that between the closed dampers there is a downwardly inclining smoke passage or chamber 14, the ends of which are partially closed by the oppositely disposed wings.

With the dampers set in closed position, the smoke travels up through the opening 13, then down through the passage 14 and finally up through the passage 12. The arrangement is such that a churning of the smoke is caused in the chamber 14 and this together with the restricted area and down travel occasioned, serves very effectively in checking the draft through the pipe.

In Fig. 2 the dampers are set in a partially open position, here it will be observed that the lower damper is in the same position as in Fig. 1 but the upper damper has been turned to bring its wing into contact with the lower damper. A direct outlet smoke passage is thereby formed at the right hand side of the pipe and no smoke travels between the dampers.

In Fig. 3 the upper damper is set in the same position as in Fig. 1 and the lower damper has been moved to bring its wing into contact with the upper damper. With this setting of the dampers the smoke travels not only through the left hand side of the pipe but also in a downward direction between the dampers, as it will be seen (see Fig. 5) that there are side escape passages at **15** and **16** between the lower damper wing and the pipe.

In Fig. 1, I have shown in dotted outline, the fully open position of the dampers and which position allows of free draft through the pipe.

I might mention that these dampers operate as effectively in either the horizontal or vertical position of the pipe, and may also point out that it is an easy matter to keep the dampers clean as they can be readily tapped together to remove any accumulated soot.

What I claim as my invention is:

In pipe dampers, the combination with a length of pipe, of a pair of similar independently mounted and operable, selectively spaced check dampers contained within the pipe and constructed to provide in their closed position an inclined descending smoke passage between the dampers and having the upper end of the lower damper provided with an end wing extending towards the upper damper and partially closing the one end of the passage and the lower end of the upper damper provided with an end wing extending towards the lower damper and partially closing the other end of the passage.

JAMES MART TAPLEY.