Jan. 2, 1923.

A. C. MOTT, JR.
DAMPER.
FILED DEC. 1, 1921.

1,441,107

2 SHEETS-SHEET 1

Fig. 3.

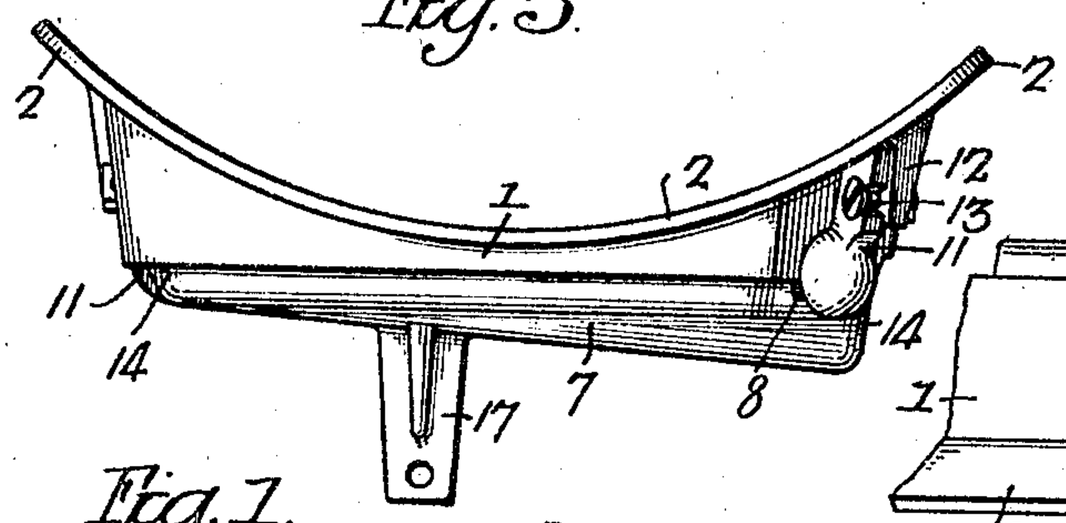


Fig. 5.

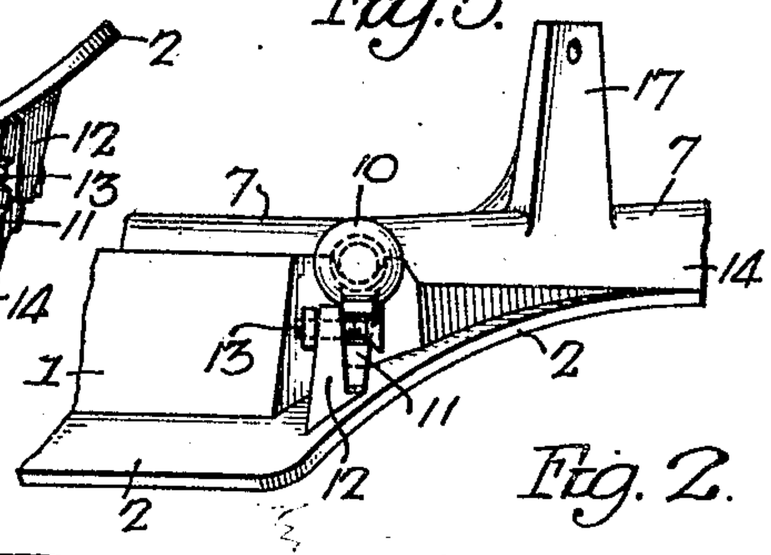


Fig. 1.

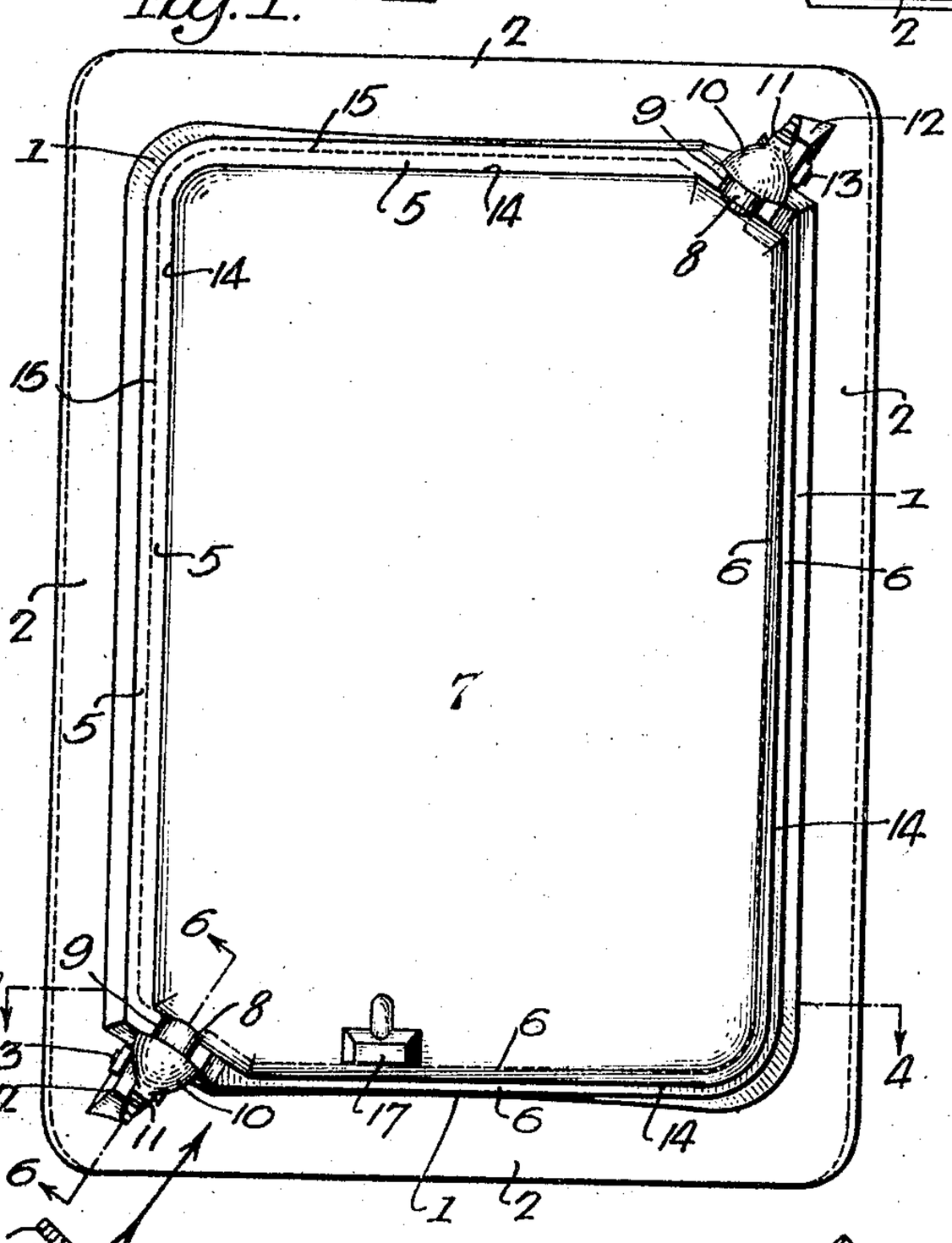


Fig. 2.

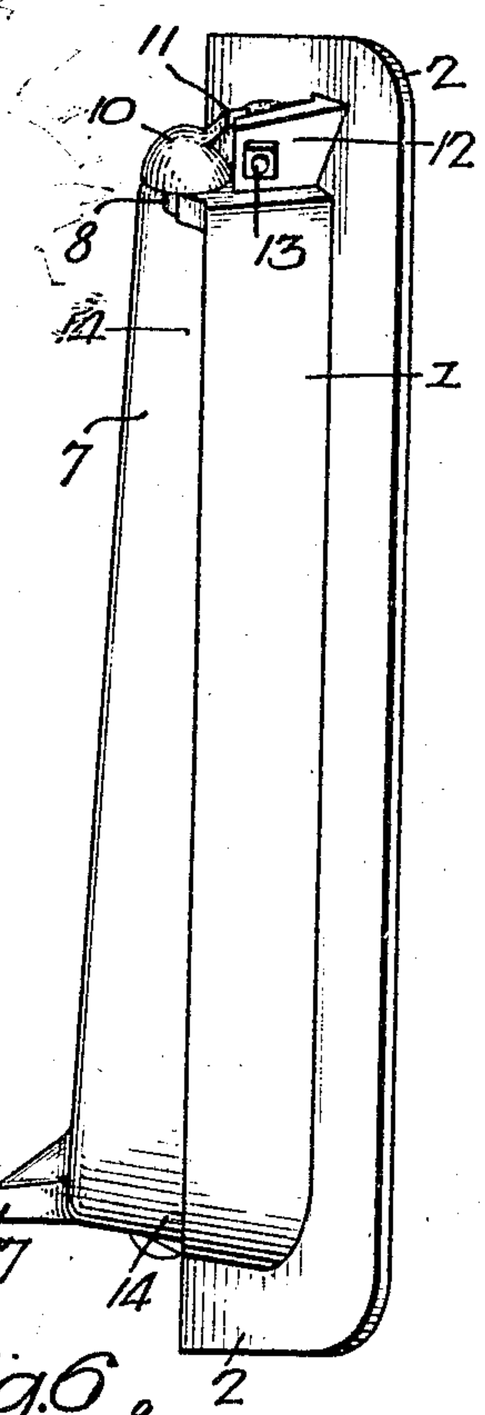


Fig. 4.

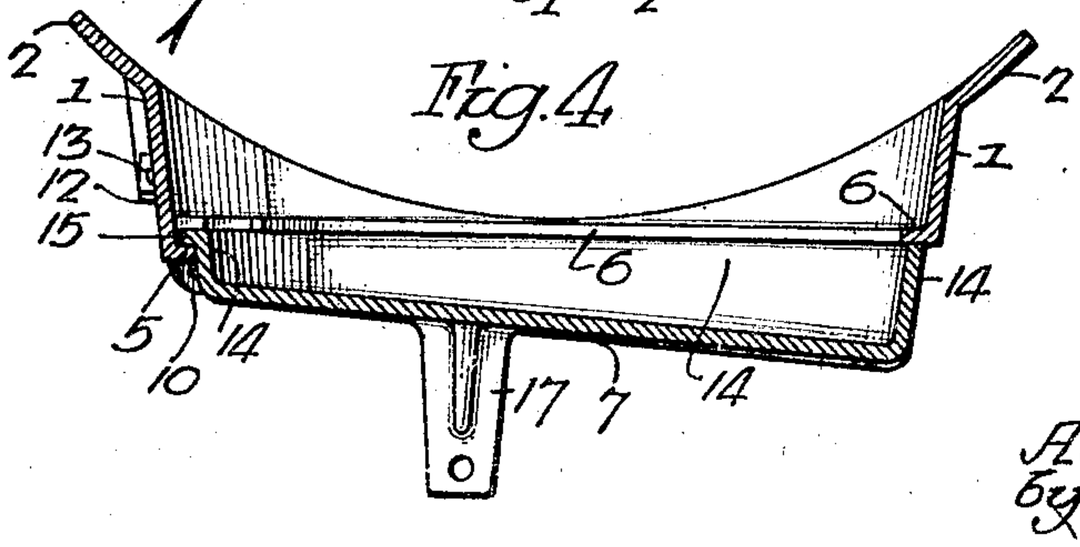
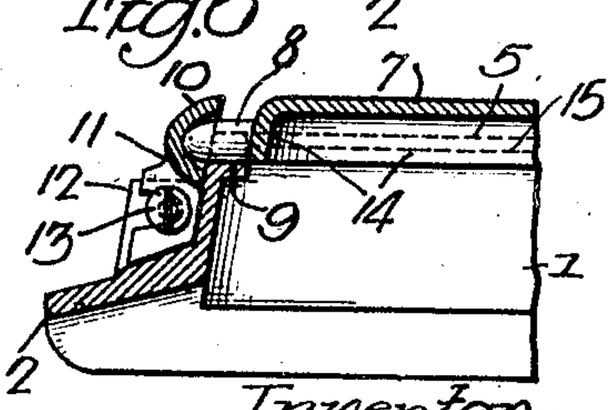


Fig. 6.



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2 SHEETS-SHEET 2

Fig. 8

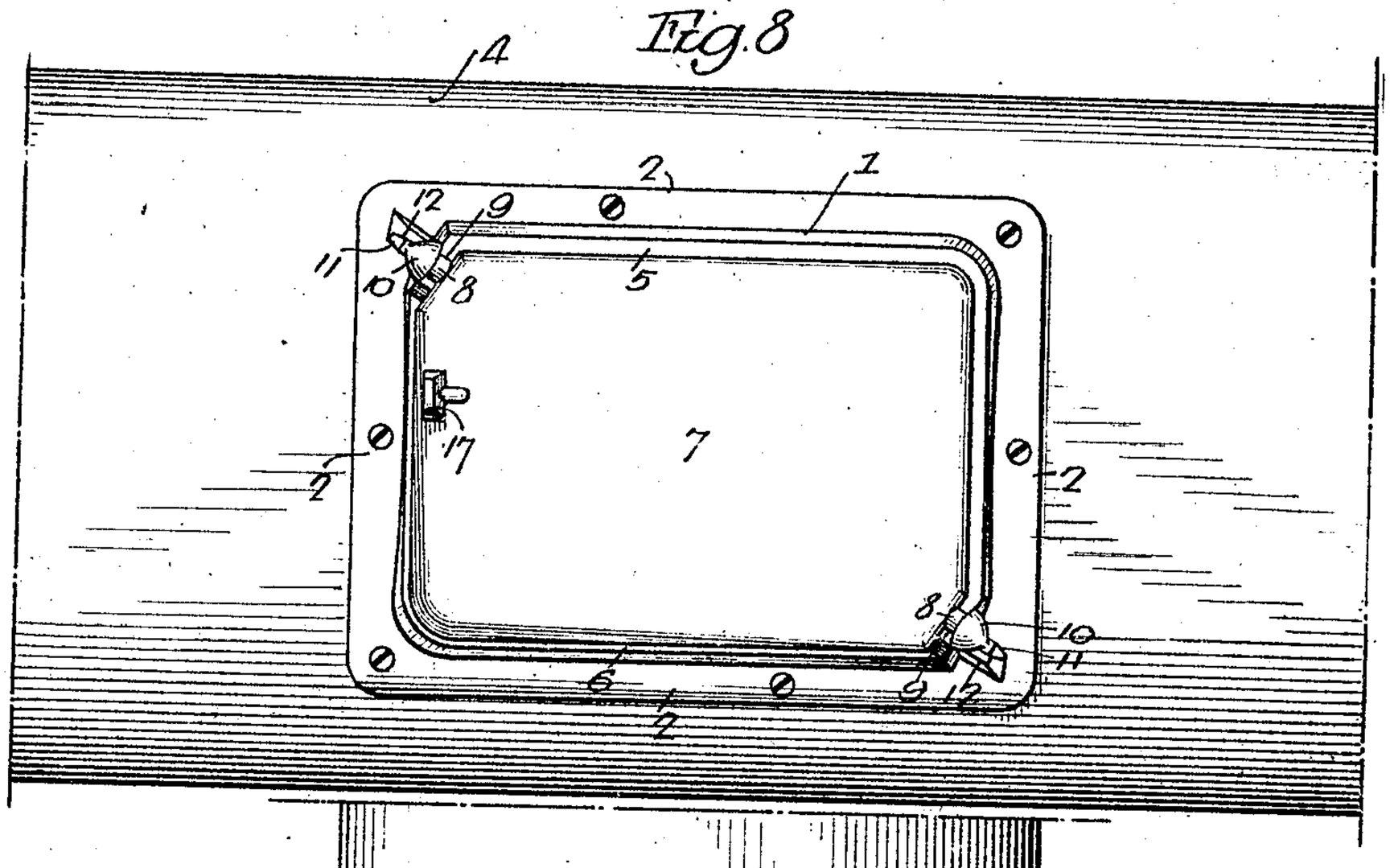


Fig. 7.

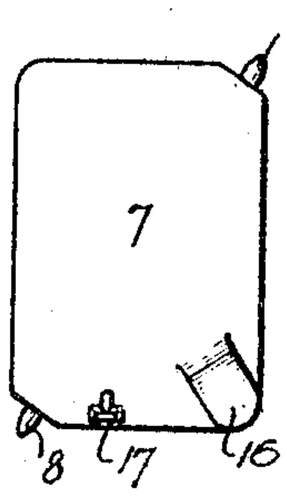


Fig. 9.

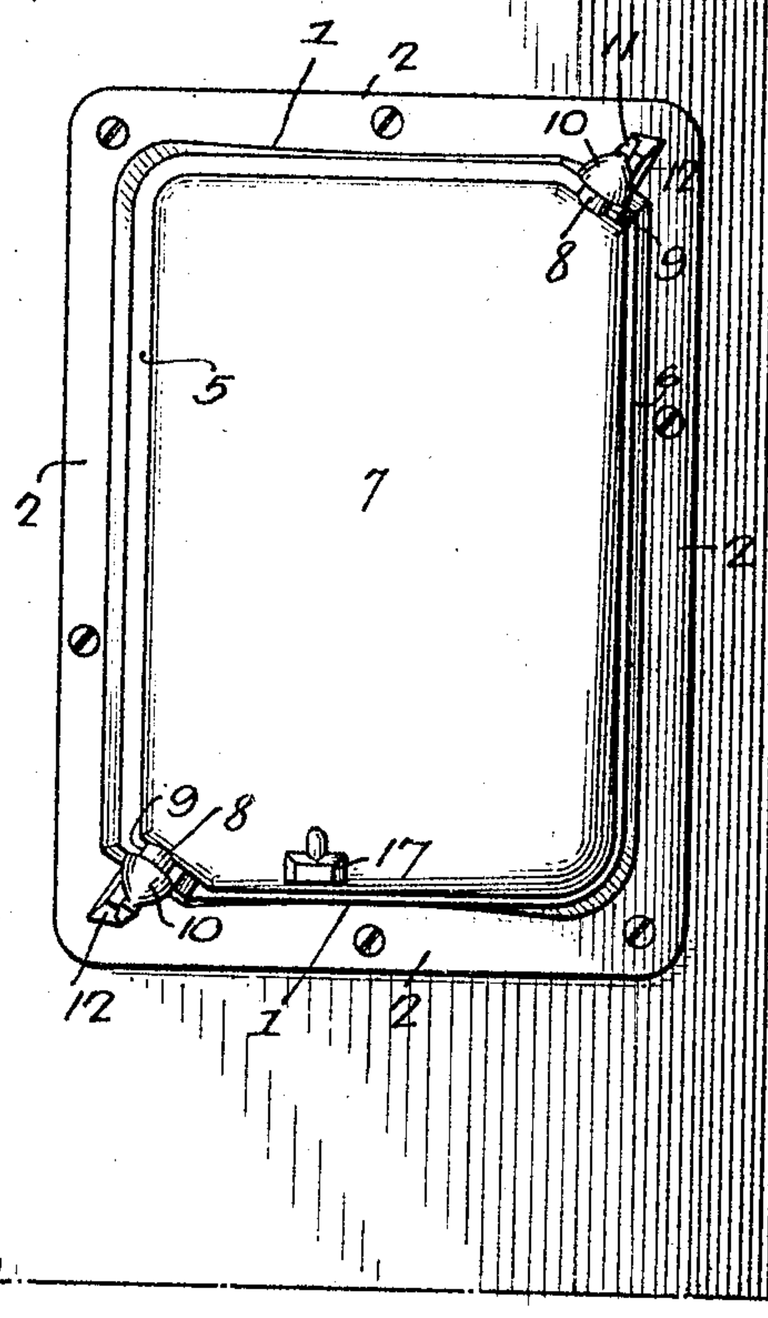
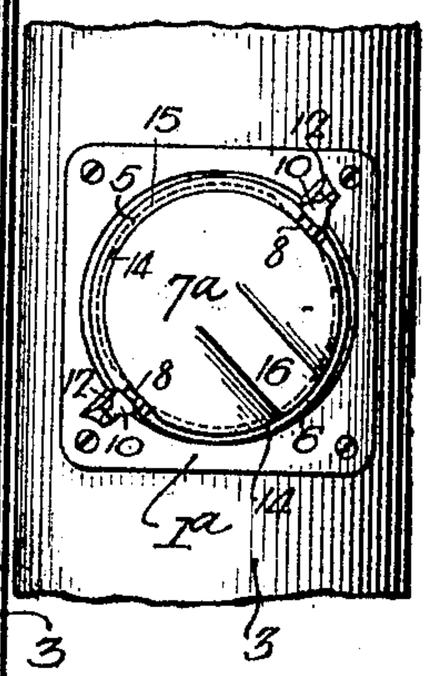


Fig. 10.



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Patented Jan. 2, 1923. 1,441,107

UNITED STATES PATENT OFFICE.

ABRAM C. MOTT, JR., OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO ABRAM COX STOVE COMPANY, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

DAMPER.

Application filed December 1, 1921. Serial No. 519,606.

To all whom it may concern:

Be it known that I, ABRAM C. MOTT, JR., a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Dampers, of which the following is a specification.

The object of my invention is to construct a damper of the type adapted to be applied to smoke pipes, or flues, so that it can be used with a vertical pipe or with a horizontal pipe without making any change in the pivoting of the damper.

This object I attain in the following manner, reference being had to the accompanying drawings, in which:

Fig. 1 is a face view of my improved damper;

Fig. 2 is a side view;

Fig. 3 is an end view;

Fig. 4 is a sectional view on the line 4—4, Fig. 1;

Fig. 5 is an end view looking in the direction of the arrow, Fig. 1;

Fig. 6 is a sectional view on the line 6—6, Fig. 1;

Fig. 7 is a view showing the damper secured to a vertical pipe or flue;

Fig. 8 is a view showing the damper secured to a horizontal pipe or flue; and

Figs. 9 and 10 are views of modifications of the invention.

Referring to the drawings, 1 is the frame of the damper curved at the back to fit a flue of a given size and it has a flange 2 on all four sides. This flange has bolt or rivet holes by which it can be attached to a vertical flue 3 or a horizontal flue 4. The opening in the damper is rectangular in the present instance and the internal flanges 5 of the frame 1 extend on two sides, while the flanges 6 extend on the other two sides. The damper plate 7 has trunnions 8 at diametrically opposite corners. These trunnions fit in recesses 9 in the frame 1. The ends of the trunnions are rounded or tapered to fit corresponding sockets 10 in brackets 11, which are secured to perforated lugs 12 by bolts 13 so that the damper plate is free to turn in the sockets. The plate 7 has a flange 14 on all four sides, but the flange on two of the sides is deeper than it is on the other two sides, as shown in Figs. 2 and 3. This portion of the flange bears against the face of the flanges 6 of the frame. On the other two sides of the plate is an outwardly projecting lip 15 which extends under the flange 5 of the frame so that, when the damper is closed, the lip 15 rests against the flange 5, while the edge of the plate rests against the outer surface of the flange 6.

By making the damper plate with a flange deeper at one side than at the other, that portion of the plate having the deeper flange overbalances the other portion in weight and tends to keep the damper in the closed position. In some instances the damper plate may be made without a flange, in which case a weight 16 is provided on one side, as illustrated in Fig. 9.

17 is an arm projecting from the bracket. This arm is perforated to receive a chain, or rod, by which the damper is operated and held in any position desired.

While the damper is illustrated as applied to a flue, or smoke pipe, it will be understood that the damper may be applied to any portion of a furnace where the ordinary damper is used.

By my invention the number of sizes of damper parts necessary to be carried in stock can be materially reduced. A damper made in accordance with my invention can be used without alterations on a vertical flue or pipe or on a horizontal flue or pipe. It can also be applied to a pipe arranged at any angle.

In Fig. 10 I have shown a circular damper 7^a adapted to a similar opening in a frame 1^a, the pivot of the damper being located at diametrical corners of the frame as in Fig. 1.

In some instances the pipe or casing having the opening therein for the damper may form part of the frame, the bearings being attached directly to the pipe or casing.

I claim:

1. The combination in a damper of a frame; and a damper plate pivoted to the frame at diametrically opposite corners of the frame, the plate being weighted on one side of the pivot to keep the damper plate normally closed against the frame.

2. The combination in a damper of a frame; and a damper plate pivotally mounted on the frame at diametrically opposite corners, one of the other corners of the plate being weighted so as to normally close the damper.

3. The combination in a damper of a

frame adapted to be secured to a pipe or other structure, said frame having a rectangular opening therein; and a rectangular plate adapted to close the opening and pivoted to the frame at diametrically opposite corners, the damper plate being weighted on one side so as to normally close the plate against the frame.

4. The combination in a damper of a frame shaped to fit a pipe, the frame having a rectangular opening therein adapted to communicate with the interior of the pipe; and a plate arranged to close the opening and having pivots at diametrically opposite corners, the plate being flanged, said flange being deeper on one side than on the other so that the deep side acts as a weight to keep the damper plate closed against the frame.

5. The combination in a damper of a frame having a securing flange, said frame having a rectangular opening therein; a damper plate closing the opening and having trunnions at diametrically opposite corners; and sockets on the frame for the trunnions, the plate being flanged on all four sides and having a projecting lip on two sides, the frame having an inwardly projecting flange on two sides with which the lip comes in contact, the plate being weighted on the other side, said weight tending to keep the damper plate in the closed position.

6. The combination in a damper, of a frame; and a damper plate pivoted to the frame at substantially diametrically opposite corners of the frame, the plate being overbalanced in respect to the pivots so that normally it will remain in a closed position whether located on a horizontal pipe or on a vertical pipe.

ABRAM C. MOTT, JR.