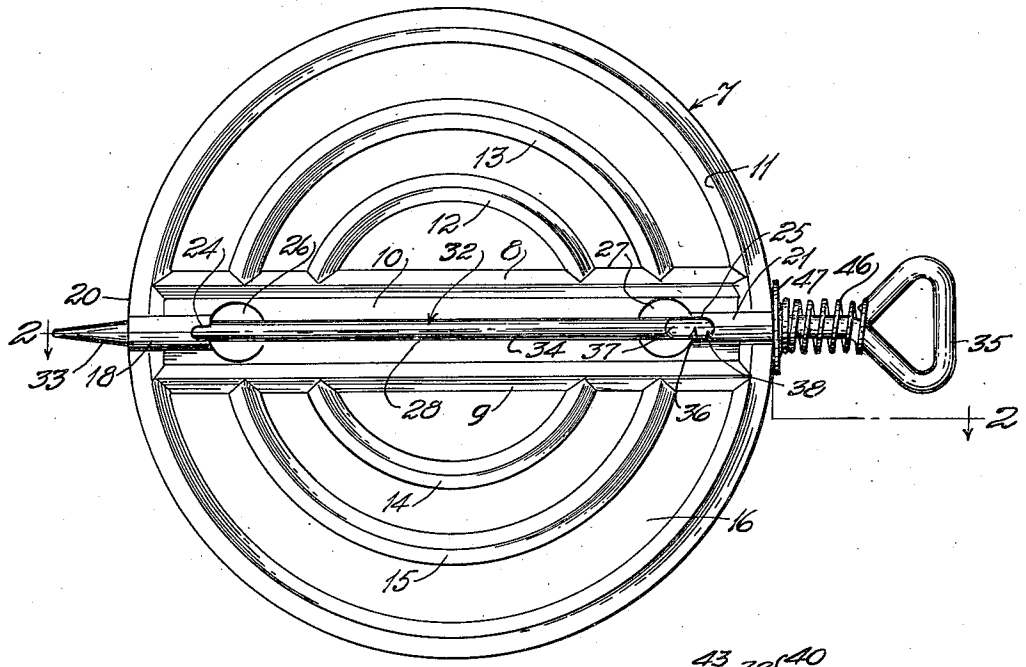
July 19, 1938. J. CORBMAN ET AL 2,124,484

DAMPER

Filed Feb. 15, 1937

Fig. 1.



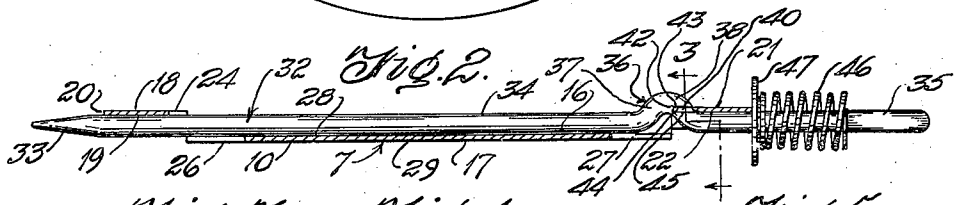


Fig. 3.

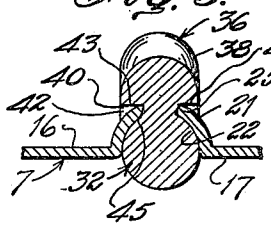
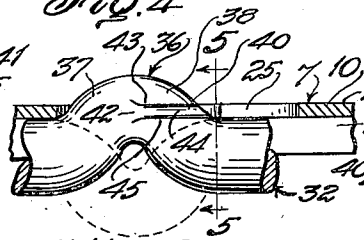


Fig. 4



3 Fig. 5.

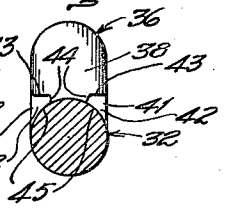
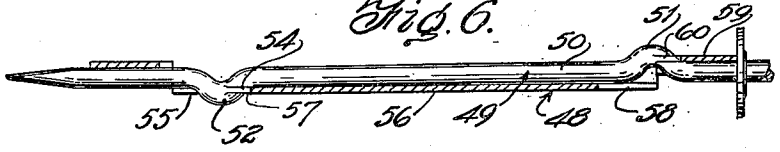


Fig. 6.



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DAMPER

Joseph Corbman and Samuel Corbman,
Philadelphia, Pa.

Application February 15, 1937, Serial No. 125,899

1 Claim. (Cl. 126—292)

This invention relates to dampers designed primarily for stove pipes, but it is to be understood that a damper, in accordance with this invention is to be employed in any connection for which it may be found applicable, and the invention has for its object to provide, in a manner as hereinafter set forth an article of the class referred to including a damper plate and a rotatable shaft or spindle therefor and with said plate and shaft having coacting means to cause them to bodily rotate together on the adjustment of the damper.

A further object of the invention is to provide, in a manner as hereinafter set forth, a damper including a damper plate and a shaft or spindle for the latter, and with the plate and shaft having coacting means to prevent one from sliding relative to the other on the adjustment of the damper.

Further objects of the invention are to provide, in a manner as hereinafter set forth, a damper of the class referred to which is simple in its construction and arrangement, strong, durable, compact, readily installed with respect to the stove pipe, conveniently adjusted, thoroughly efficient in its use, and comparatively inexpensive to manufacture.

To the above ends and to others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically described and as are illustrated in the accompanying drawing wherein is shown embodiments of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawing:

Figure 1 is an elevation of the damper,

Figure 2 is a section on line 2—2, Figure 1,

Figure 3 is a section on line 3—3, Figure 2,

Figure 4 is a fragmentary view in section,

Figure 5 is a section on line 5—5, Figure 4, and

Figure 6 is a fragmentary view in diametrical section of a modified form.

With reference to Figures 1 to 5, the damper includes a checking or damper plate 7 provided with a pair of spaced parallel horizontally disposed stiffening ribs 8, 9 extending from one side edge to the other side thereof and spaced equi-distant from the sides of the horizontal diametric center of the plate providing the latter with what is termed a horizontally disposed diametrical portion 10. The plate 7 is also formed in proximity to its edge with a circular stiffening rib 11 which intersects the ribs 8, 9, a pair of spaced semi-circular stiffening ribs 12, 13 which merge into the rib 8 and a pair of spaced semi-circular stiffening ribs 14, 15 which merge into the rib 9.

The portion 10 is swaged at its longitudinal center to provide respectively the faces 16 and 17 thereof with a semi-circular rib 18, a semi-circular groove 19 leading for a short distance inwardly from the edge portion 20 of plate 7, a semi-circular rib 21, a semi-circular groove 22 leading for a short distance inwardly from the opposite edge portion 23 of plate 7, a semi-circular groove 28 and a semi-circular rib 29. The ribs 18, 21 are arranged in inner endwise spaced alignment. The inner end of ribs 18, 21 are formed in their tops with U-shaped cutouts 24, 25 respectively. The portion 10 is formed with a pair of spaced aligned openings 26, 27 of a diameter materially greater than the width of each of the grooves. The openings 26, 27 are intersected centrally by the longitudinal median of portion 10. The inner end of rib 18 forms a part of the wall of the opening 26. The inner end of rib 21 forms a part of the wall of the opening 27. The groove 28 and the rib 29 are arranged between the opening 26, 27. One end of rib 29 forms a part of the edge of the opening 26 and the other end of the rib 29 forms a part of the edge of the opening 26. The groove 28 has its ends arranged in spaced alignment with the inner ends of the grooves 19, 22.

The damper includes a rotatable combined carrying and adjusting shaft 32 for the plate 7. The shaft 32 is formed from a single length of rod-like metallic material of circular cross section. The length and thickness of shaft 32 will be as desired. The shaft 32 includes a pointed or tapered end portion 33, an intermediate portion 34 and a looped-shaped portion 35, the latter constituting a handle. The said portions merge into each other. The portion 34 between its transverse median and its point of mergence with the portion 35 is formed with a curved arch-shaped part 36 which is offset laterally with respect to the remaining part thereof and disposed substantially at right angles to the portion 35. One side of part 36 is indicated at 37 and its other side at 38 and such sides are formed with cutouts which provide a pair of oppositely disposed tapered grooves 40, 41, each formed with an inner end wall 42, a top wall 43, an inner side wall 44 and a bottom wall 45. The latter is formed by the periphery of the part 39. The walls 42 and 43 of the grooves 40, 41 provide abutments. The grooves 40, 41 open laterally and at their outer ends.

Mounted on the part 34 is a coiled spring 46. Positioned on part 34 is a washer 47. The spring

46 is interposed between the washer 47 and the part 35 and has its outer end portion extended upon part 35.

The shaft 32 extends through the grooves 19, 22 and 28. The ribs 18, 21 and 29 couple shaft 32 to plate 7. The part 36, as shown, of shaft 32 extends upwardly through the opening 27 and coacts with the edges of opening 27 to provide for the plate 7 being bodily carried with shaft 32 when the latter is turned to adjust the damper. The rib 21 extends into the openings 40, 41 and prevents the plate 7 from sliding off of the shaft 32. The spring 46 acts to hold the damper in adjusted position. When the damper is connected to a stove pipe (not shown), the plate 7 is to be arranged in the pipe, shaft 32 is to extend through the pipe and the grooves 19, 22, 28 and the washer 47 is disposed in abutting relation with respect to the outer face of the pipe.

With reference to the modified form shown in Figure 6, the damper plate 48 carried by the shaft 49 will be substantially of the same construction as the plate 7. The difference resides solely in the construction of the intermediate rib of plate 48 and the intermediate portion of the carrying and adjusting shaft 49 for plate 48. The shaft 49 however will be formed with end portions which will correspond to end portions 33, 35 respectively. The intermediate portion 50 of shaft 49 is formed with a pair of oppositely disposed arch-shaped parts 51, 52. The part 51 is arranged similar and corresponds in construction to that of part 36 of shaft 32. The part 52 will have the side edges of its inner side 53 formed with a pair of oppositely disposed laterally opening grooves 54 of the same form as the grooves 40, 41 with this exception that the grooves 54 are closed at their outer ends and open at their inner ends. The part 52 extends downwardly through opening 55 of plate 48. The rib 56 of plate 48 is cut out, as at 57, and extends into the grooves 54. The part 51, extends upwardly through opening 58 in plate 48 and the rib 59 of the latter engages in the grooves 60.

The form shown in Figure 1 is of the single lock or latching type to prevent the damper plate sliding off the shaft, and the modified form is of the double lock or latching type for the purpose aforesaid.

What we claim is:

A damper including a stiffened checking plate provided diametrically thereof with oppositely disposed inner endwise aligning hollow ribs, each of said ribs being formed at its inner end with a cutout to provide a pair of oppositely disposed parallel spaced portions, a rotatable adjusting shaft for said plate passing through, disposed lengthwise of, and coupled by said ribs to the plate, said plate being formed with openings located at the cutout ends of said ribs, said shaft having a part thereof extending through one of said openings and the cutout end of one of said ribs to provide for the plate bodily moving with the shaft, said part being grooved lengthwise of each of its sides, and the said pair of portions of that rib through which extends said part extending into the grooves of the latter to prevent the plate from sliding relative to the shaft on the adjusting of the damper.

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