

No. 627,156.

Patented June 20, 1899.

D. B. TIBBETTS.
STOVEPIPE DAMPER.

(Application filed Mar. 20, 1899.)

(No Model.)

Fig. 1.

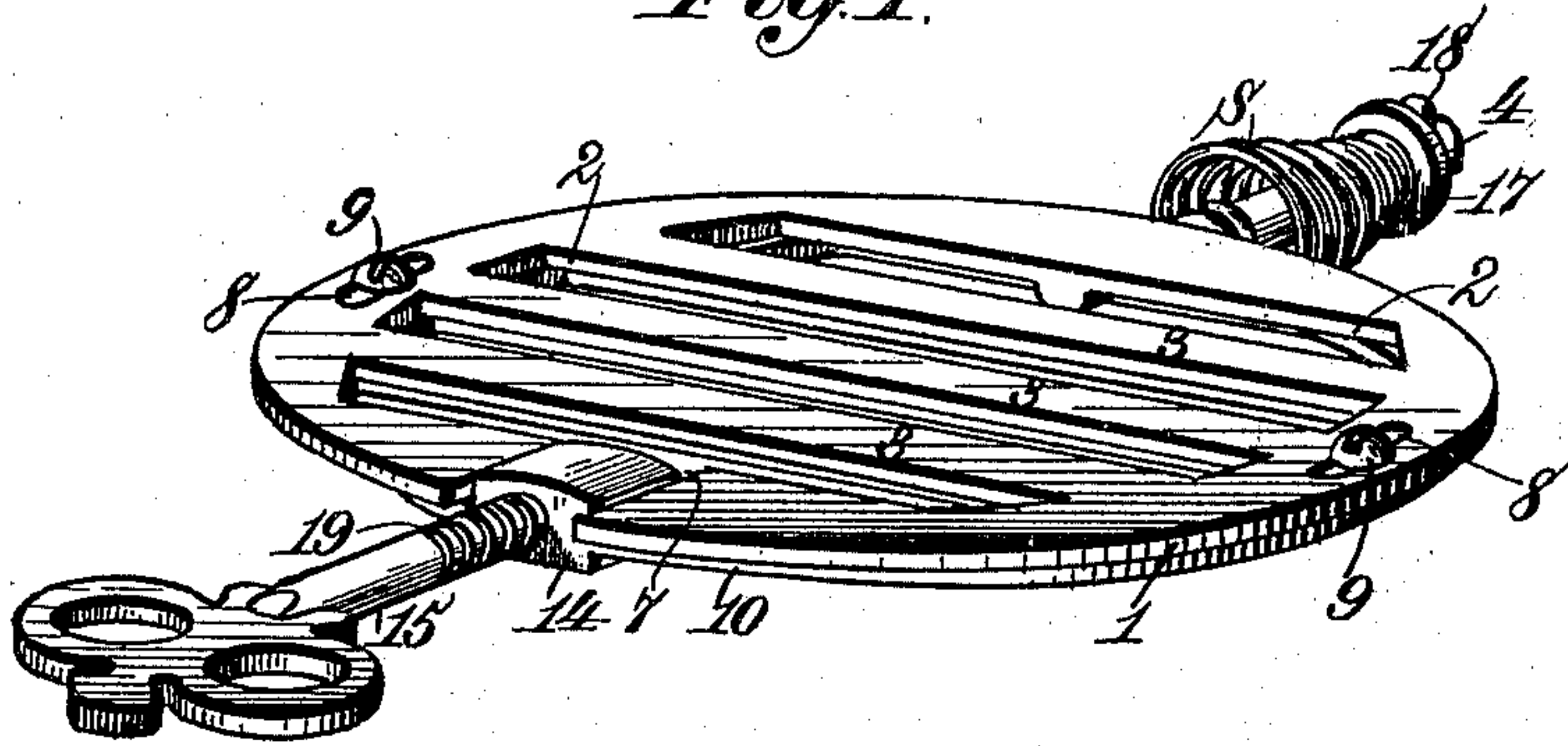


Fig. 2.

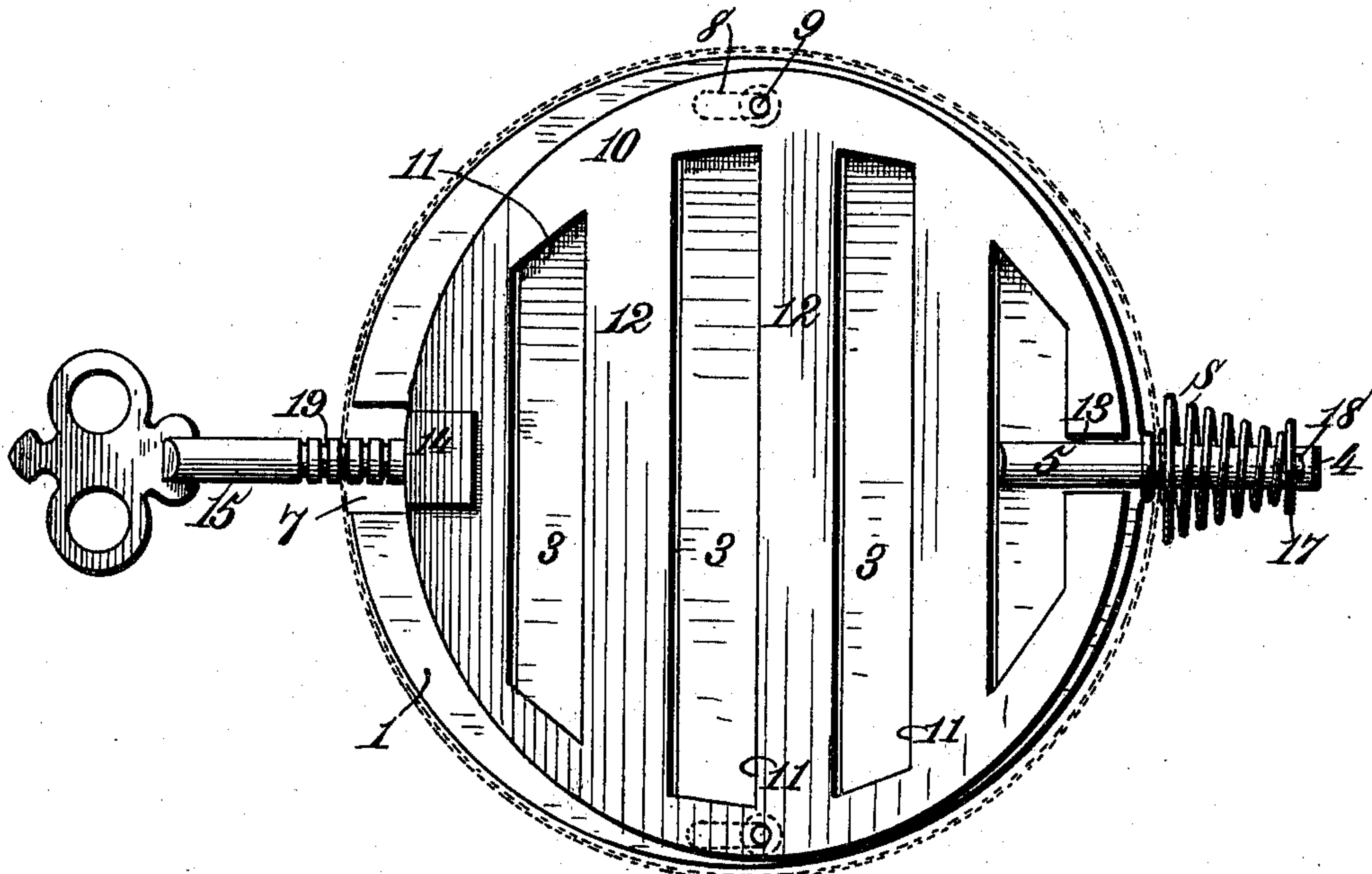
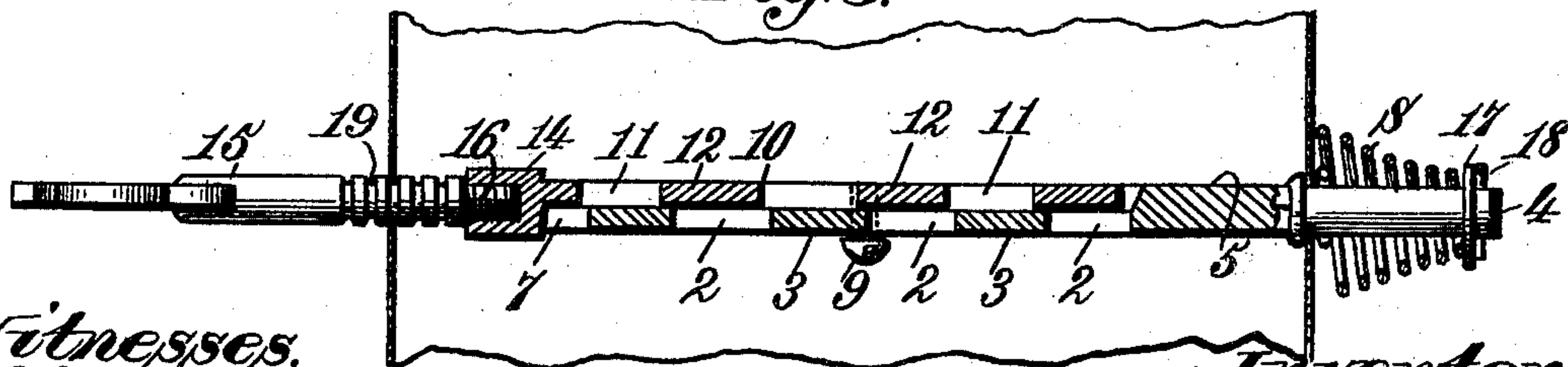


Fig. 3.



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UNITED STATES PATENT OFFICE.

DANIEL B. TIBBETTS, OF BROCKTON, MASSACHUSETTS.

STOVEPIPE-DAMPER.

SPECIFICATION forming part of Letters Patent No. 627,156, dated June 20, 1899.

Application filed March 20, 1899. Serial No. 709,713. (No model.)

To all whom it may concern:

Be it known that I, DANIEL B. TIBBETTS, a citizen of the United States of America, residing at Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Stovepipe-Dampers, of which the following is a specification.

My invention relates to improvements in two-part slidable or adjustable dampers particularly adapted for stovepipes, though applicable for use wherever such a damper may be found of utility.

The objects of my invention are to improve the construction and relative arrangement of the parts in such a damper, whereby it is adapted to entirely fill the stovepipe and be capable of complete rotation therein and the relative movement is properly guided, to provide means whereby the relative adjustment of the two members of the damper shall be maintained until altered at the will of the operator, and to provide connecting and stop devices between the two members of the damper, whereby there shall be at all times a sufficient passage for the products of combustion to permit the escape thereof from the stove through the pipe, avoiding the accumulation of gases and their escape through the stove into the apartment in which it is situated.

To accomplish these objects, my invention consists in a stovepipe-damper constructed and arranged as hereinafter described and claimed, reference being made to the accompanying drawings, wherein—

Figure 1 is a perspective view of a damper constructed in accordance with my invention. Fig. 2 is a plan view thereof, and Fig. 3 a cross-sectional view.

In the said drawings the reference-numeral 1 designates the relatively stationary member of the damper. It is provided, as shown, with a series of open spaces 2, separated by cross-bars 3. This member of the damper is also provided with the journal or stud 4, projecting outwardly from its periphery. The stud 4 is so formed upon the plate 1 that its axis is in true line with the plane of one face of said plate and its base rises from the face of the plate, whereby it serves to form a guide-rib 5 and also admits of the complete damper

filling the entire space of the stovepipe and still being capable of complete rotation therein, as hereinafter described. Contiguous to the plate 1 said stud 4 is provided with a collar 6, which seats against the stovepipe when the damper is in place, and upon said stud, outside of said collar, is mounted the friction-spring S. At the end opposite the stud 4 the periphery of plate 1 is cut away, as at 7, to provide a raceway for the guide-lug formed on the other member of the damper, as will be described. At an angle of about ninety degrees with said stud 4 and raceway 7 the said plate is provided with elongated slots 8, in which headed pins 9, projecting from the other or relatively adjustable or slidable member 10 of the damper, are adapted to work. The said relatively slidable member 10 is, like the plate 1, provided with a series of open spaces 11, separated by cross-bars 12, which when in register with the spaces 3 of the plate or member 1 are adapted to afford a maximum outlet for the products of combustion. The shape of the plate 10 is elliptical, as shown, so that in its different positions of adjustment it does not pass the periphery of the plate 1. The said plate 10 is connected to the plate 1 by means of the aforesaid headed pins 9, which pass through the elongated slots 8 in the latter, and it is guided in its relative movements with respect to the said plate 1 by means of a peripheral guide-opening 13, in which the guide-rib 5 of the stud 4 fits and along which the walls of the guide-opening are adapted to travel in the sliding or adjusting movement of the member 10. At a point opposite the said guide-opening 13 the member 10 is provided with an offset lug 14, which moves in the raceway 7 of the member or plate 1. The lug 14 and the raceway 7 coöperate with the rib 5 and the opening 13 in properly guiding the movement of the plate 10 when being adjusted upon the plate 1. Detachably connected with this offset lug is an operating journal-key or finger-piece 15, which is conveniently connected to said lug by the screw-threaded engagement 16, as shown. The said operating key or finger-piece 15 is connected with said lug, so that its axis is in true line with one face of the member or plate 10 and in axial line with the axis of the stud 4, whereby the axis of the completed damper is dis-

posed accurately between the flat outside faces of said members 1 and 10, whereby the said damper is adapted to entirely fill the space of the stovepipe and still be capable of complete rotation therein, which operation would not be possible if the axis of the damper were arranged in a line passing through one only of said members.

It is of considerable advantage that the damper shall fill the entire stovepipe-space. Otherwise when the damper is arranged across the pipe there would be a passage around the damper between its periphery and the stovepipe through which the cooler products of combustion would find comparatively ready exit and tend to the formation of creosote, whereas by providing a damper constructed according to my invention the escape of the somewhat cooler products of combustion around the edges of the damper is prevented and they are compelled to mingle with the hotter products of combustion and seek their exit through the middle of the damper and pass together through the central part of the damper by way of the open spaces 3 and 11.

The elongated slots 8 and the headed pins 9 are so disposed with respect to their position and dimension in relation to the open spaces 3 and 11 that when the sliding member 10 is moved to bring its integral bars 12 in register with the open spaces 3 of the plate 1 such movement is accurately limited so that there shall always remain at least a small space through which the products of combustion may escape, and thus the accumulation of gases is prevented and their escape from the stove into the apartment in which it is located is avoided.

Upon the stud 4 is arranged a coiled or spiral spring S, one end of which seats against the stovepipe P. Said spring is confined upon the stud by means of a washer 17 and a split pin 18, passing through a pin-opening in the said stud in such a manner that when the damper is rotated in the stovepipe the tension of the spring against the pipe serves to hold it either in a horizontal or vertical or in any angular position to which it may be rotated.

In order that the position to which the relatively slidable member 10 is adjusted, with respect to the member 1, so as to afford the maximum passage for products of combustion or relatively decreasing such passage within the limit hereinbefore described, I provide the operating-key or finger-piece with a series of annular grooves 19, which are adapted to engage the edge of the opening in the stovepipe through which said operating key or finger-piece passes, as seen in Fig. 3. Such engagement of any of the series of grooves 19 with the edge of the said opening serves to maintain the relatively slidable member immovable in its position of adjustment until intentionally altered. This feature of construction and arrangement is of material importance, since the disposition of the rela-

tively movable member 10 to secure the desired capacity of passage for the products of combustion will be maintained when the parts are adjusted and a given groove placed in engagement with the edge of the opening in which the operating key or finger-piece is located without liability of becoming disarranged by jar or shock, that would likely occur without the provision of such means.

Having thus described my invention, what I claim is—

1. A damper consisting of a perforated plate formed with a journal-stud projecting from the periphery thereof and the axis of which is in line with the face of the plate, the base of said stud rising from the face of the plate and constituting a guide-rib, said plate provided in its periphery at a point opposite the journal-stud with a raceway; and a relatively movable perforated plate resting upon the first-named plate, and having pin-and-slot connection therewith, said movable plate provided with a guide-recess fitting the guide-rib of the journal-stud of the first-named plate, and provided also with a lug moving in the raceway of the first-named plate, and an operating finger-piece carried by said lug so that the axis of said finger-piece is in line with the face of the plate to which it is secured, said finger-piece having a series of annular grooves formed thereon and adapted to engage the stovepipe for locking said plate in its relative position of adjustment, substantially as described.

2. A damper consisting of a perforated plate formed with a journal-stud projecting from the periphery thereof and the axis of which is in line with the face of the plate, the base of said stud rising from the face of the plate and constituting a guide-rib, said stud having a collar to bear against the stovepipe and a spring mounted thereon outside of said collar, said plate provided at a point opposite the journal-stud with a raceway in its periphery; and a relatively movable perforated plate resting upon the first-named plate and having pin-and-slot connection therewith, said movable plate provided with a guide-recess fitting the guide-rib of the journal-stud of the first-named plate and provided also with a lug moving in the race of the first-named plate, and an operating finger-piece carried by said lug so that the axis of said finger-piece is in line with the face of the plate to which it is secured, said finger-piece having a series of annular grooves formed thereon and adapted to engage the stovepipe for locking said plate in its relative position of adjustment, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

DANIEL B. TIBBETTS.

Witnesses:

ARTHUR L. RICH,
RICHARD W. NUTTER.