No. 684,270. Patented Oct. 8, 1901.

O. F. KORNREICH.

DAMPER.

(Application filed Oct. 2, 1899.)

(No Model.)

Fig. 1.

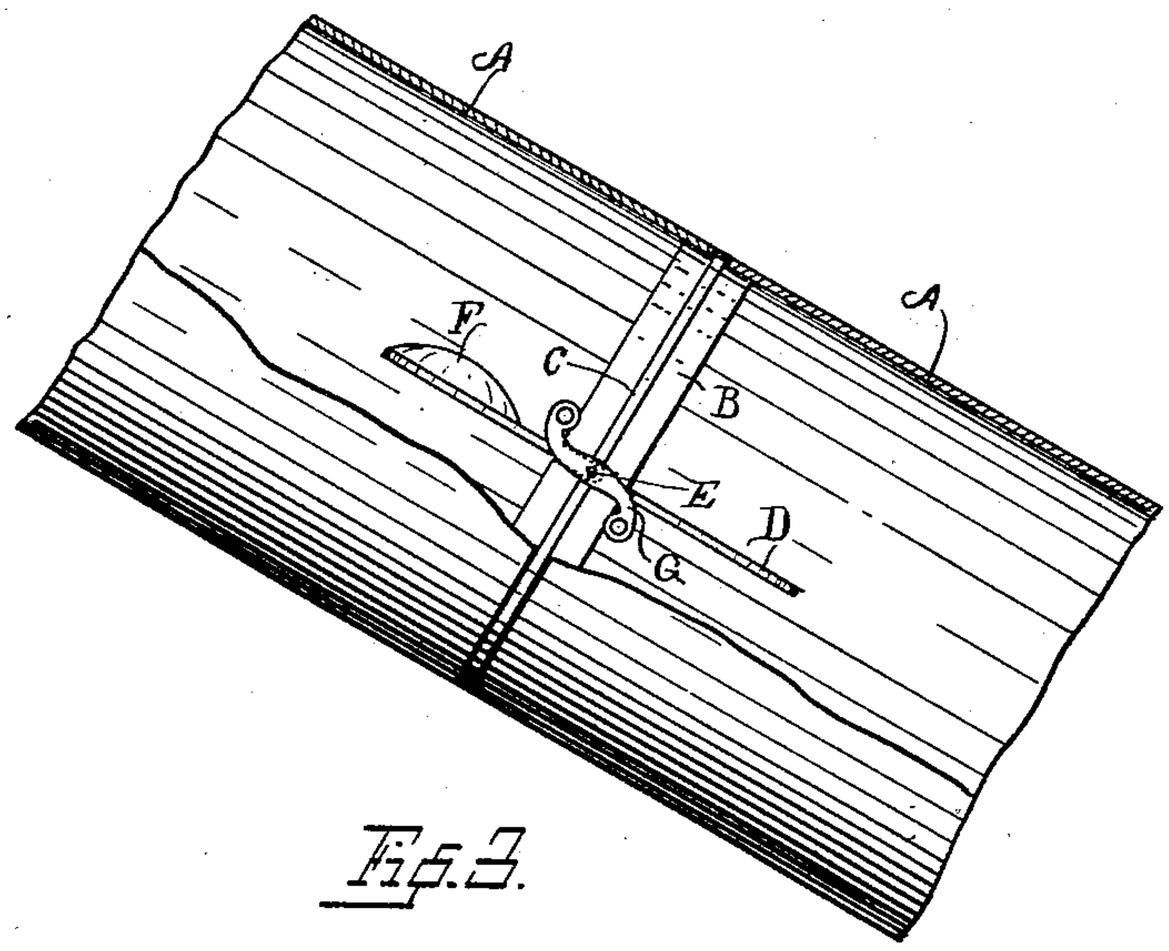


Fig. 2.

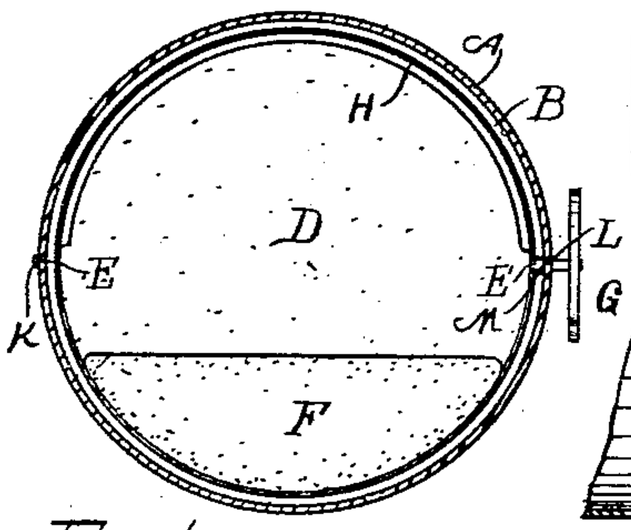


Fig. 3.

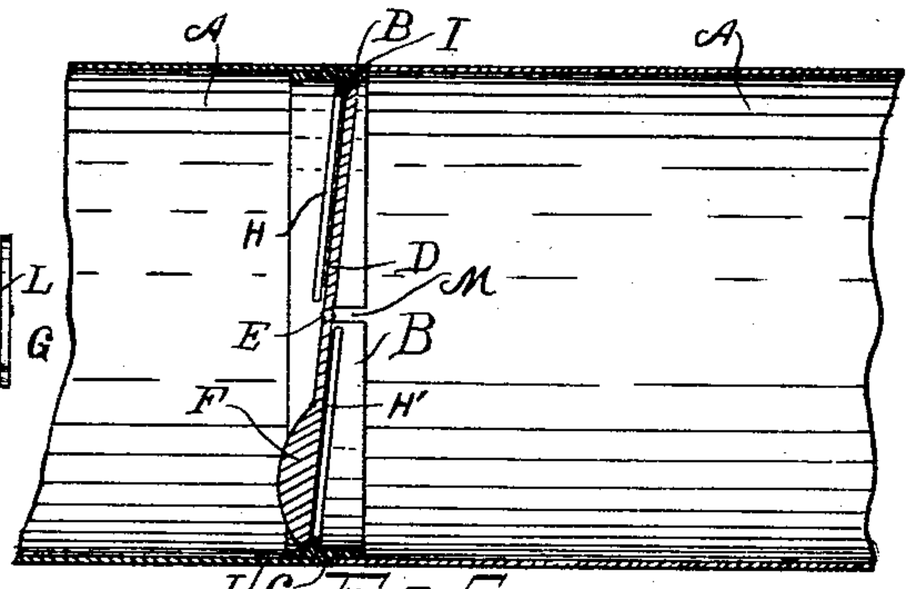


Fig. 4.

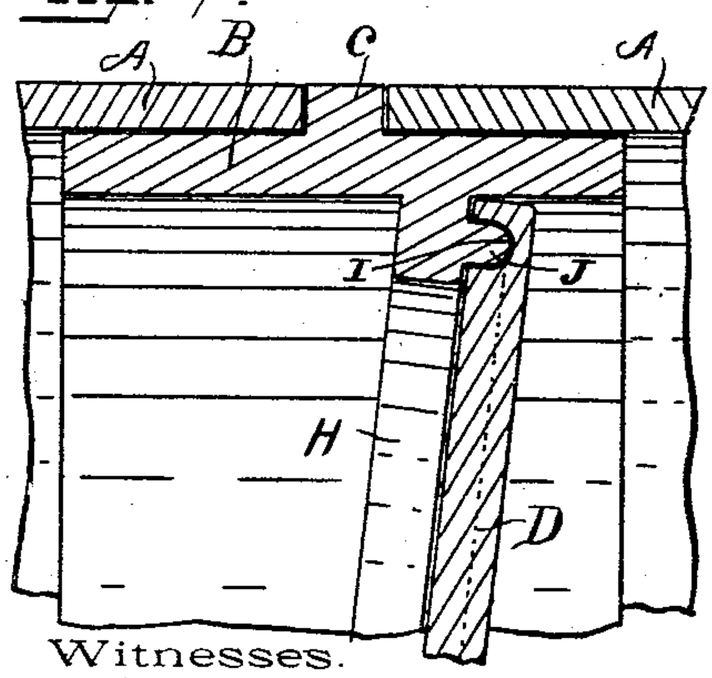
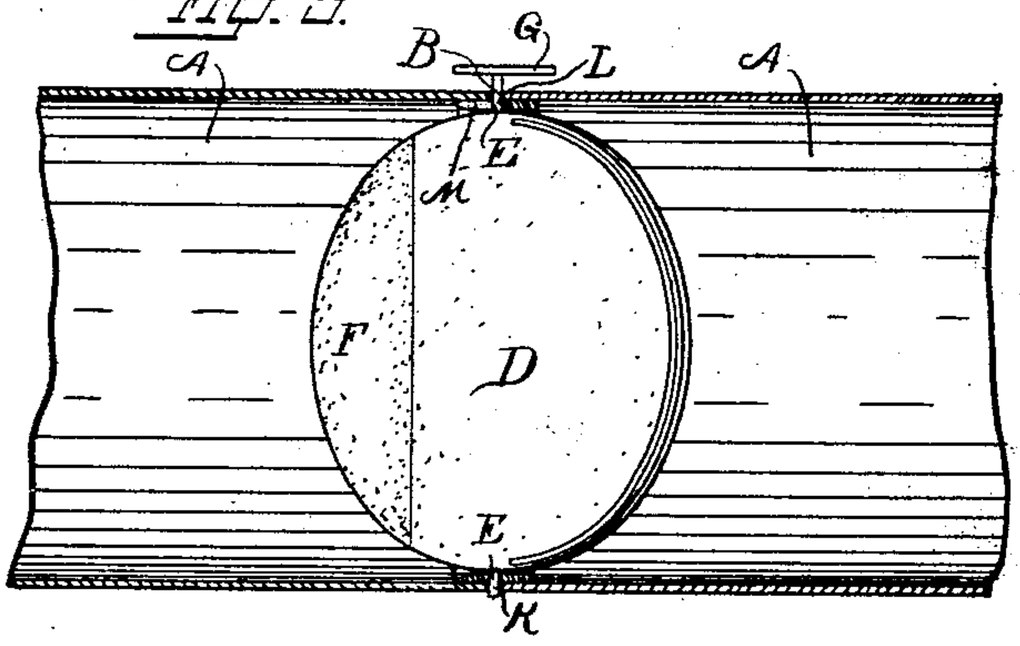


Fig. 5.



Witnesses.

J. A. Otto.

Winifred Tinkler.

Inventor.

Otto F. Kornreich

By Erwin Wheeler & Wheeler

Attorneys

UNITED STATES PATENT OFFICE.

OTTO F. KORNREICH, OF MILWAUKEE, WISCONSIN, ASSIGNOR OF ONE-HALF TO THE PHILIP GROSS HARDWARE COMPANY, OF SAME PLACE.

DAMPER.

SPECIFICATION forming part of Letters Patent No. 684,270, dated October 8, 1901.

Application filed October 2, 1899. Serial No. 732,276. (No model.)

To all whom it may concern:

Be it known that I, OTTO F. KORNREICH, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Dampers, of which the following is a specification.

My invention relates to improvements in dampers for furnace-pipes.

The object of my invention is to provide a damper which will be substantially air-tight under the light pressure exerted by the air-currents in an ordinary furnace-pipe, regard being had for convenience in inserting the damper between the abutting ends of the pipe-sections and for freedom of movement, frictional contact between the periphery of the damper and the interior of the pipe-sections being avoided.

In the following description reference is had to the accompanying drawings, in which—

Figure 1 is a side view of the abutting ends of two sections of furnace-pipe, showing my invention applied thereto. Fig. 2 is a cross-section of the furnace-pipe, showing the damper as seen from the upper side. Fig. 3 is a central longitudinal sectional view of the pipe-sections and damper. Fig. 4 is an enlarged detail view of a portion of the damper disk or valve and the damper-engaging flange, showing the tongue-and-groove joint. Fig. 5 is a top view showing the furnace-pipes and the damper-ring in section on the axis of the damper.

Like parts are identified by the same reference-letters throughout the several views.

A A are the abutting ends of two furnace-pipe sections.

B is the damper-ring. This is provided with an exterior flange C, which forms an annular shoulder against which the ends of the pipe-sections A are adapted to engage, the ring B being formed to fit within the pipe-sections, as shown in Fig. 1.

D is the damper valve or disk, which is preferably pivoted to turn upon a horizontal axis E and is provided with a weight F, adapted to close the damper automatically when the latter is not held in its open position by the damper-actuating lever G.

It will be observed, Fig. 3, that the disk D when closed occupies a slightly-diagonal position in the pipe, with its periphery engaging against the interior sector-flanges H H', which project inwardly from the ring B on opposite sides, respectively, of the axis E of the disk and on opposite sides of the disk when closed. The flanges H H' also have a diagonal trend corresponding with that of the disk when closed, as shown in said Fig. 3. It will also be observed that the disk is provided near its periphery with a groove I, into which a corresponding tongue or rib J is adapted to project, as best shown in Fig. 4, the effect of this construction being to produce an extremely tight joint, so that the periphery of the disk need not be made to contact with the ring in order to prevent the passage of air. It is therefore evident that the weight can be relied upon to close the disk under all circumstances, as all frictional contact between the periphery of the disk and the damper-ring is avoided.

Owing to the fact that furnace-pipes are usually located in a nearly horizontal position, it is customary where ordinary dampers are used to provide exterior weighted levers for closing them, which levers are arranged at an angle to the plane of the damper valve or disk in order that they may exert an effective pressure when the disk is in its vertical or closed position. By the use of diagonal sector-flanges, however, I am enabled to use the interior weight F on the face of the disk, for the disk itself occupies an angular position when closed such as to render the weight effective.

For convenience in inserting the disk in position I have provided the same with axial studs or trunnions K and L, which may be formed integrally with the disk itself. The trunnion K is adapted to be inserted in an apertured bearing in the ring B, while the trunnion L (which is provided with the actuating-lever G) is adapted to engage in an open slot or recess M, formed in the ring B, the trunnion being held in position by the abutting end of one of the pipe-sections A. With this construction it is obvious that the disk can be readily removed from the pipe by first removing the section A, which covers the slot M, whereupon the disk may be tilted to with-

draw the trunnion L from the slot, when the trunnion K may also be readily withdrawn from its apertured bearing in the ring.

It will of course be understood that my damper is adapted to be used not only in the hot-air service-pipes, but also in cold-air flues, vent-flues, &c.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

A damper, comprising a ring adapted to engage the ends of abutting furnace-pipe sections; inwardly-projecting, diagonally-disposed sector-flanges, arranged to occupy positions on opposite sides of the damper valve, or disk, when the latter is closed, and to furnish a segmental bearing therefor; a damper valve or disk axially supported intermediate of said sector-flanges, said valve or disk and sector-flanges being provided with tongued or grooved surfaces adapted to register with each other when the disk is closed; and a weight connected with the damper-valve, and adapted to hold the valve normally in closed position.

In testimony whereof I affix my signature in the presence of two witnesses.

OTTO F. KORNREICH.

Witnesses:
JAS. B. ERWIN,
LEVERETT C. WHEELER.