

(No Model.)

2 Sheets—Sheet 1.

L. M. DEVORE.
STOVE PIPE DAMPER.

No. 409,459.

Patented Aug. 20, 1889.

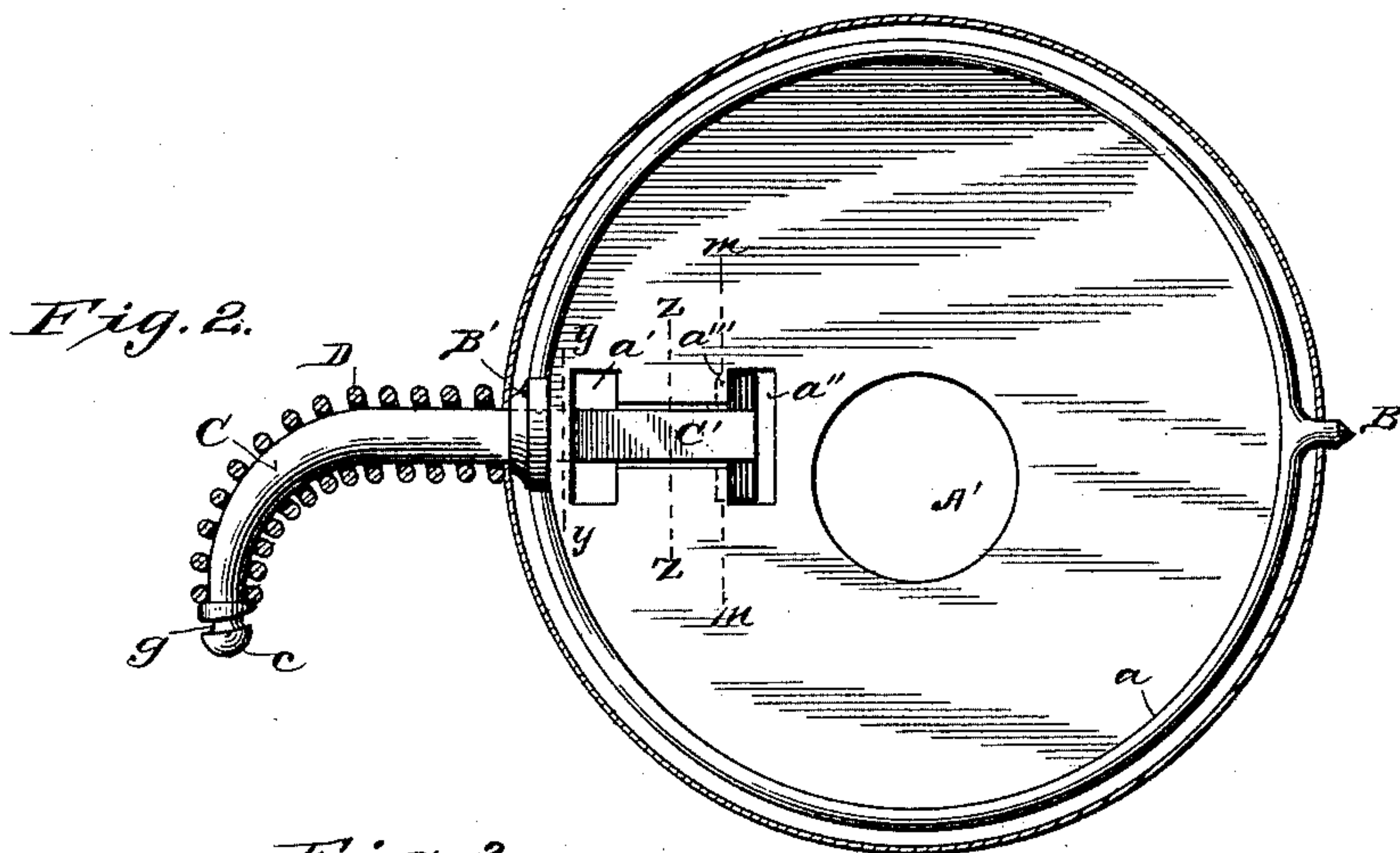
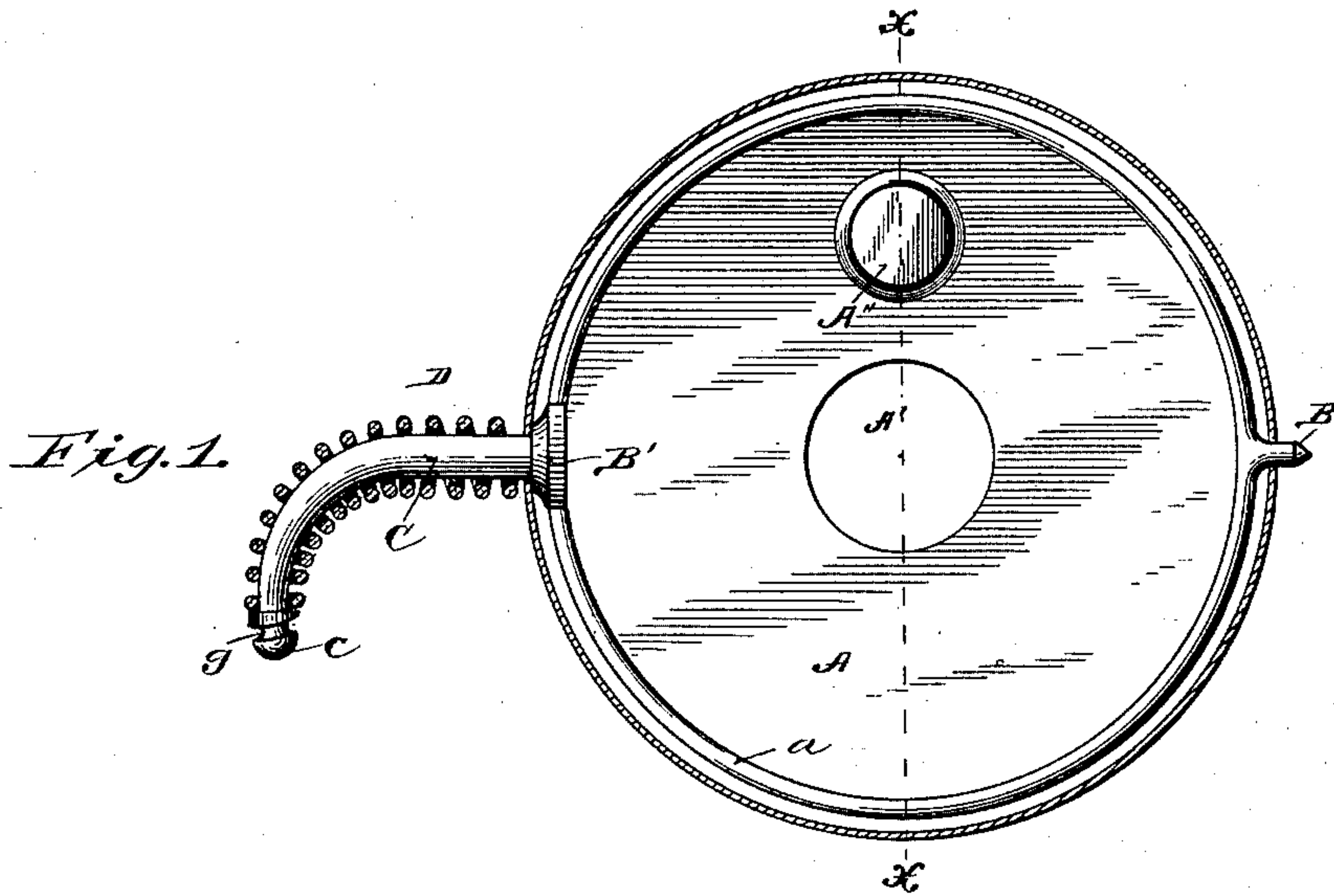
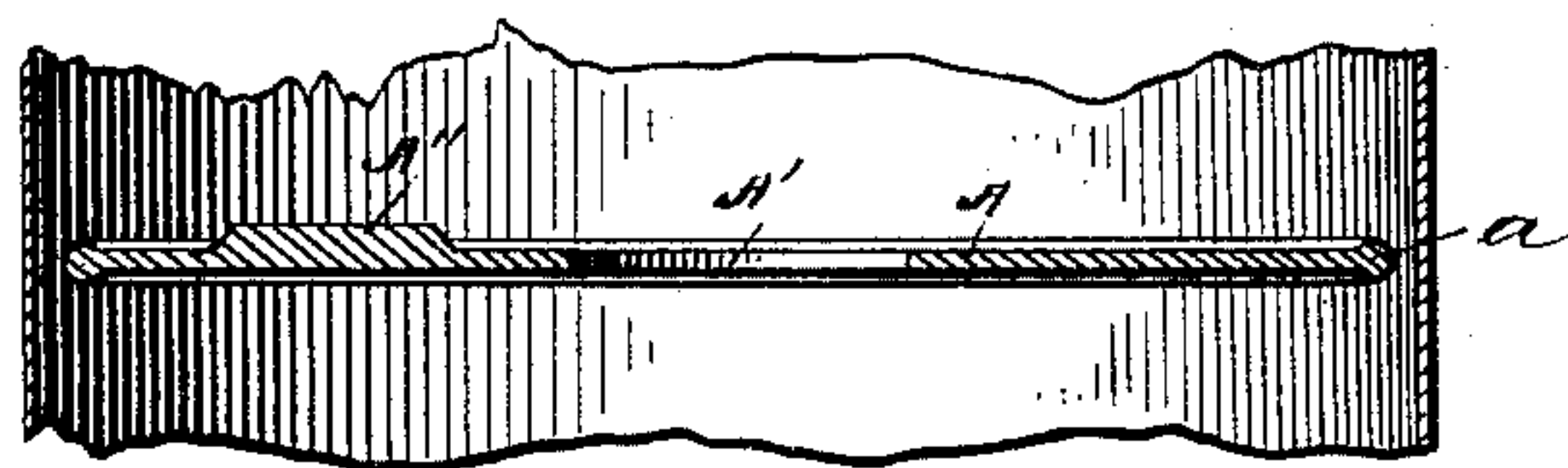


Fig. 3.



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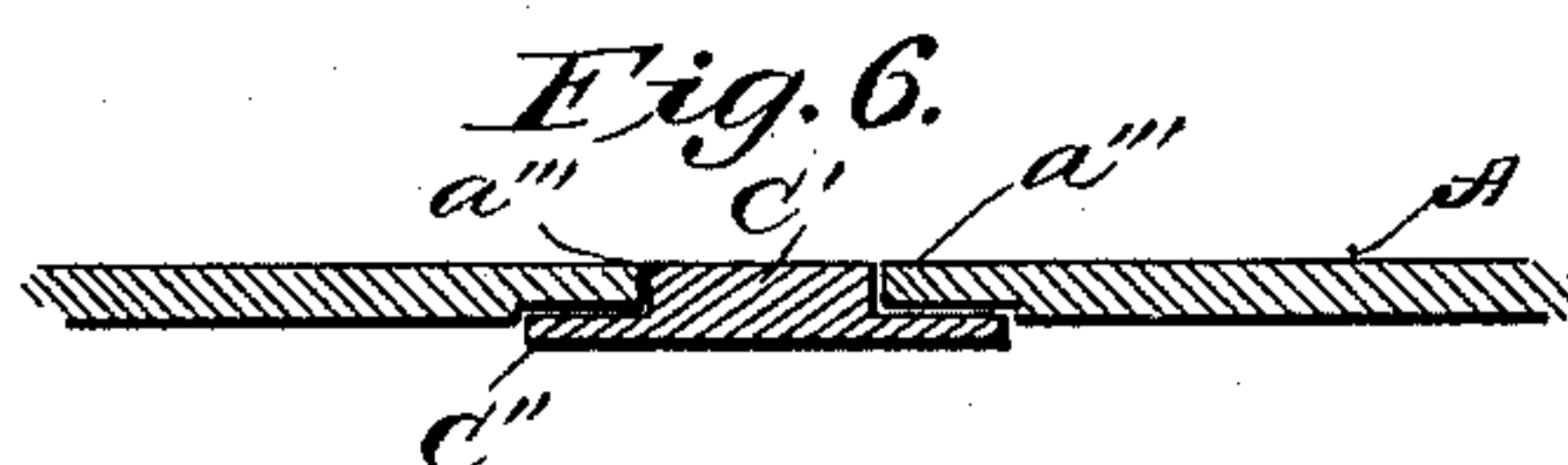
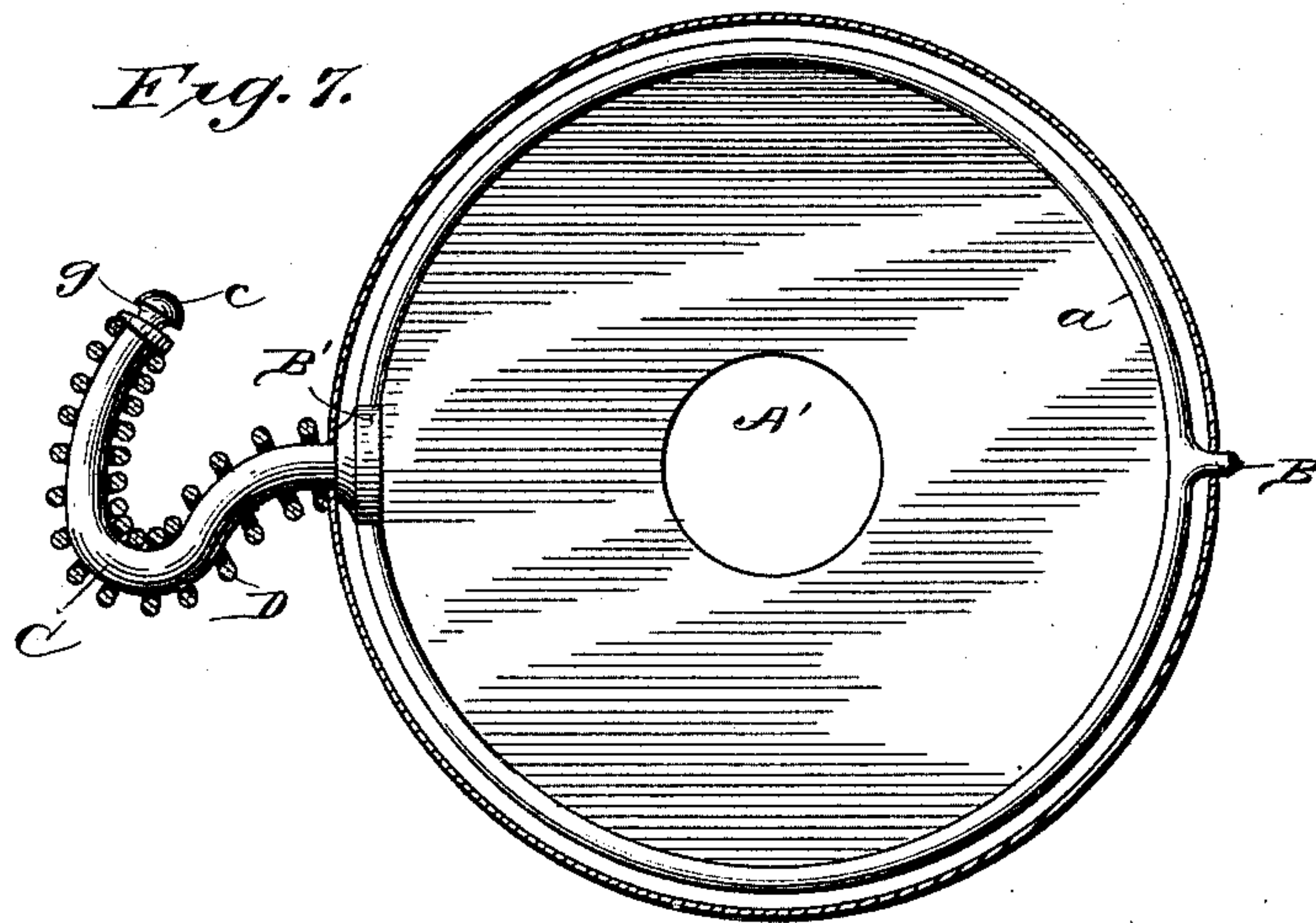
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2 Sheets—Sheet 2.

L. M. DEVORE.
STOVE PIPE DAMPER.

No. 409,459.

Patented Aug. 20, 1889.



Witnesses
Harry S. Roberts.
Luther A. Surge

Inventor:
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Attorneys.

UNITED STATES PATENT OFFICE.

LEVI M. DEVORE, OF FREEPORT, ILLINOIS.

STOVE-PIPE DAMPER.

SPECIFICATION forming part of Letters Patent No. 409,459, dated August 20, 1889.

Application filed February 23, 1889. Serial No. 300,799. (No model.)

To all whom it may concern:

Be it known that I, LEVI M. DEVORE, a resident of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Stove-Pipe Dampers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in stove-pipe dampers, and is fully described and explained in this specification and shown in the accompanying drawings, in which—

Figure 1 is a plan of one form of my improved damper in operative position in a pipe. Fig. 2 is a plan of a modified form of the damper, showing the connection of the blade and handle. Fig. 3 is a section through the line X X, Fig. 1. Figs. 4, 5, and 6 are sections through the lines Y Y Z Z M M, Fig. 2, respectively. Fig. 7 is a plan of a second modified form of the damper.

In Figs. 1 and 3, A is a damper-blade formed with a central opening A', and provided at one point in its periphery with a preferably pointed gudgeon B and at a diametrically-opposite point with a boss B', the boss and gudgeon being both formed integrally with the blade. From the center of the boss B' projects a handle C, also formed in one piece with the boss and blade, and curved to form a crank for turning the blade on its axis when the gudgeon and the portion of the handle next the boss are journaled in a pipe, as shown in Fig. 1. A spring D encircles the handle C and abuts at its inner end against the pipe when the damper is in working position, the outer end of the spring being abutted against a suitable projection c on the handle C, situated, preferably, at the end thereof. The spring has a normal length greater than the distance between the projection c and the surface of the pipe and is compressed when in position on the handle. It therefore exerts a force which tends to push the projection c away from the pipe, and thus to draw the boss B' against the inner face of the pipe and produce a friction which prevents accidental displacement of the damper when turned to any desired position.

The projection c is preferably formed integrally on the handle, and in order that it may permit the ready application of the spring to the handle and at the same time prevent its accidental escape therefrom I have found it convenient to form the projection with a spiral groove g, adapted to permit the spring to be passed over it by spiral movement, like that of a screw. I have also found it advisable to make the inner end of the spring of greater diameter than the outer, in order that all but the extreme outer end of the spring may be passed directly over the projection c, leaving only the outermost coils to be passed over it by a twisting or screw movement. If the spring be sufficiently reduced in diameter at its outer end, the end of the handle need not be provided with an enlargement, but the groove may be formed in the handle and the small coils screwed into the groove, where they will be securely held. As the crank throws the damper slightly out of balance, I have restored the balance by forming on the blade a counter-weight A'', situated on the opposite half of the blade from that toward which the handle is turned.

Figs. 2, 4, 5, and 6 illustrate a form of damper just the same as that shown in Figs. 1 and 2, except that the handle is formed on a separate piece from the blade. In this form the handle C has a shank C', provided at its inner end with lugs C''. These lugs may be passed through an opening a' in the blade and dropped through a second opening a'', and then slightly retracted to the position shown in Fig. 2. When the parts are thus connected, the device is practically the same as the one-piece form shown in Figs. 1 and 3. In this form I have counterbalanced the handle by forming the opening A' at one side of the center, thus lightening the side of the blade toward which the handle is turned.

Either one of the dampers above described may be applied to a pipe by inserting the blade and handle in the pipe, passing the handle through a suitable hole in the pipe at one point and the gudgeon through an opposite hole. The spring may then be applied, and the damper is ready for use. When either of these forms is in operative position, the spring C not only produces neces-

sary friction, but also forms a non-heating cover for the handle, so that the damper may be operated at any time without danger of burning the hand of the operator.

5 It is not essential that the handle be bent wholly to one side of the axis of the blade, as it may have the form shown in Fig. 7, in which the weight of the handle is practically symmetrical with reference to the axis. This
10 difference in the form of the handle makes no difference as to the manner of applying the spring or as to the operation and management of the damper.

Having now explained my invention and its
15 operation, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of a damper-blade, a rigid handle adapted to operate the same and formed with a spiral groove, and a spiral
20 spring adapted to be passed over said handle by moving one or more of its coils spirally along said groove.

2. The combination, with a damper-blade

and a curved handle rigid therewith and adapted to be passed through an opening in 25 the pipe, of a spring encircling the handle and abutting against the pipe and against a projection or enlargement on the handle, the projection or enlargement being formed with a spiral groove adapted to permit the passage 30 of the spring over it by a spiral movement.

3. The combination, with the blade A, having the gudgeon B, the boss B', and curved handle C, of the spiral spring D, adapted to abut at one end against a pipe in which the 35 damper is placed and at the other against an enlargement c on the handle C, substantially as and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscrib- 40 ing witnesses.

LEVI M. DEVORE.

Witnesses:

R. H. WILES,
J. A. CRAIN.