

(No Model.)

E. E. LEDERLE.  
STOVE PIPE DAMPER.

No. 361,301.

Patented Apr. 19, 1887.

Fig. 1.

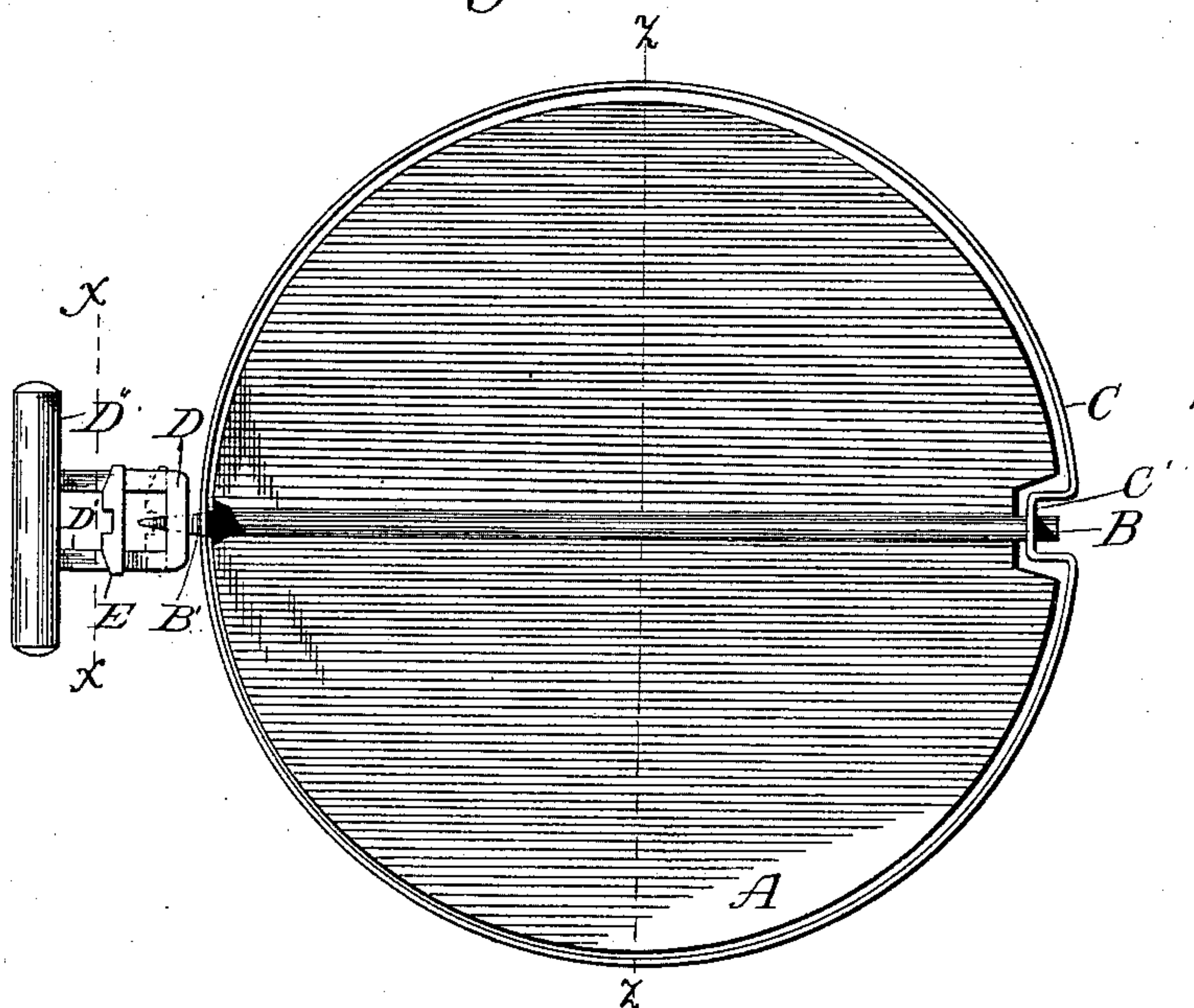


Fig. 2.

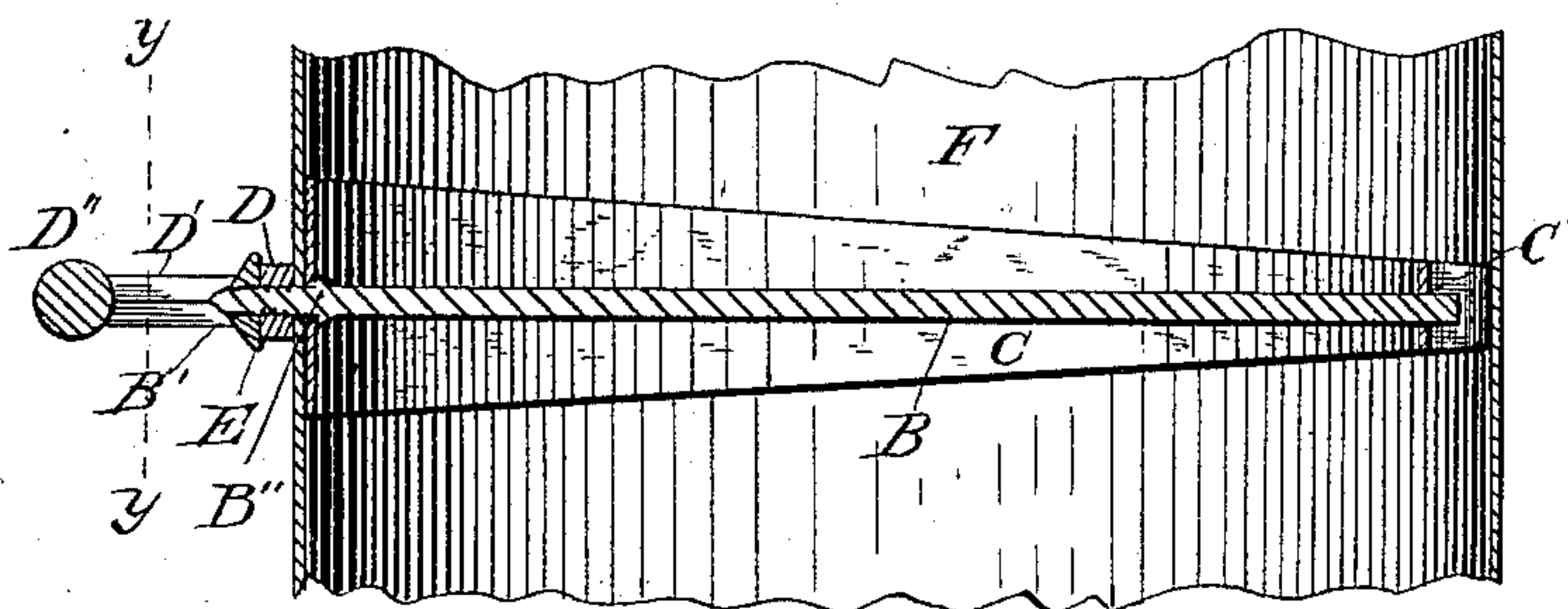
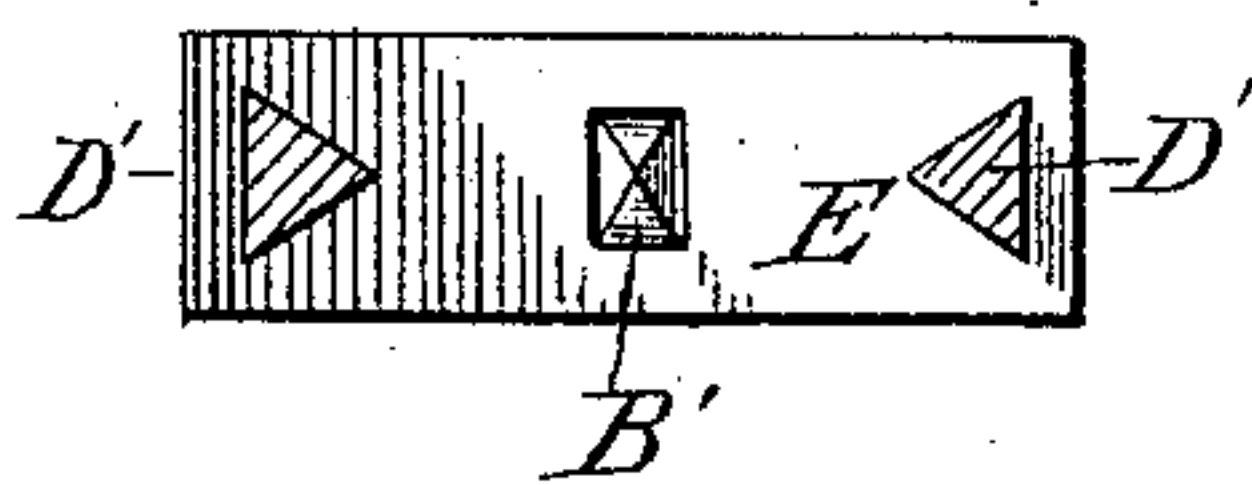


Fig. 3.



Witnesses:-  
J. S. Brown  
J. H. Kizer.

Fig. 4.



E. E. Lederle  
Inventor, by

Lawson, Hile & Irvine  
his Attys.



# UNITED STATES PATENT OFFICE.

EDWARD EMIL LEDERLE, OF WACO, TEXAS, ASSIGNOR OF ONE FOURTH  
TO WILLIAM K. CUMMINGS, OF SAME PLACE.

## STOVE-PIPE DAMPER.

SPECIFICATION forming part of Letters Patent No. 361,301, dated April 19, 1887.

Application filed January 25, 1887. Serial No. 225,455. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD EMIL LEDERLE, a citizen of the United States, residing at Waco, in the county of McLennan and State of Texas, 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 appertains to make and use the same.

My invention is an improvement 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 the entire damper and the retaining-ring in which the damper-spindle is journaled. Fig. 2 is a central section of the same shown in position in a joint of pipe, the plane of section being passed through the axis of the damper-spindle. Fig. 3 is a transverse section through the lines *x x*, Fig. 1, and *y y*, Fig. 2. Fig. 4 is a transverse section of the damper blade and spindle through the line *z z*, Fig. 1.

In the views, A is an approximately-circular damper-blade, and B is the spindle thereof, the blade and spindle being formed in a single piece, or formed separately and connected in the manner illustrated in Fig. 4. The spindle projects at both ends beyond the periphery of the blade, one of its projecting ends being a plain cylindrical pivot and the other being provided with a flattened and pointed screw, B', and with the enlarged shoulder B'', extending only a slight distance outside the periphery of the blade. Both ends of the damper-spindle are journaled in a cylindrical ring, C, of sheet metal, the bearing of the cylindrical end of the spindle being in an inwardly-bent portion, C', of the ring C, so that the extreme end of the pivot would be within the cylindrical surface of the ring, if the same were completed. The flattened and pointed screw B at the opposite end of the spindle is passed through and projects outside of the ring C, and the shoulder B'' of the spindle lies within and in contact with the ring when the parts are in working connection. A nut, D, engages the flattened screw B' and is provided with two parallel outwardly-extending arms,

D', whose outer ends are secured in a handle, D'', preferably of wood or other non-conducting material. On the arms D' slides freely a lock, E, Fig. 3, provided at its center with an opening corresponding substantially in size and shape to the cross-section of the screw B', so that when the lock is pressed inward to the position shown in dotted lines in Fig. 1 its central opening incloses the screw B' and prevents the rotation of the lock and nut with reference to the screw.

When it is desired to place the damper in position in a joint of stove-pipe, the entire device illustrated in Fig. 1, except the lock D and the parts connected with it, is inserted in the pipe until it reaches the desired position, when the damper-spindle is placed as nearly as possible at right angles to the surface of the pipe, and a blow upon the outside of the pipe forces the point of the spindle through it. The nut D is then screwed upon the end of the spindle until the shoulder B'' is drawn against the inner surface of the ring C, and the outer surface of the ring C is drawn firmly against the inner surface of the stove-pipe. The lock E is then moved from the position shown in full lines in Fig. 1 to that shown in dotted lines in Fig. 1 and in section in Fig. 2. When the lock reaches this position, it effectually prevents rotation of the nut D with reference to the spindle, so that the rotation of the handle D'' invariably rotates the spindle and blade of the damper, and the blade and handle are securely retained in the same relative position. The connection of the handle D' with the nut D, by means of the slender arms D', prevents the transmission of any great amount of heat from the damper to the handle, so that the handle always remains at a moderate temperature.

As has already been stated, the blade and spindle of the damper may be cast in a single piece; but I prefer the construction illustrated in Fig. 4, in which the blade is made up of two pieces of sheet metal, one of which is preferably flat, while the other is formed with a central corrugation conforming to the non-circular cross-section of the spindle. The two plates being placed together, with the spindle in said corrugation, the edge of one of the plates is



turned over the other and the parts are thus firmly secured together. The form of that portion of the spindle which lies between the two plates making up the blade is such as to prevent the rotation of the spindle in the corrugation which incloses it, so that the turning of the spindle insures the turning of the blade. A damper formed of two plates of sheet metal in the manner illustrated and described can be made much lighter for a given strength than a blade of cast-iron, and its construction is such that it can be manufactured with the machinery found in any ordinary tin-shop. While I do not limit myself, therefore, to this form, I consider it preferable to any other.

It is evident that the supporting-ring C might be dispensed with and the shoulder B' of the damper-spindle be brought into direct contact with the inner surface of the stove-pipe. The use of the supporting-ring, however, affords a bearing for what would otherwise be the free end of the spindle, and the ring itself is held much more firmly and securely in the pipe than the damper-spindle would be had it no bearing surface on the pipe except that afforded by the shoulder B'.

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

1. The combination, with a damper-blade, of a spindle rigidly attached thereto and having a pointed and screw-threaded end adapted to be forced through a stove-pipe and to receive a nut lying outside thereof, substantially as and for the purpose set forth.

2. The combination, with a damper-blade and a spindle rigidly attached thereto and provided with a pointed and screw-threaded projecting end, of a supporting-ring through which said end projects, substantially as and for the purpose set forth.

3. The combination, with a damper-blade and a spindle rigidly attached thereto and provided with a screw-threaded end, of a nut adapted to engage said screw-threaded end, and a lock adapted to engage said nut and pre-

vent the rotation thereof with reference to the spindle, substantially as and for the purpose set forth.

4. The combination, with a damper-blade and a spindle rigidly attached thereto and having at one end a cylindrical pivot projecting beyond the periphery of the blade, and at the opposite end a screw projecting beyond said periphery, of a supporting-ring, C, in which the projecting ends of said spindle are journaled, the bearing of the cylindrical end of said spindle being in an inwardly-bent portion, C', of said supporting-ring, substantially as and for the purpose set forth.

5. The combination, with a damper-blade, A, and spindle B, having the screw-threaded projecting end B', non-circular in cross-section, of the nut D, having the parallel arms D', and the lock E, sliding on said arms and having an opening conforming substantially in shape to the cross-section of the screw-threaded end of the spindle, substantially as and for the purpose set forth.

6. The combination, with a damper-spindle, of a blade made up of two plates of sheet metal rigidly fastened together and lying on opposite sides of the spindle, and formed with a corrugation conforming to the shape of the spindle, substantially as and for the purpose set forth.

7. The combination, with a non-cylindrical damper-spindle, of a damper-blade formed of two plates lying on opposite sides of the spindle, one of said plates being flat and the other formed with a corrugation conforming to the non-cylindrical spindle, and said plates being fastened together by turning the edge of one over the edge of the other, substantially as shown and described, and for the purpose set forth.

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

EDWARD EMIL LEDERLE.

Witnesses:

E. PAYSON WALTON,  
W. D. HERRING.