

No. 677,280.

Patented June 25, 1901.

C. F. SCHNEE & T. A. NICHOLS.

FLUE STOP.

(Application filed Feb. 26, 1900.)

(No Model.)

Fig. 1.

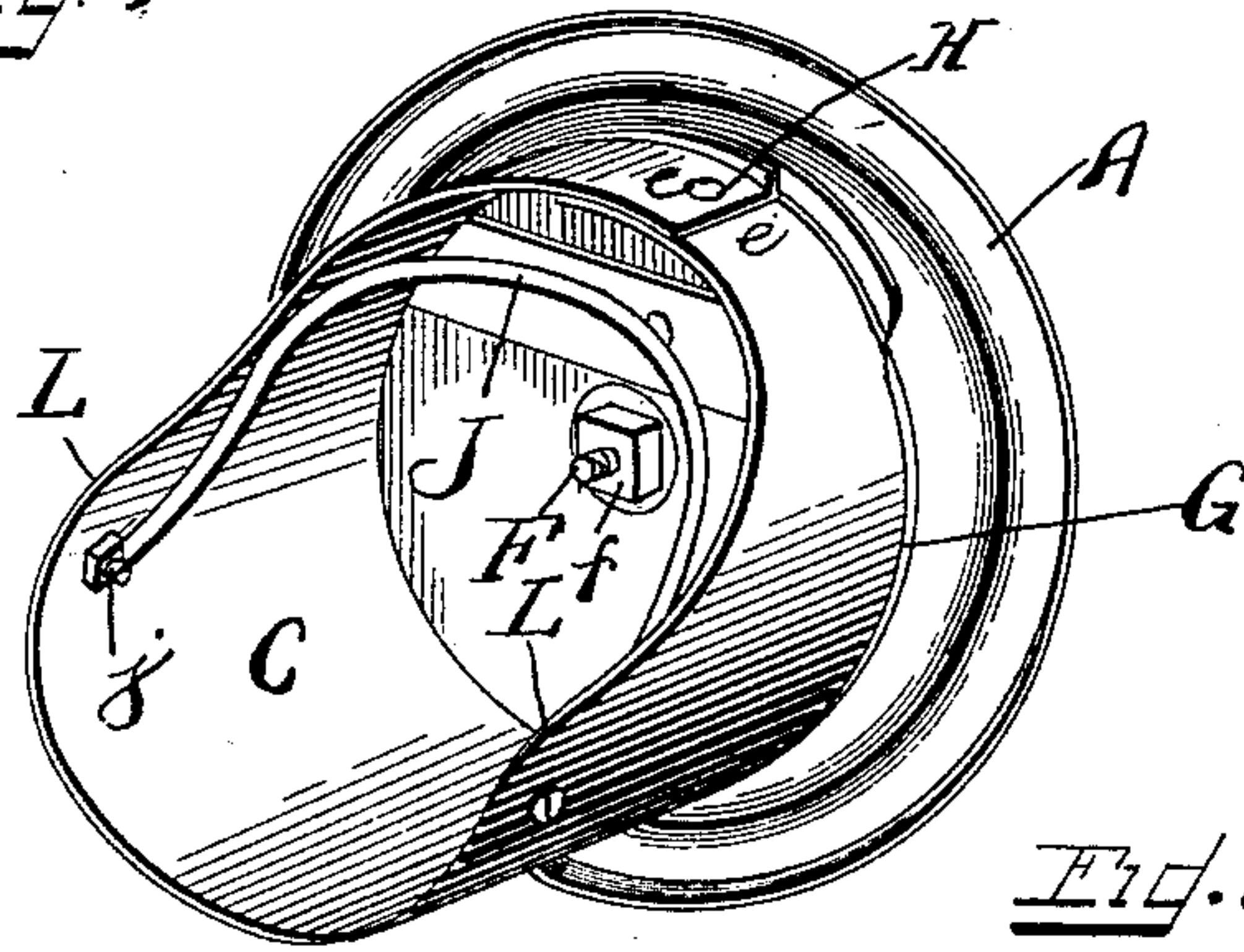


Fig. 2.

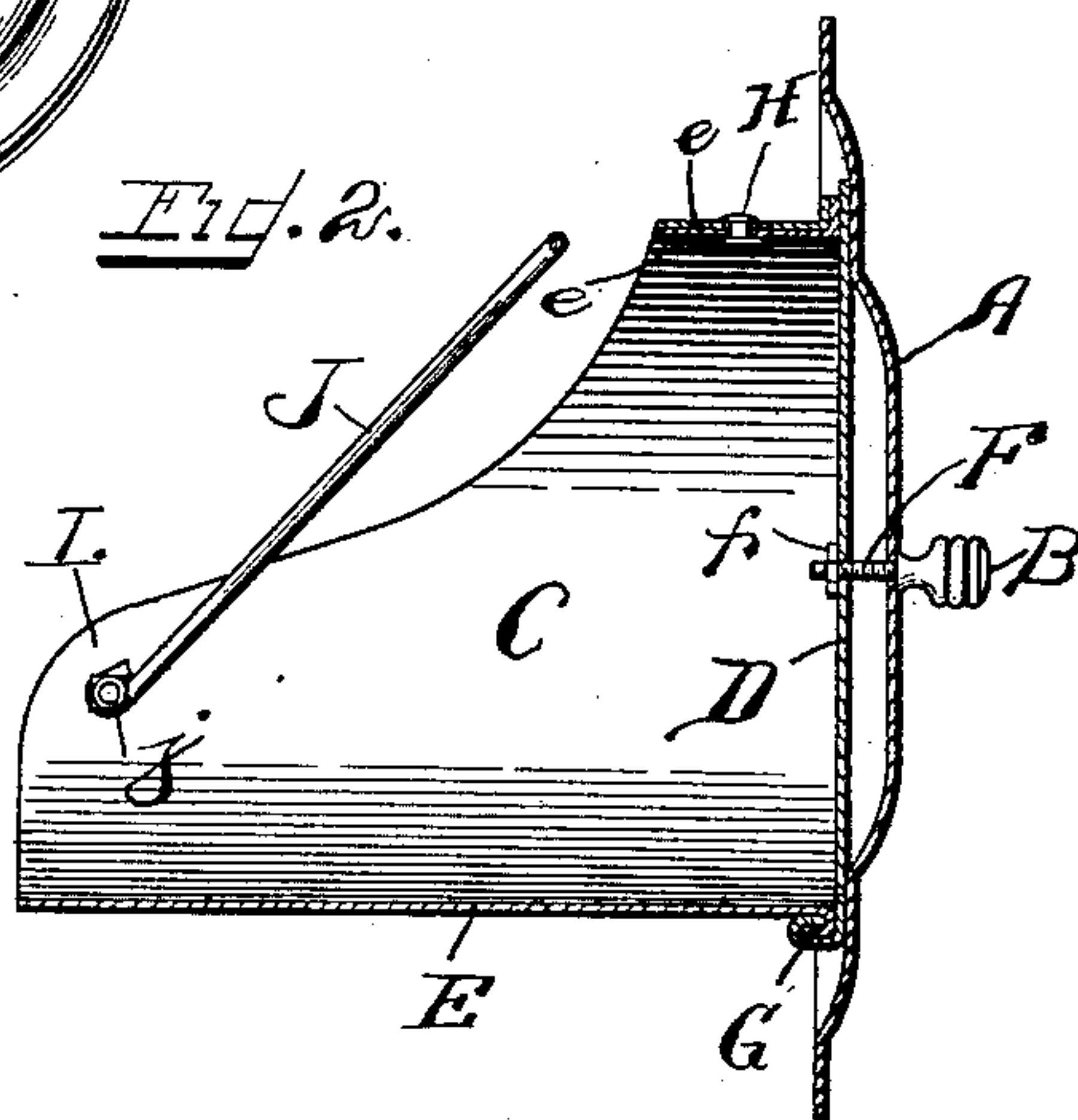


Fig. 3.

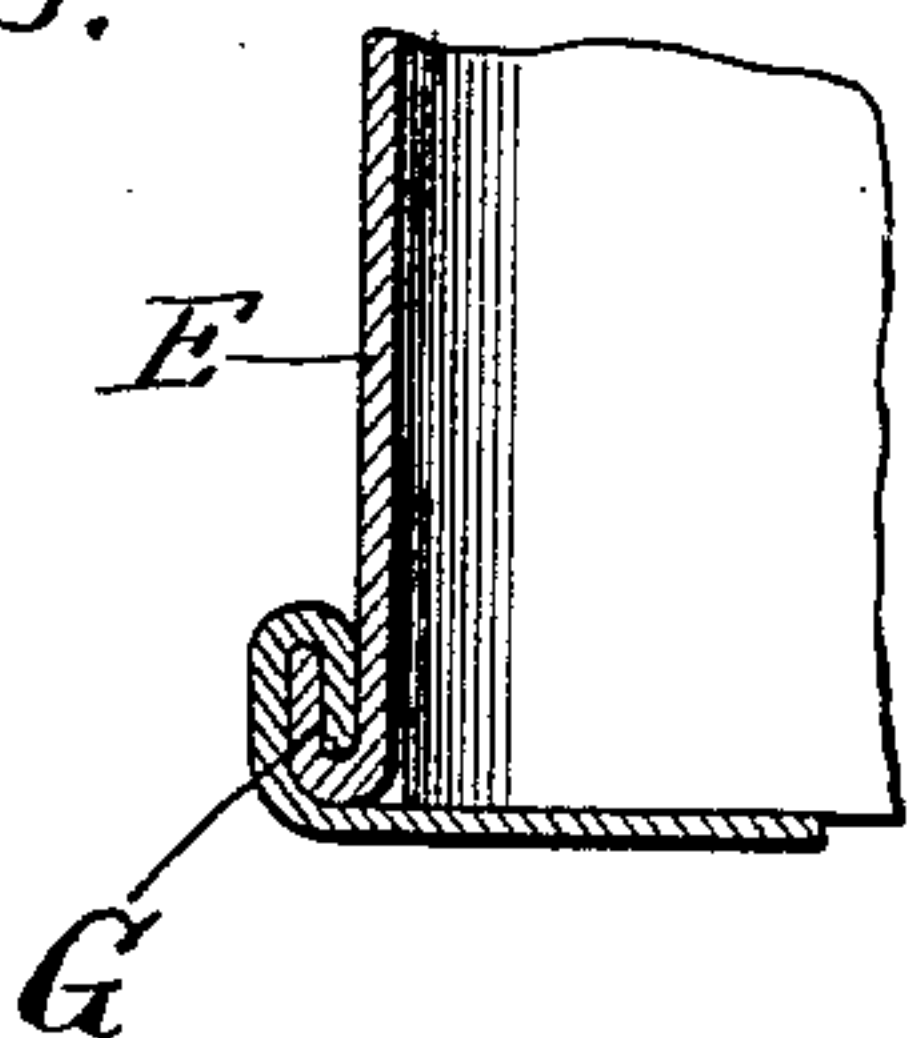


Fig. 4.

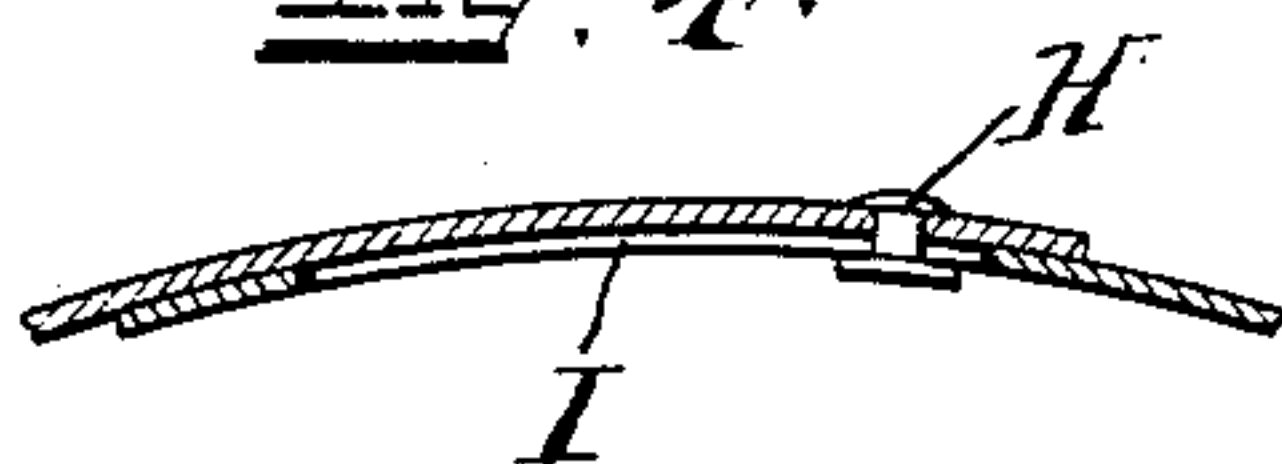


Fig. 5.

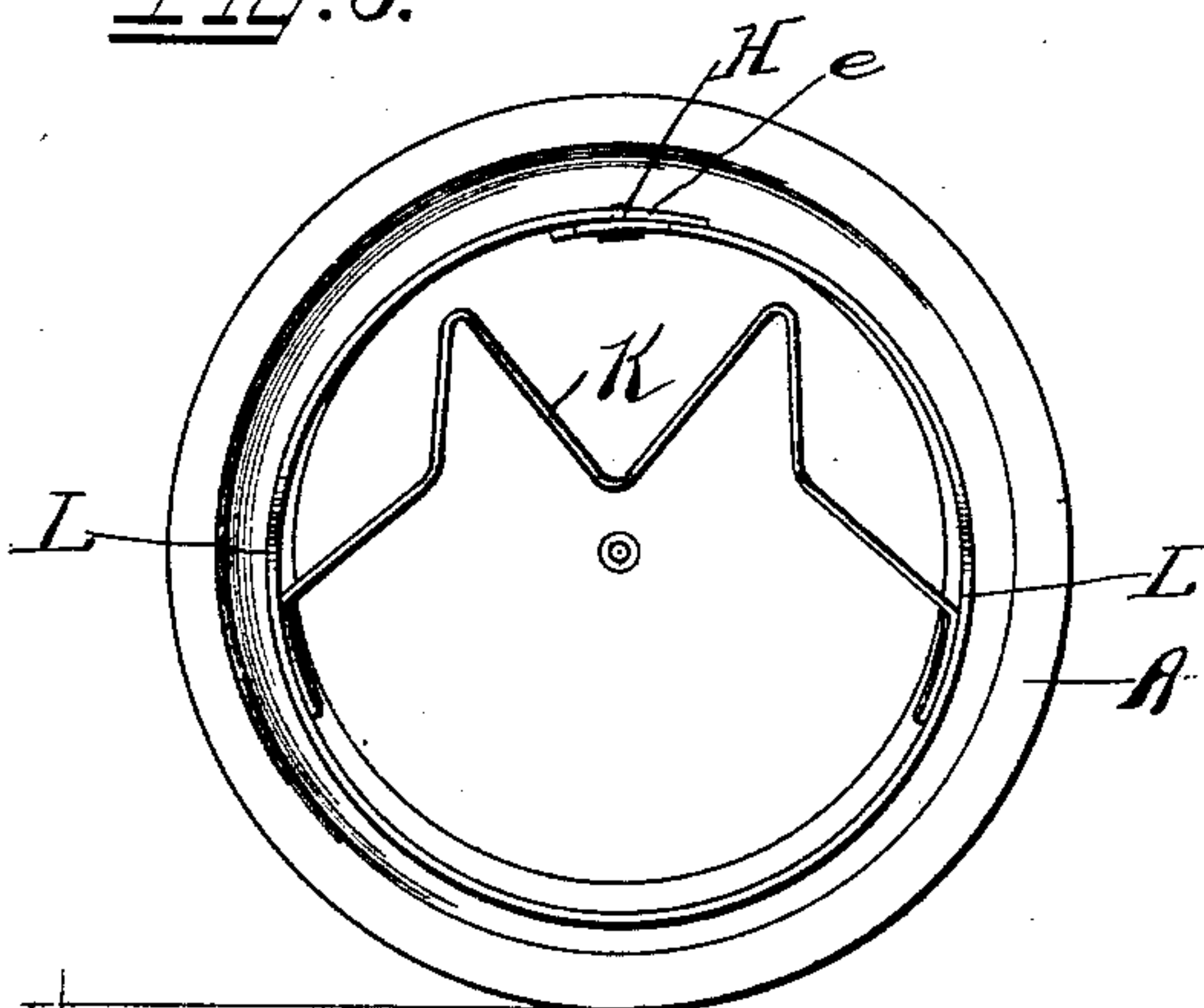
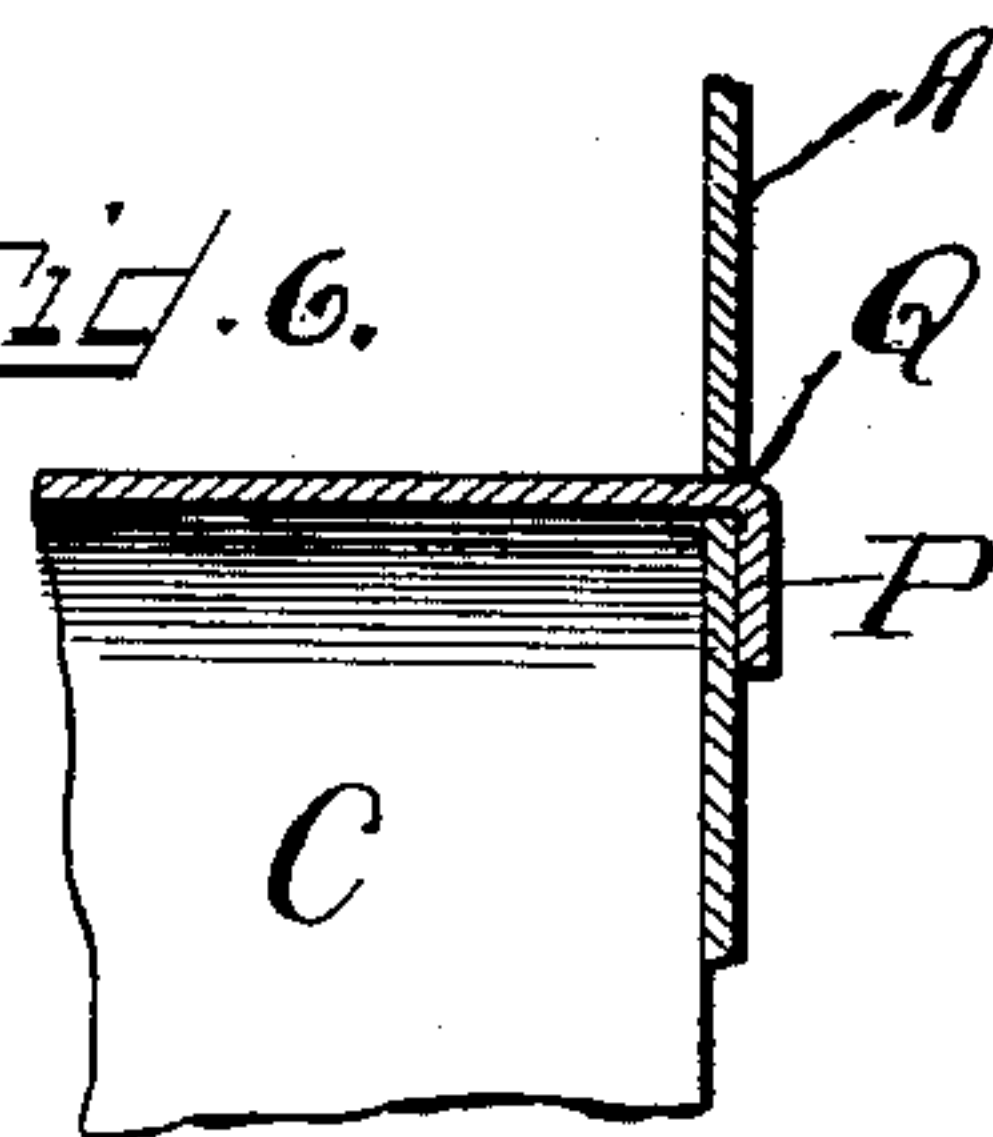


Fig. 6.



WITNESSES

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UNITED STATES PATENT OFFICE.

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FLUE-STOP.

SPECIFICATION forming part of Letters Patent No. 677,280, dated June 25, 1901.

Application filed February 26, 1900. Serial No. 6,566. (No model.)

To all whom it may concern:

Be it known that we, CALVIN F. SCHNEE and THOMAS A. NICHOLS, citizens of the United States, residing at Stronghurst, in the county of Henderson and State of Illinois, have invented certain new and useful Improvements in Flue-Stops, of which the following is a specification.

Our invention relates to certain new and useful improvements in flue-stoppers, and it is particularly designed and adapted to form a perfect closure for a flue-opening and also prevent the escape of soot into the room when the stopper is withdrawn for any purpose.

Another object of our invention is to provide a flue-stopper of novel construction which is arranged to extend some distance into the flue-opening for the purpose of receiving the accumulation of soot, the construction being such that the stopper will not be entirely removed from the opening when said opening is disclosed, so that whatever soot is forced outward by the draft of air will be caught in the stopper; and another important object of our invention is to provide a flue-stopper of novel construction which is adapted to be held in proper position in the flue-opening by frictional contact and which is capable of adjusting itself automatically to the flue-opening in order to form a close contact with its walls and a perfect closure of the opening.

Our invention also has in view to provide an improved spreader device for maintaining the stopper in close frictional contact with the walls of the flue-opening, and other objects, which will appear hereinafter in the detailed description, as shown in the accompanying drawings, in which—

Figure 1 is a perspective view of our improved flue-stopper. Fig. 2 is a longitudinal sectional view. Fig. 3 illustrates in section the manner in which the body of the scoop is seamed to its head on a portion of its periphery. Fig. 4 is a sectional view showing the pin-and-slot connection between the ends of the body of the scoop. Fig. 5 is an end elevation showing a modified construction. Fig. 6 is a sectional view showing how the body may be fastened to its head or to the front plate.

Referring to the drawings, in which like letters of reference denote corresponding parts in all of the figures, A designates the usual front plate of our improved flue-stopper, which can be made in any shape and ornamented as desired, being provided also with a knob B, by means of which the stopper can be inserted in or removed from the flue-opening. A common form of flue-stopper consists of a front plate, such as A, provided with several spring-arms on its back, which are adapted to enter the opening and engage the walls thereof, the closure being effected by the engagement of the edge of the front plate with the wall immediately surrounding the flue-opening. When such a flue-stopper is removed from the opening, the accumulated soot in the flue will be drawn outward by the spring-arms, and particularly by the draft of air, and as no means are provided for catching or confining the soot it will spread and scatter in all directions. Our improved stopper is designed to prevent the escape of soot from the flue when the stopper is removed, and we accomplish this end by the improved construction, which we will now proceed to describe.

E is a hollow body constituting, in fact and in effect, a hollow plug which is adapted to occupy the flue-opening and which is attached to the front plate, preferably through the medium of a head D, a screw-bolt F, attached to the knob and projecting through openings in the front plate and head, and a nut *f*, turned onto the bolt and engaging the head. The body E comprises a short cylindrical portion *e*, immediately adjacent to the head and united thereto, so as to permit of variations in its diameter, and a scoop-like extension proceeding inward from the cylindrical portion a distance sufficient for the purposes hereinafter described, the cylindrical portion itself being of sufficient length to extend into the flue-opening and have a firm frictional engagement therewith. In order to permit of variations in the diameter of the cylindrical portion, it is attached to the head D at one side only, (hereinafter called the "under" side,) while it is left free from said head at the opposite side, (hereinafter called the "upper" side,) and the meeting ends of the sheet of

which it is formed are left free to move relatively to each other. Preferably one of the two overlapping ends is provided with a headed pin H and the other with a slot I, through which it projects, so that their curvature is maintained, while at the same time they are left free to move relatively to each other. For the purpose of attaching the under side of the cylindrical portion of the body to the head we prefer to roll or fold their margins together to form a seam, as shown at G. The entire body E is formed of a single piece of elastic sheet metal, so that a variation in the diameter of one portion of it will cause a corresponding variation in other portions of it, and this characteristic, taken in connection with the hereinafter-described peculiarities in the shape of the walls of the scoop-like extension, enables the body as a whole to automatically accommodate and adjust itself to the flue-opening as it is being forced thereinto. It will be seen that the walls of the scoop-like extension extend practically to the top of the cylindrical portion of the body and that from this point they slope downward or diminish in height to the inner end of said extension and quite to or past the horizontal center thereof. We are aware that it has been proposed to provide a flue-stopper with a hollow plug or body that comprises a cylindrical portion and a scoop-like extension having sloping walls that do not extend above the horizontal center of the plug or body; but this is not the equivalent of carrying the sloping walls above and to the top (practically) of the cylindrical portion of the body. By reason of this latter construction as the body is inserted in the flue-opening the sloping edges of the walls of the extension engaging the wall of the flue-opening act like cams and automatically and gradually contract the body from end to end, so that when the cylindrical portion of the body reaches the flue-opening it will have been contracted sufficiently to enter without further manipulation.

We also provide a spreader J, which preferably consists of a U-shaped piece of stout wire having its ends pivotally connected at J to the body, this spreader being shaped and bent so that it will bear upon the inner sides of the body and hold them distended in a somewhat irregular shape, so that when arranged in a flue-opening they will be forced by the spreader into close frictional contact with the walls of the opening, and the stopper thereby held securely in place.

When the spreader is made in the form just described, it can also be turned into position for use as a handle, the front plate hanging down, whereby the body, with the soot contained therein, may be conveniently carried; but in Fig. 5 we have shown another manner of making the spreader, which consists of an irregular-shaped spring K, secured within the body in a manner substantially similar to the spreader J and operat-

ing to all intents and purposes in the same manner.

It will be observed that in both arrangements last above described all parts of the spreader are entirely within the body, thus avoiding obstructing projections on the outside of the body, that would interfere with the easy insertion of the body in the flue-opening and its automatic action already described.

It will be observed that we have provided a double head on our improved stopper, consisting of the head D and the front plate A, the arrangement being such as to effectually prevent the escape of soot around the edges of the front plate while the stopper is in place in a flue-opening. We are aware, however, that the head D could be omitted and the body E secured to the front plate A in a variety of different ways, and we reserve the right to make all such changes in the form and proportion of parts and details of construction of our invention which fairly fall within the scope and spirit thereof.

The spreader normally holds the ends L of the body distended, so that the body will have sufficient frictional contact with the walls of the opening to hold it securely in place therein. The pin-and-slot connection for the ends of the cylindrical portion of the body also provide an adjustability for the scoop which enables it to be used in flues of different sizes, the fact that the said ends are not seamed to the head thereof permitting these ends to be adjusted one within the other, as desired. As these ends are loosely connected together, it will be observed that when the stopper is finally arranged in the opening the spreader will also cause the ends to have a close frictional contact with the walls of the flue-opening.

When our improved flue-stopper is withdrawn from the opening, there will be no opportunity for the soot to escape, as it is held within the body. The peculiar manner in which the body is formed also enables the stopper to be withdrawn slowly, thereby providing a gradually-increasing opening for the draft of air while the scoop-like extension still remains in the opening to receive whatever soot may be carried thereby. When the stopper is entirely removed from the opening, the spreader may be turned outwardly and used as a handle for the stopper in carrying the same from place to place.

By the use of our improved flue-stopper it will thus be observed we avoid the objectionable features of the ordinary flue-stopper and provide a much more effective closure for the flue-opening and at the same time keep the soot from being discharged into the room. The scoop-like extension of our improved stopper extends far enough into the opening to receive within itself the soot which would ordinarily collect on the wall of the flue adjacent to its end, and, if desired, the stopper

could be withdrawn slightly to free the front plate from engagement with the wall and then turned entirely around before withdrawing the same to scrape the accumulated soot above the scoop-like extension, thereby effectually cleaning the wall of the flue for a distance equal to the length of the body.

The body can be secured to the head or directly to the front plate in different ways—as, for example, by providing lugs P on the front plate of the body, which will pass through openings in the head or the front plate and be bent down in the manner shown in Fig. 6. Other means may be provided without departing from our invention.

Having thus fully described our invention, what we claim, and desire to secure by Letters Patent, is—

1. A flue-stopper comprising a hollow body of variable diameter, said body having a cylindrical portion and a scoop-like extension having walls extending to the top of the cylindrical portion whence they slope downward and inward, and a device attached to and closing the outer end of said body, substantially as described.

2. A flue-stopper comprising a hollow body of variable diameter, said body having a cylindrical portion, and a scoop-like extension having walls extending to the top of the cylindrical portion whence they slope downward and inward to the end of said extension and to the horizontal center of the body, and a device attached to and closing the outer end of said body, substantially as described.

3. A flue-stopper comprising a hollow body of variable diameter, said body having a cylindrical portion, and a scoop-like extension, the walls of which, above the horizontal center of the body, slope downward and inward, and a device attached to and closing the outer end of said body, substantially as described.

4. A flue-stopper comprising a hollow body of variable diameter, said body having a cylindrical portion formed of a piece of sheet metal, the ends of which overlap and are movable relatively to each other, said body having also a scoop-like extension having walls extending to the top of the cylindrical portion whence they slope downward and inward, and

a device attached to and closing the outer end of said body, substantially as described.

5. A flue-stopper comprising a hollow body of variable diameter, said body having a cylindrical portion and a scoop-like extension, the walls of which above the horizontal center of the body slope downward and inward, and a device to which the under side of the outer end of the body is attached, the upper side of said body being free from said device, substantially as described.

6. A flue-stopper comprising a hollow body of variable diameter, said body having a cylindrical portion and a scoop-like extension, a device attached to and closing the outer end of said body, and a spreader located within the body and engaging its sides near the extremity of the scoop-like extension, whereby said sides are spread apart, substantially as described.

7. A flue-stopper comprising a hollow body of variable diameter, said body having a cylindrical portion, a scoop-like extension having walls which above the horizontal center of the body slope downward and inward, a device attached to and closing the outer end of said body, and a spreader located wholly within the body and engaging its side walls, whereby they are spread apart, substantially as described.

8. A flue-stopper, comprising a body adapted to be arranged in the flue-opening, a head for said body and a spreader device pivotally connected with the body and adapted to be swung into position for use as a handle, substantially as described.

9. A flue-stopper, comprising a body having a pin-and-slot connection whereby the body can be expanded or contracted, and a head for said body connected therewith by sewing for a portion of its periphery, the body and head being unconnected adjacent to the pin-and-slot connection, substantially as described.

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