

No. 698,808.

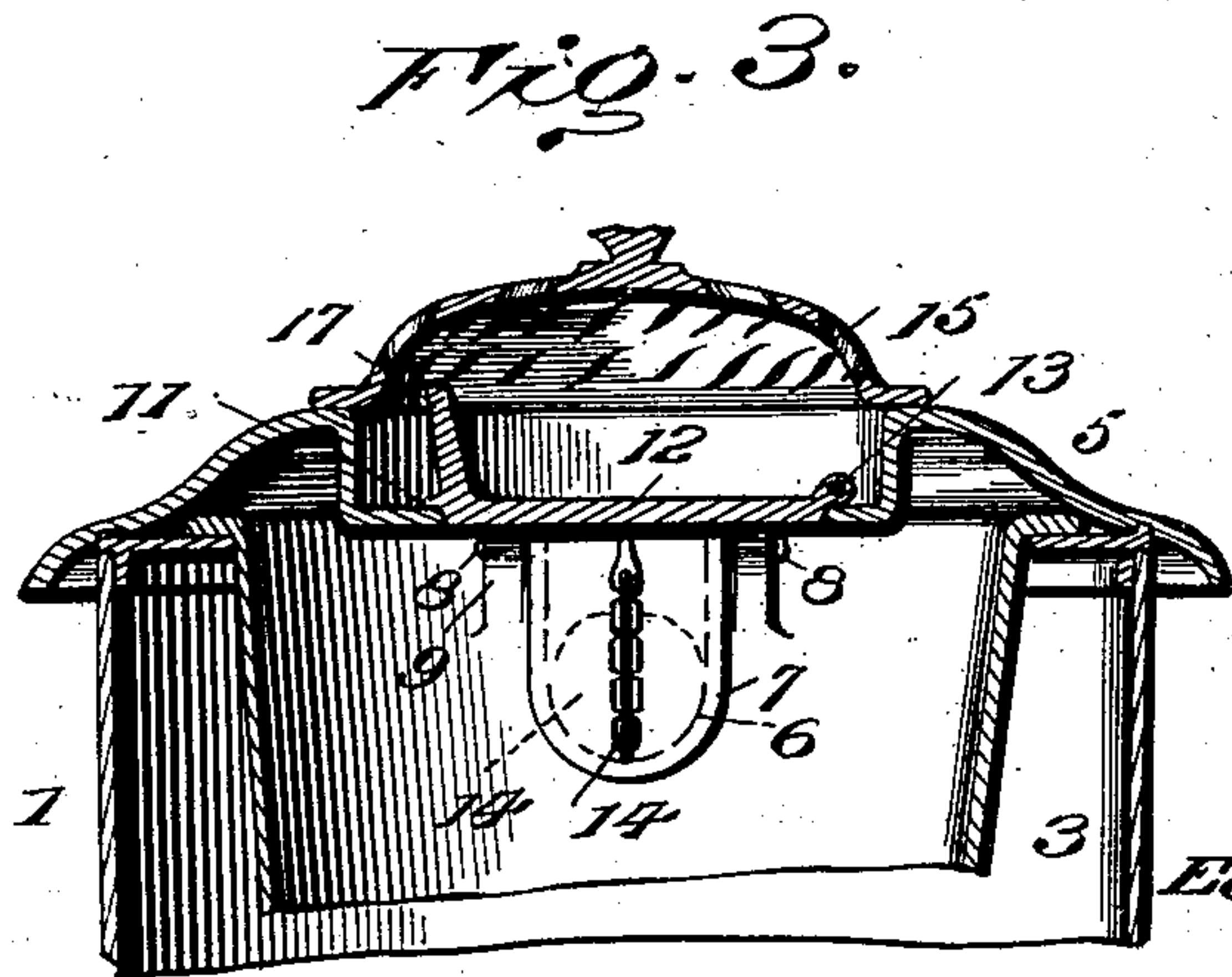
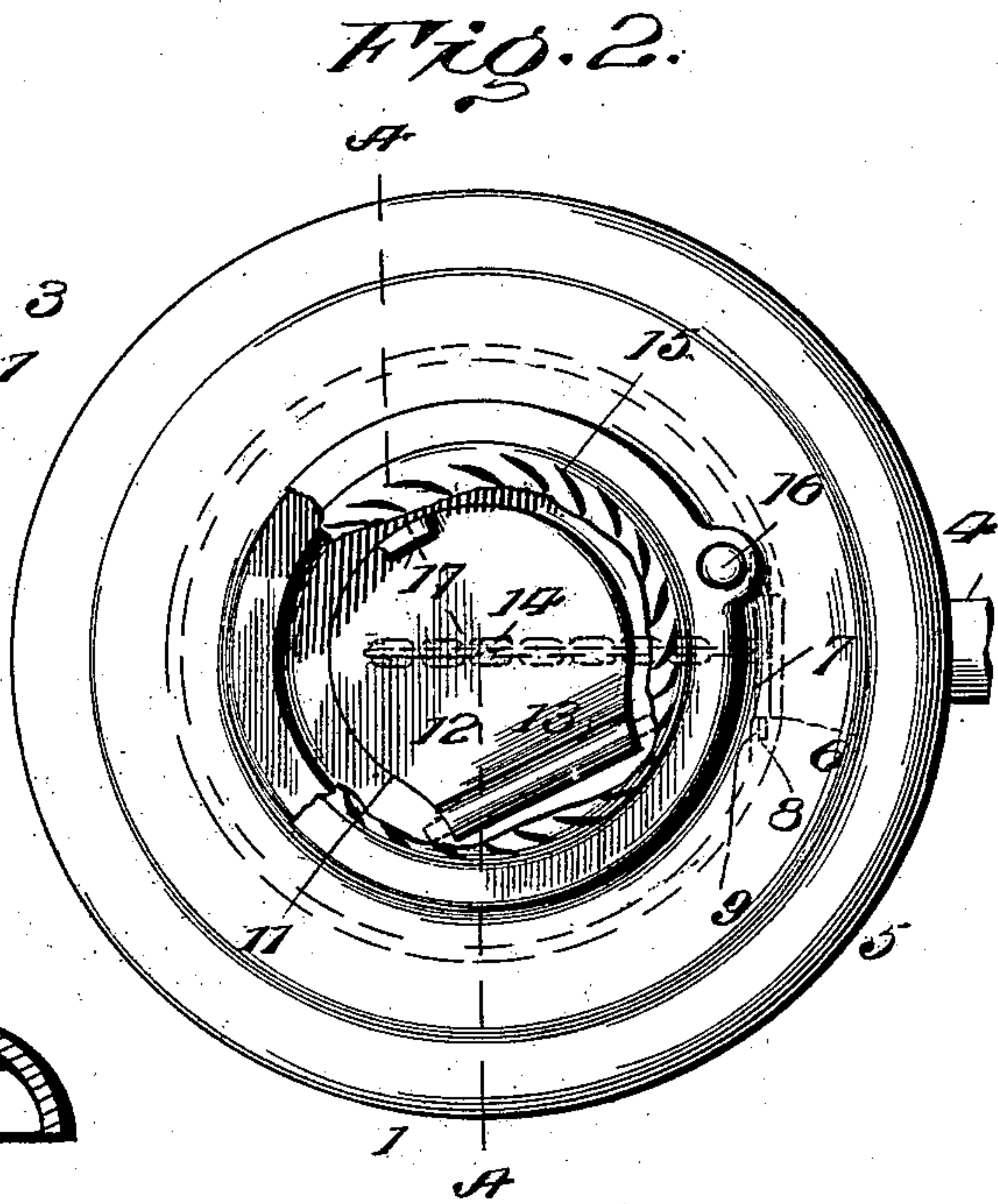
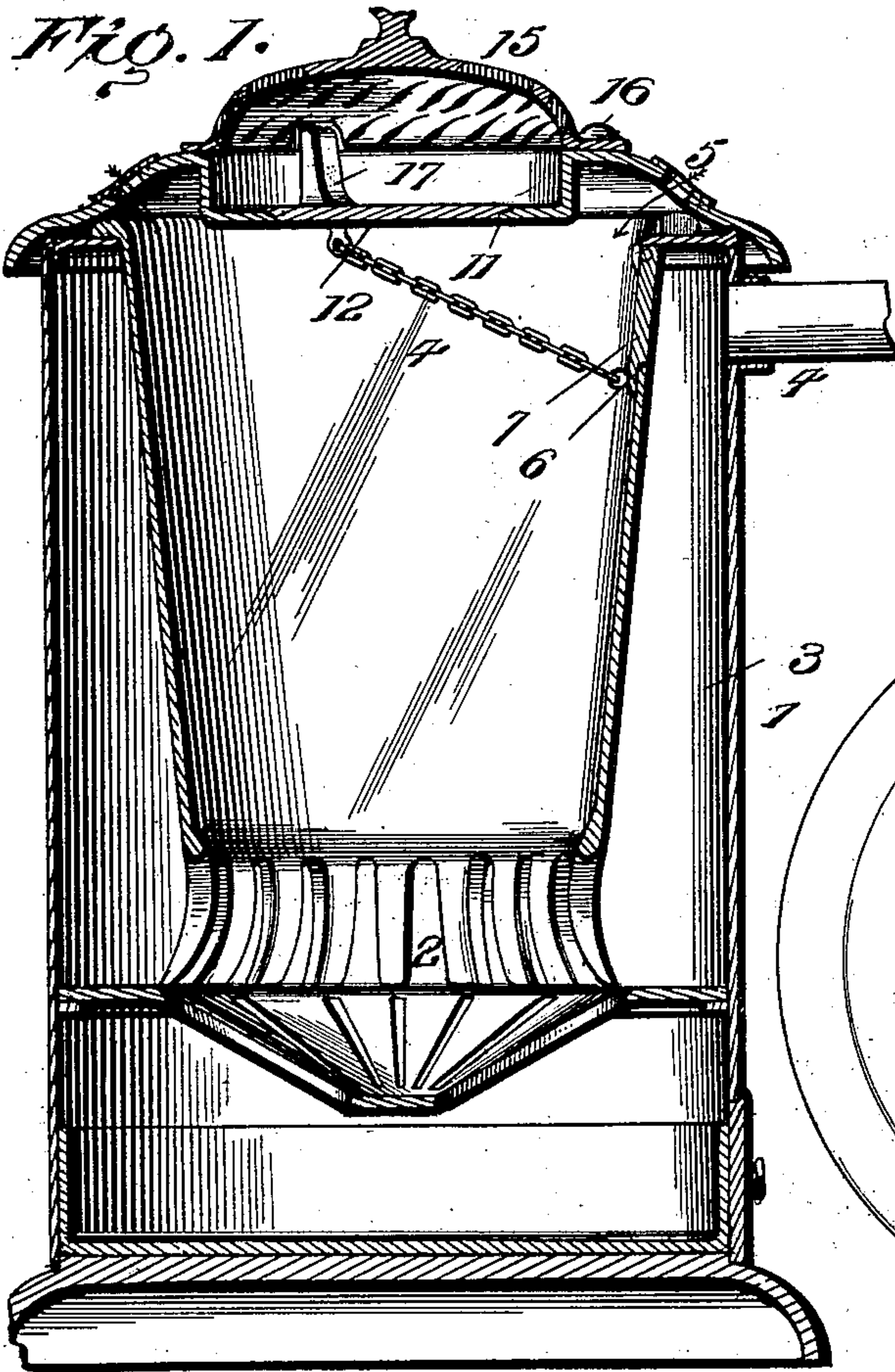
Patented Apr. 29, 1902.

E. R. CAHOONE.

MECHANISM FOR OPERATING DAMPERS.

(Application filed Jan. 13, 1902.)

(No Model.)



Witnesses
Wm. J. Jacob
Denzel J. Matthews

Inventor
Edwin R. Cahoon
By *J. M. Inman* Attorney

UNITED STATES PATENT OFFICE.

EDWIN R. CAHOONE, OF TROY, NEW YORK.

MECHANISM FOR OPERATING DAMPERS.

SPECIFICATION forming part of Letters Patent No. 698,808, dated April 29, 1902.

Original application filed March 5, 1901, Serial No. 49,819. Divided and this application filed January 13, 1902. Serial No. 89,559. (No model.)

To all whom it may concern:

Be it known that I, EDWIN R. CAHOONE, a citizen of the United States, residing at Troy, in the county of Rensselaer and State of New York, have invented certain new and useful Improvements in Mechanism for Operating Dampers; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in dampers for downdraft-stoves and the means employed for operating the same and is a division of my application, Serial No. 49,819, filed March 5, 1901.

In downdraft-stoves considerable difficulty has been experienced in preventing the gases which lag above the fuel escaping into the room when the feed-door is opened—that is to say, when the door is opened it creates somewhat of a suction, which withdraws said gases, making it exceedingly unpleasant and not infrequently affects the health of the operator.

It is therefore the object of my present invention to obviate this objectionable feature by providing a damper in the upper part of the fire-pot at a point approximately in line with the smoke-exit flue and connect this damper with the feed-door in such manner that when the latter is raised the damper will be simultaneously opened, permitting the accumulated gases above the fuel to be drawn out of the stove through the exit-flue under the influence of the draft.

Many other advantages will be hereinafter referred to and be particularly pointed out in the claims.

In the drawings forming a part of this specification, Figure 1 is a vertical section of a conventional downdraft-stove, showing the application of my invention. Fig. 2 is a top plan view of a stove, the ornamental swinging cover being broken away. Fig. 3 is a detail section of the upper portion of the stove approximately on the line A A of Fig. 2.

The numeral 1 indicates a downdraft-stove

of ordinary type; 2, the fire-pot; 3, the space between the fire-pot and casing; 4, an exit-flue which communicates with said space, and 5 the stove-top.

In the fire-pot at or near the upper end and approximately opposite the exit-flue 4 is an opening 6, covered by a damper 7. The damper is provided with trunnions 8, seated in open bearings 9, formed in the upper end of the fire-pot, the trunnions being retained in the bearings by the top 5, fitting closely thereon. This construction obviates the necessity of using additional fastening means for positioning the damper.

In the stove-top 5 is the usual feed-opening 11 and feed-door 12, the latter being hinged at 13 to permit of its being swung upwardly. A chain or analogous device 14 connects the door 12 with the damper 7, so that in operation one is dependent on the other. As a rule heating-stoves are provided with a horizontal swinging ornamental cap 15, pivoted at 16, so that in order to obtain access to the feed-door 12 the cap 15 must be swung on its pivot. It is this movement I utilize to open the damper 7 and accomplish such movement by providing an upwardly-extending lug 17 on the door 12, said lug projecting up into the plane of the bottom of the swinging cap 15 and is designed to be struck thereby.

The parts thus assembled, the operation is substantially as follows: Should it be desired to open the feed-door 12, the operator swings the cap 15 around in the direction of the arrow, Fig. 2, whereupon the lower edge of said cap impinges the lug 17, which swings the door 12 upwardly, and by the chain connection with the damper 7 the latter is simultaneously swung upwardly, uncovering the opening 6, which connects the direct draft with the fire-pot.

I am also aware it is old in the art to operate a feed-door by swinging the stove-cap; but to combine this feature with a lifting-damper is unique and has many advantages in a downdraft-stove. A stove equipped with a damper operated as described is, indeed, novel and useful, the foremost of which is that of preventing the admission of cool air to the fire-pot. Heretofore when introducing fuel to the fire-pot the rushing in of the cool

air materially decreases the grade of combustion, so much so that a very large volume of gas would be produced and sucked out into the room. Not so when the incoming air is
 5 drawn away from the incandescent gas into the exit-flue, for when the door 12 is opened the damper 7 is also opened, and instead of the lagging gases rushing into the room such gases, together with the air coming in through
 10 the feed-opening, are immediately pulled through the opening 6, where they are mixed with the escaping gases in the space 3 and carried off through the smoke-exit 4.

From the foregoing description it is thought
 15 the operation and advantages of my invention will be readily understood by those skilled in the art to which it appertains.

Having thus fully described my invention, what I claim as new is—

20 1. In a downdraft-stove, the combination with a casing, a fire-pot having an opening at or near its upper end, a gravity-damper normally covering said opening, an exit-space being formed between the fire-pot and casing,
 25 ing, an exit-flue, a feed-door and a connection between said door and the damper, whereby the damper is uncovered when the feed-door is raised, and communication formed direct with the exit-flue and the fire-pot, said damper closing by gravity when the feed-door is
 30 closed, substantially as described.

2. A device for the purpose described, comprising a damper adapted to be swung upwardly, a hinged door, and means connecting
 35 the door and damper whereby said damper is opened when the door is opened, and closes by gravity when the door is closed, substantially as described.

3. In a stove, the combination with a casing, a cover, a damper having lugs, bearings
 40 which are open adjacent the cover, said lugs being confined by the cover, a feed-door, and means connecting the feed-door and damper, whereby the two are simultaneously operated.

45 4. In a downdraft-stove, the combination with a casing, a top, a feed-door in said top,

a fire-pot having an opening at or near its upper end, a damper normally covering said opening, means connecting the damper and feed-door, and a swinging cap, said cap contacting with the feed-door to open the damper, substantially as described. 50

5. A horizontal swinging member, a door operating at an angle thereto, in combination with a damper, and a connection between the
 55 damper and said door whereby the damper is operated when the horizontal swinging member is operated, substantially as described.

6. A horizontal swinging member, a door operating at an angle thereto, in combination
 60 with a hinged damper, and a chain connecting the damper and said door, whereby the damper is elevated when the horizontal swinging member is operated, substantially as described. 65

7. In a downdraft-stove, the combination with a casing, a fire-pot having an opening at or near the top, bearings which are open at the top, a damper provided with lugs which are seated in said bearings, a top, said top
 70 confining the lugs of the damper in the bearings, a door in the top, and a connection between the door and damper, whereby the damper and door are simultaneously operated, substantially as described. 75

8. In a downdraft-stove, the combination with a casing, a fire-pot having an opening, a damper covering said opening, an exit-space being formed between the fire-pot and casing, an exit-flue communicating with said exit-
 80 space, a feed-door, and a connection between said door and the damper, said connection being a chain, whereby the damper uncovers the opening in the fire-pot when the feed-door is opened, and may be seated independent of
 85 the feed-door, substantially as described.

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

EDWIN R. CAHOONE.

Witnesses:

T. H. PEEL,

JAMES A. O'DONNELL.