

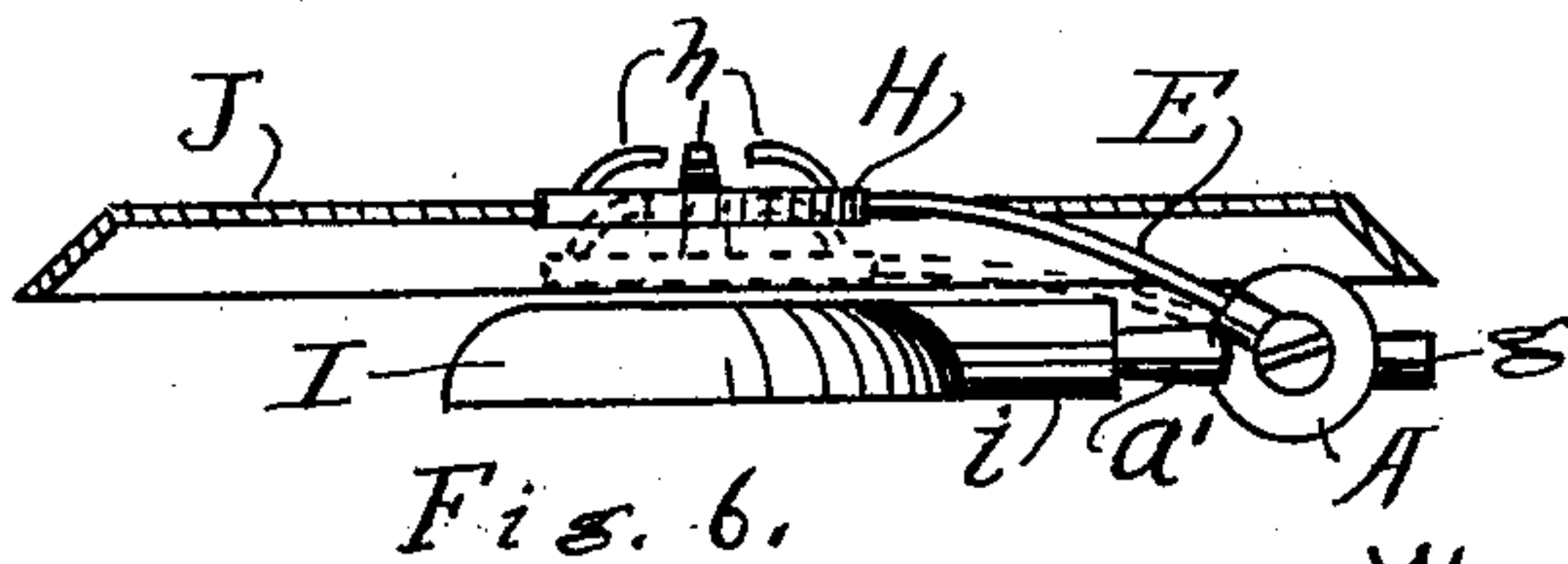
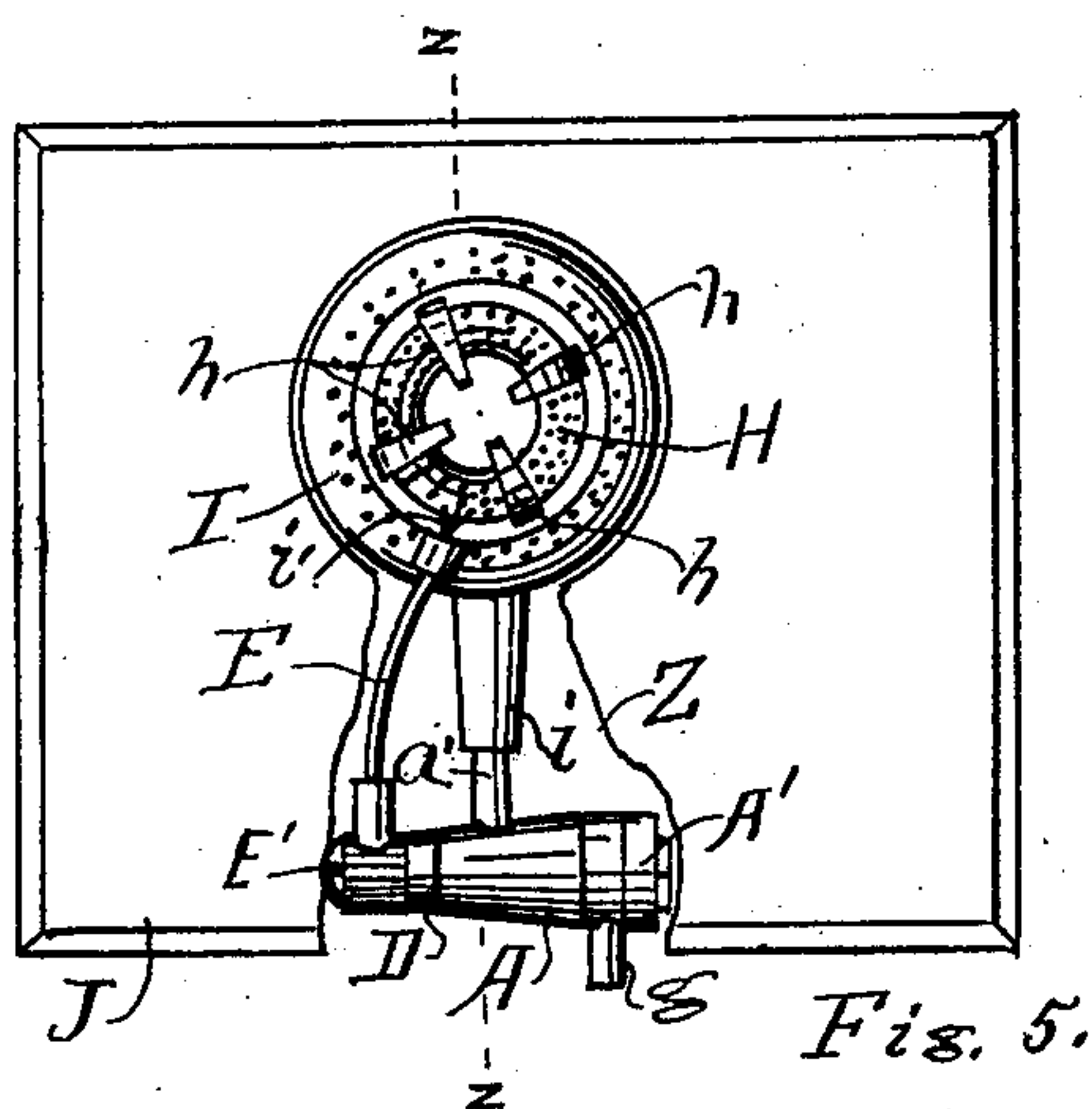
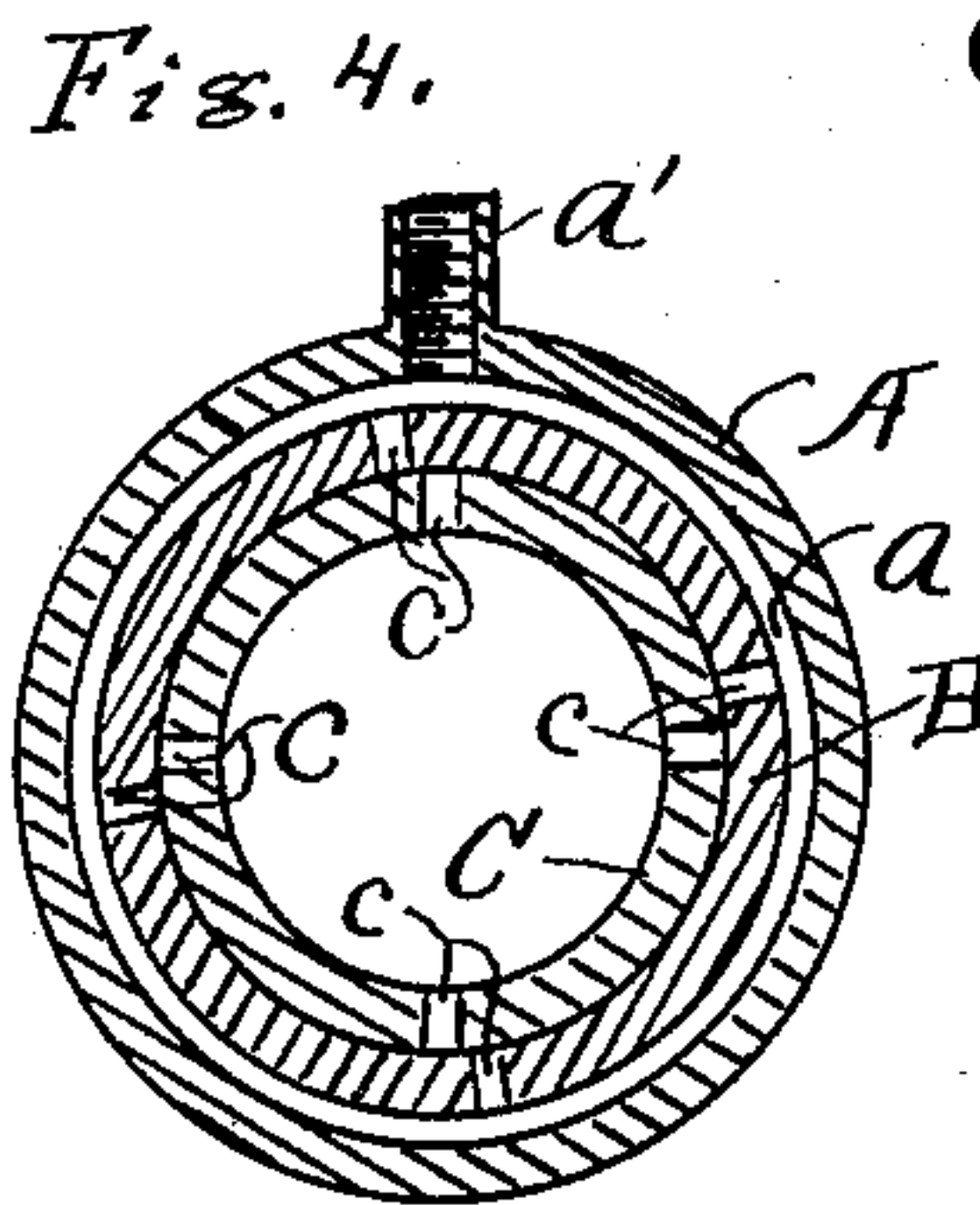
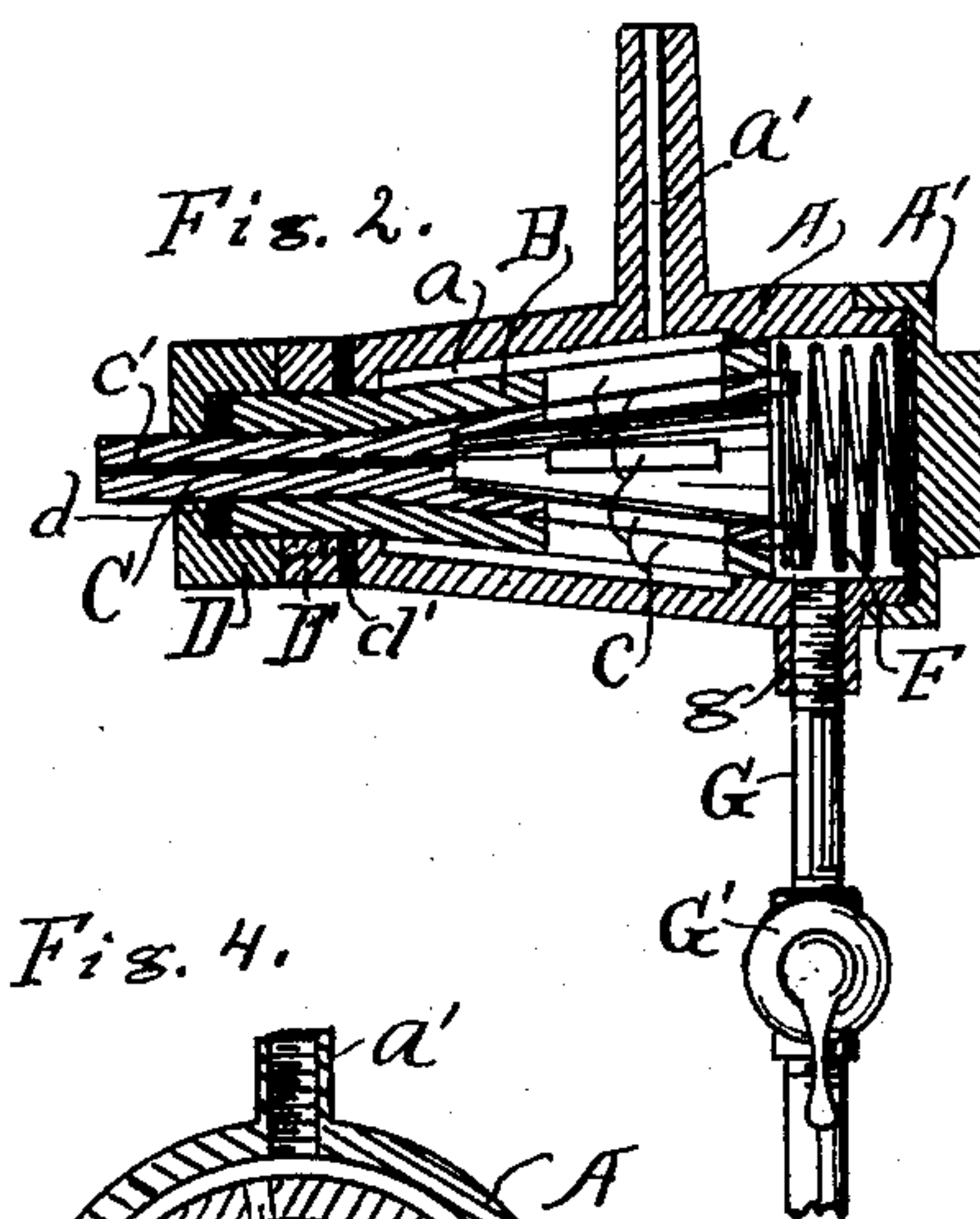
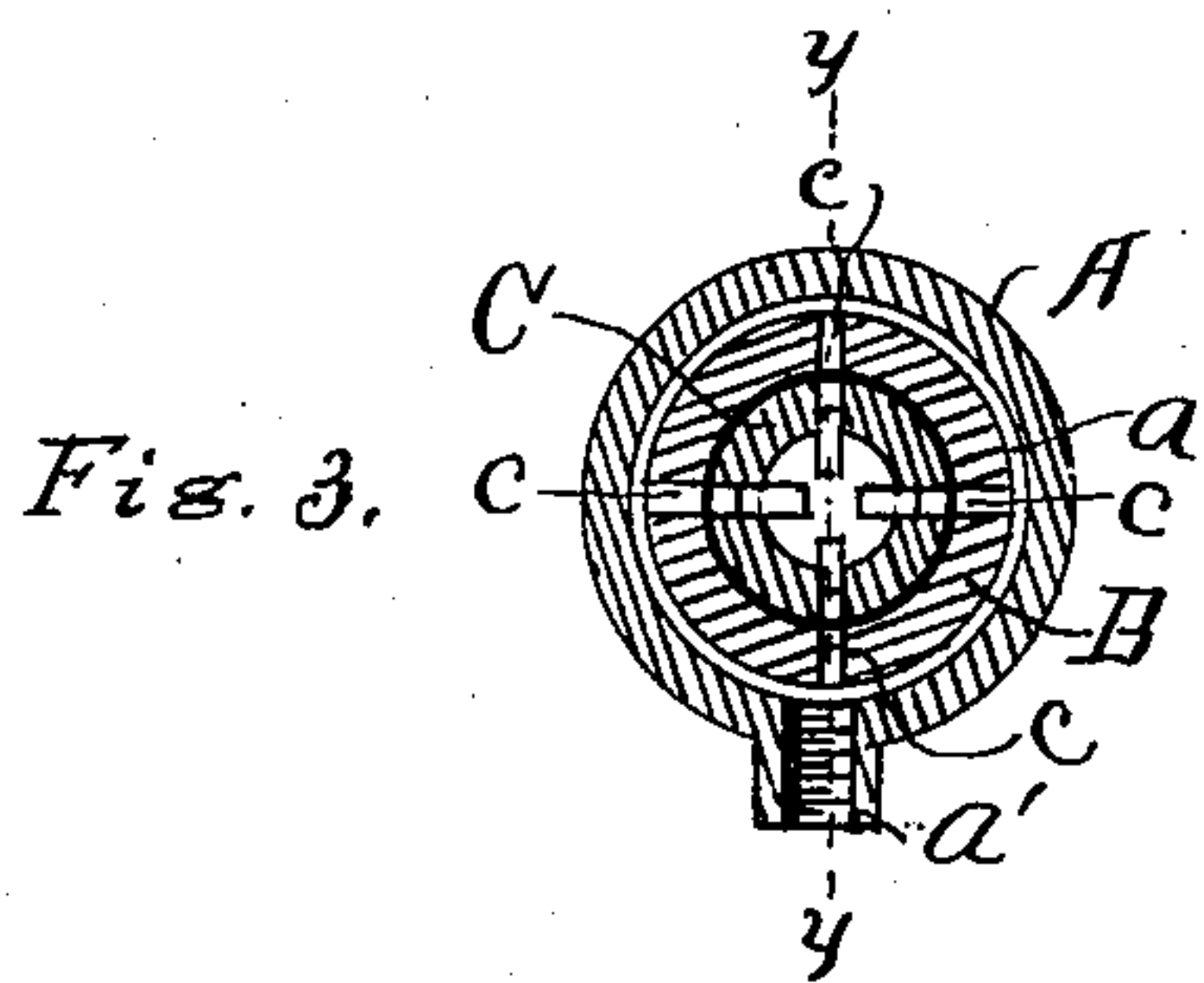
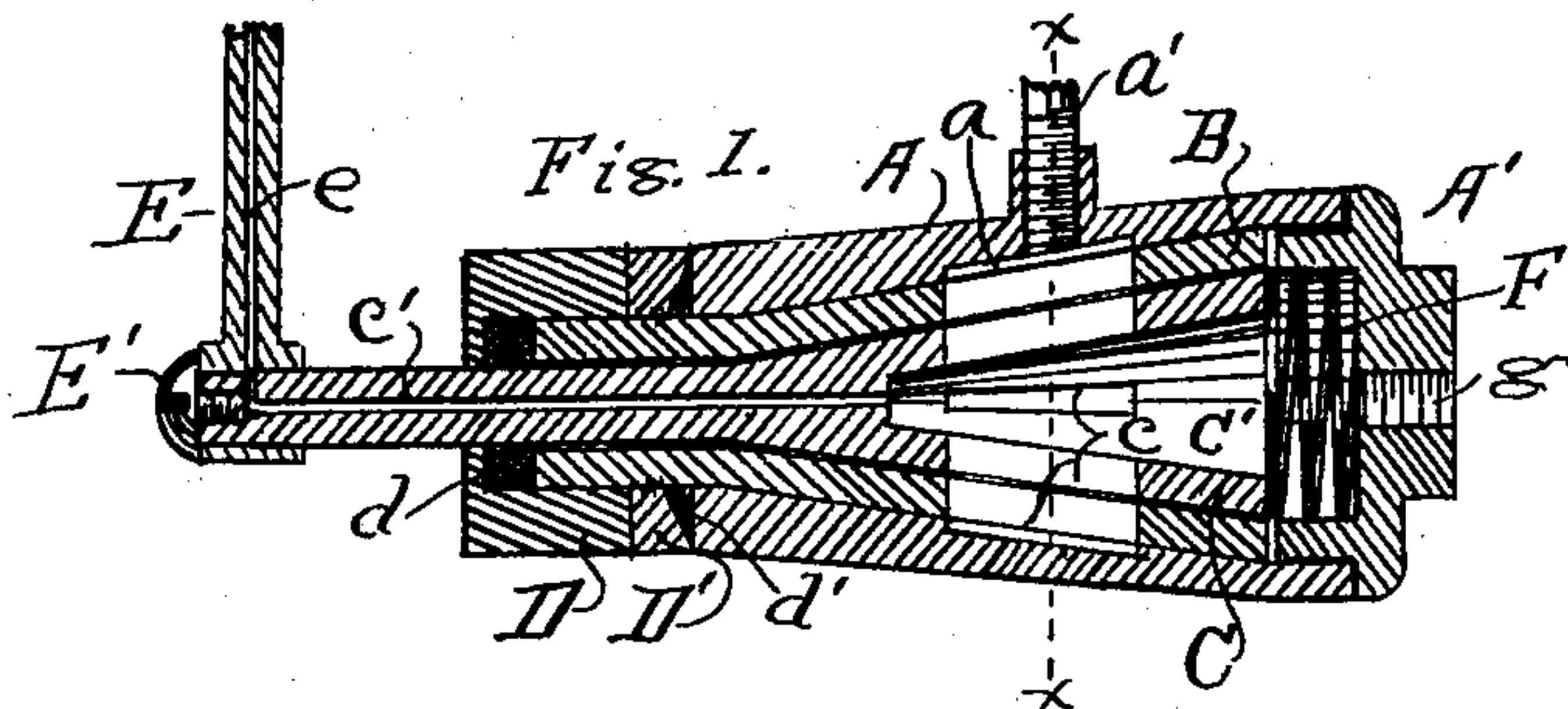
No. 887,945.

PATENTED MAY 19, 1908.

W. J. KENNEDY.  
VALVE.

APPLICATION FILED JULY 6, 1907.

2 SHEETS—SHEET 1.



Witnesses

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By

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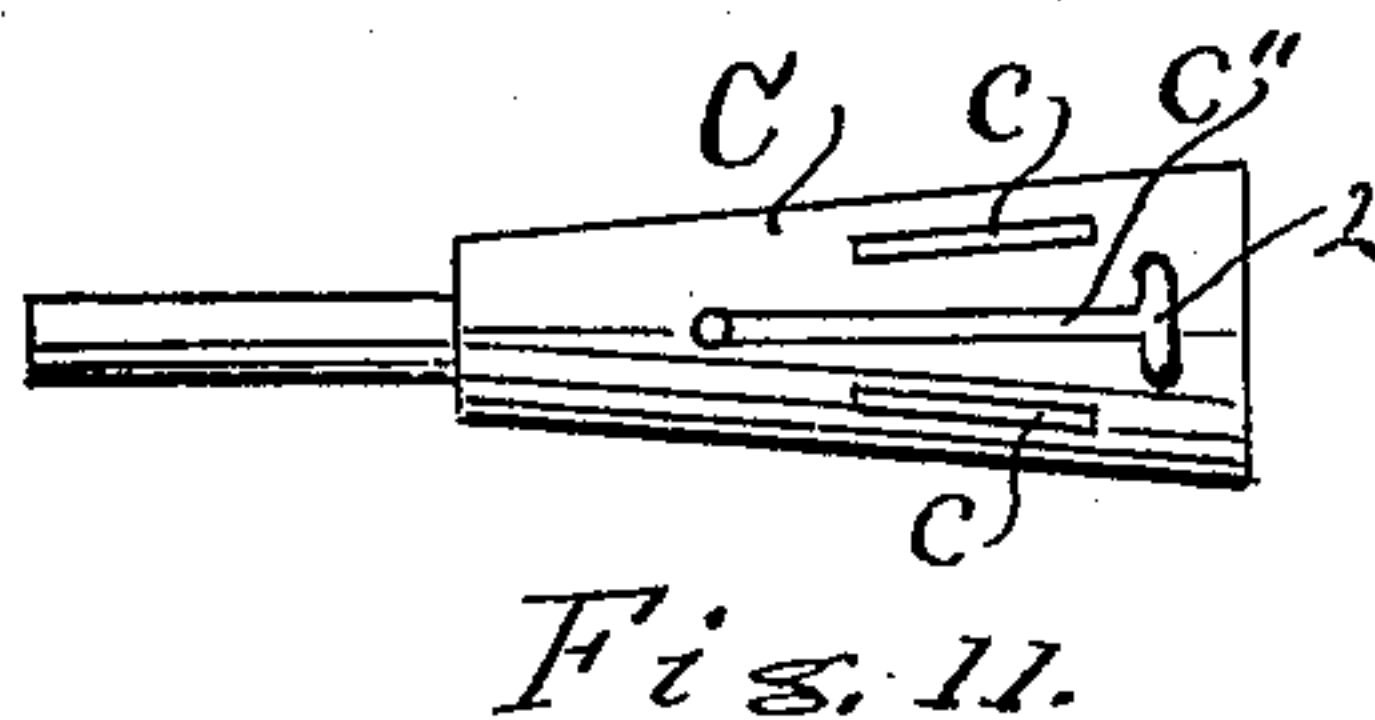
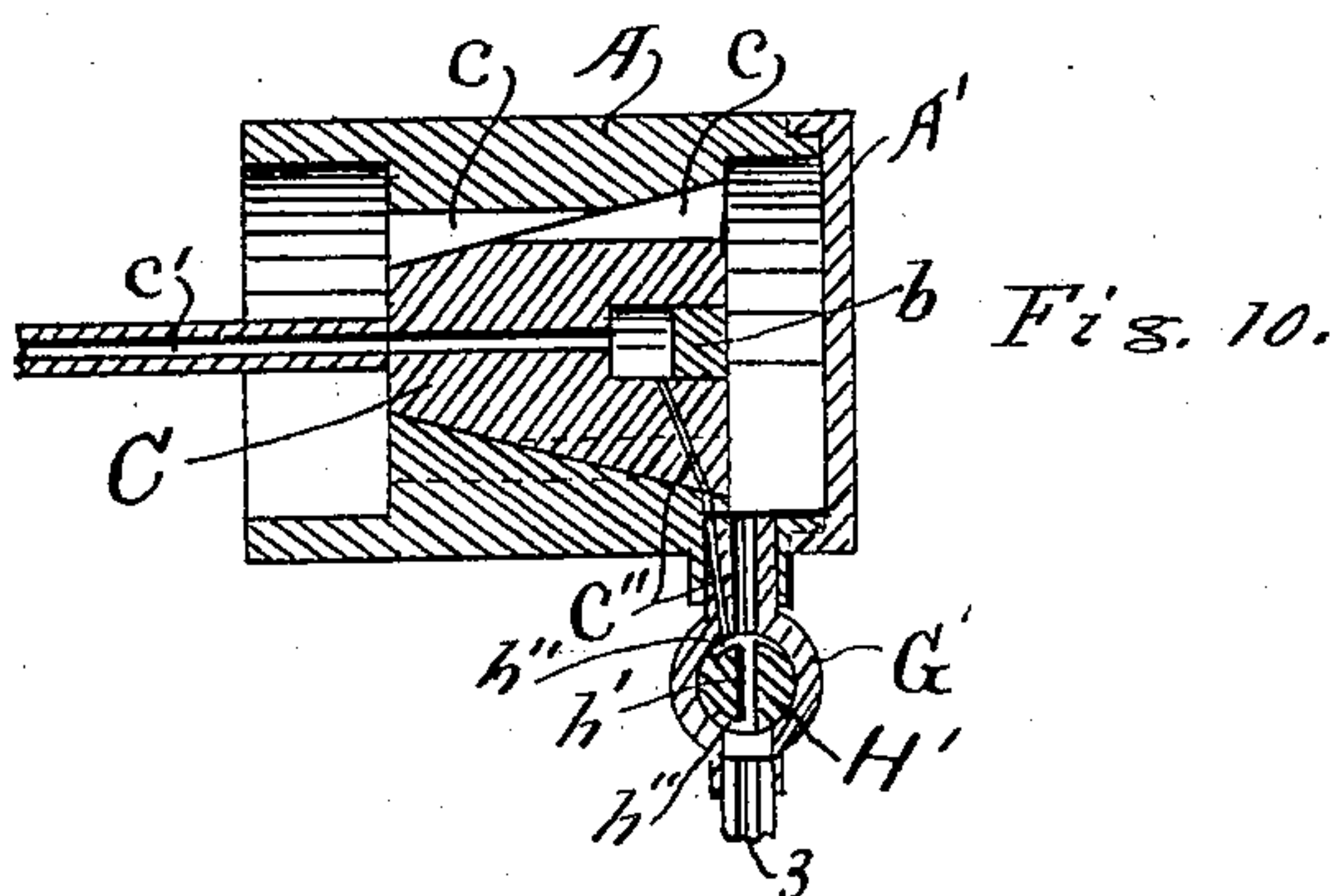
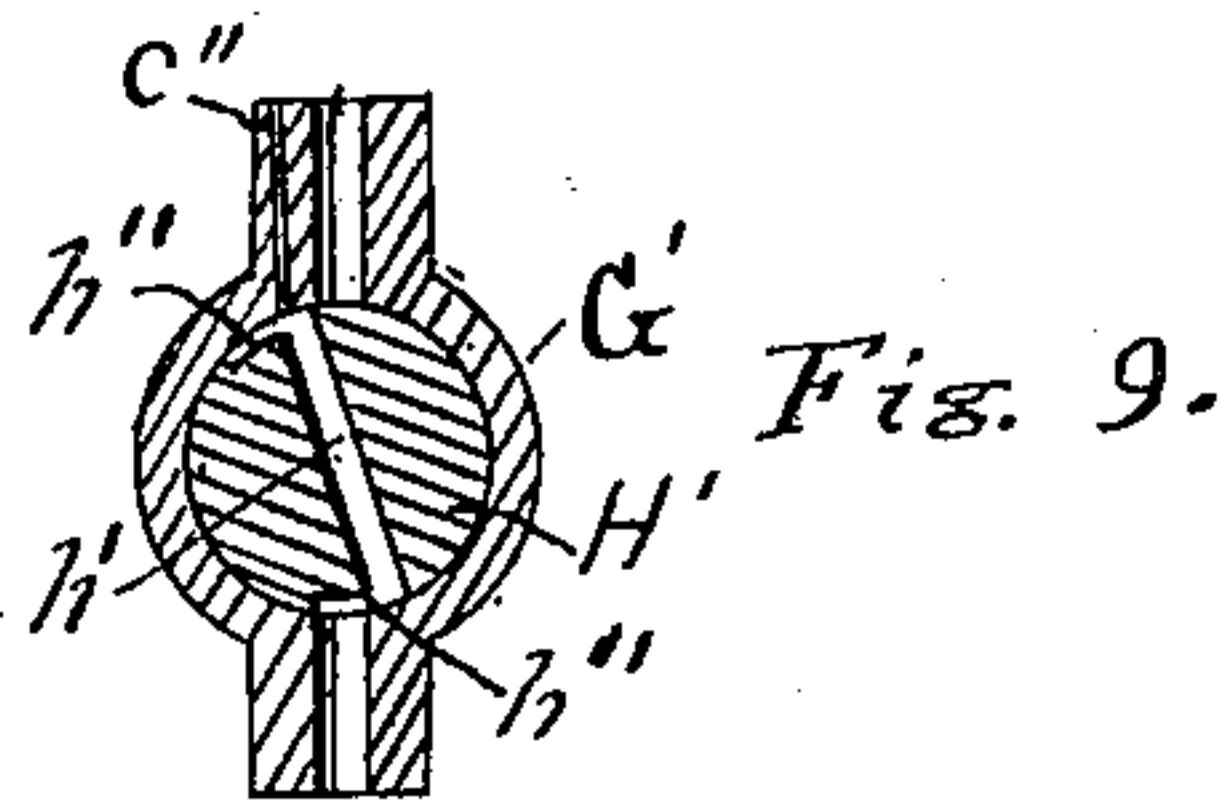
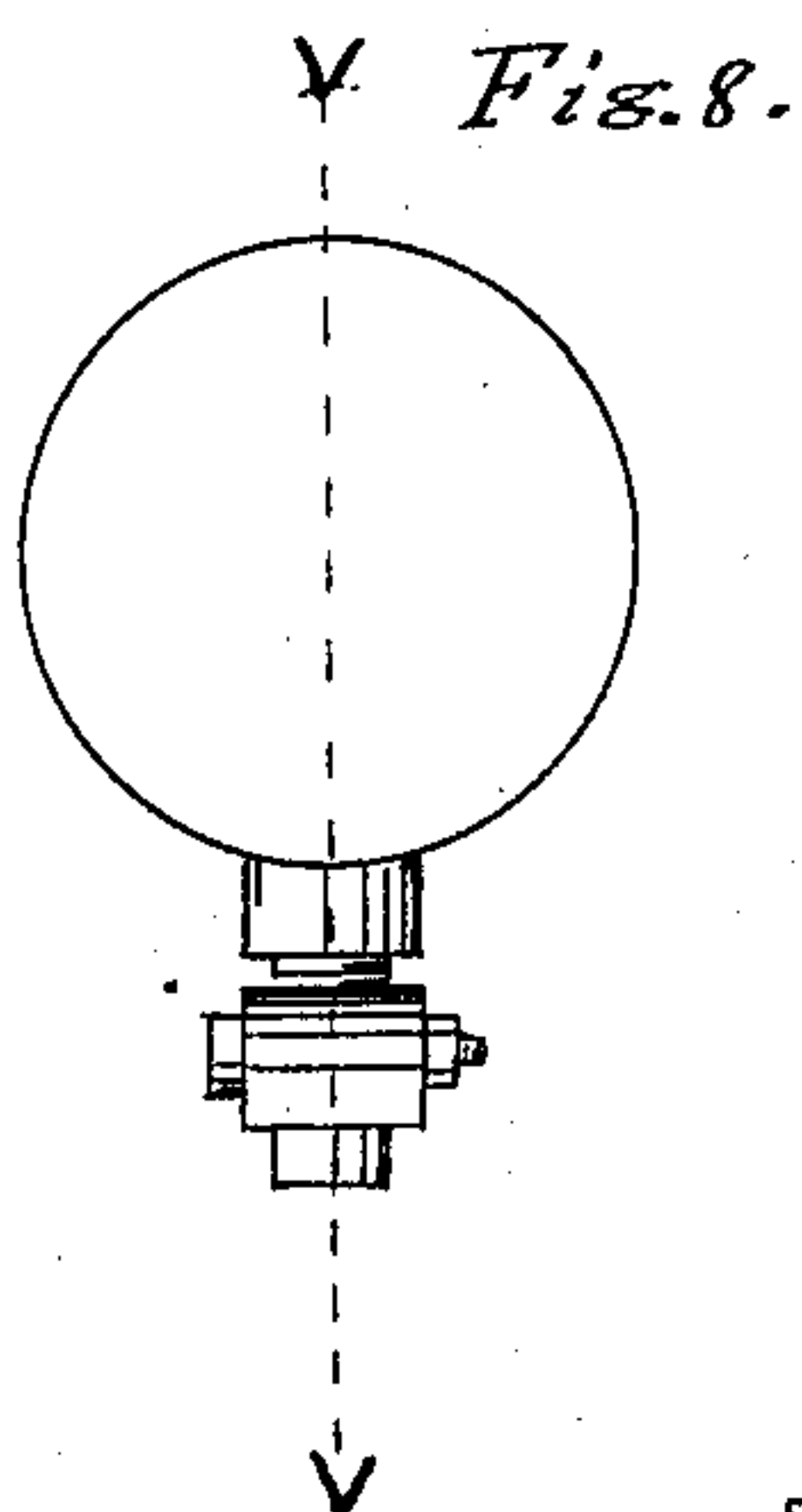
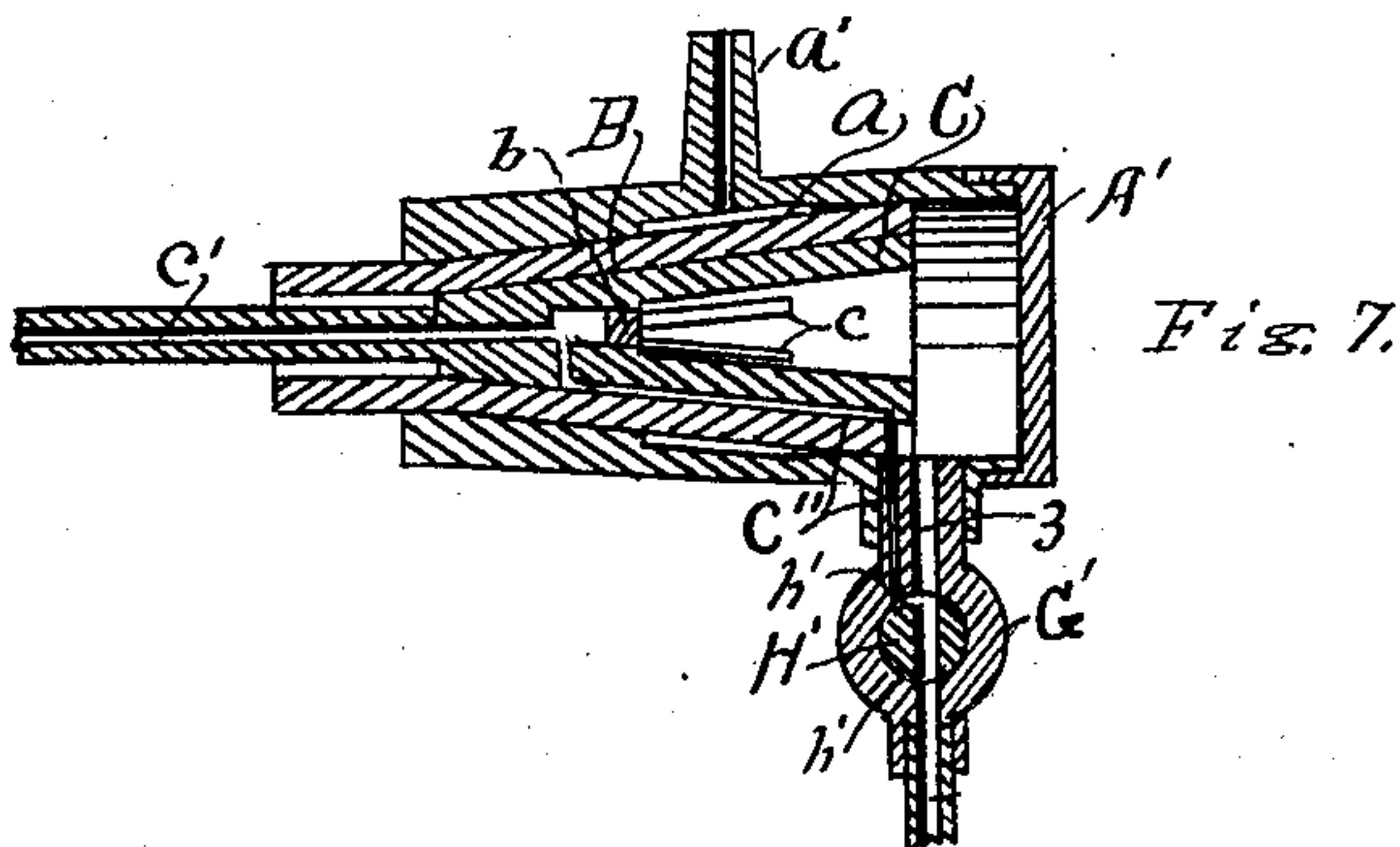
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W. J. KENNEDY.  
VALVE.

APPLICATION FILED JULY 5, 1907

2 SHEETS—SHEET 2.



Witnesses  
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# UNITED STATES PATENT OFFICE.

WALTER J. KENNEDY, OF GRAND RAPIDS, MICHIGAN.

## VALVE.

No. 887,945.

Specification of Letters Patent.

Patented May 19, 1908.

Application filed July 5, 1907. Serial No. 382,356.

*To all whom it may concern:*

Be it known that I, WALTER J. KENNEDY, a citizen of the United States, residing at Grand Rapids, in the county of Kent and State of Michigan, have invented certain new and useful Improvements in Valves, of which the following is a specification.

My invention relates to improvement in valves for use for automatically opening or closing a flow of gas or liquids from its source of supply to a point of consumption, and its objects are: First, to provide a means by which I can control the flow of gas or liquid to exactly meet the demand therefor. Second, to avert all danger of undesirable leakage from or through the valve. Third, to insure a full, free flow of gas through the valve, and fourth, to insure a steady flow to a pilot light.

I attain these objects by the mechanism illustrated in the accompanying drawing in which

Figure 1 is a section of the valve on the line *yy* of Fig. 3 showing the intake pipe entering the end of the valve. Fig. 2 is the same showing the intake pipe entering the side of the valve. Fig. 3 is a transverse section of the valve looking to the left from the line *xx* of Fig. 1. Fig. 4 is the same looking to the right from said line. Fig. 5 is a plan of a gas plate cut away at *Z* to show the application of this valve. Fig. 6 is a vertical section of the same on the line *zz* of Fig. 5. Fig. 7 is a longitudinal section of the valve on the line *yy* of Fig. 3 showing an independent channel for feeding the pilot light where a shell is used between the barrel and the core. Fig. 8 is an end view of the valve. Fig. 9 is a section of the feed valve on the line *vv* of Fig. 8. Fig. 10 is a longitudinal section of a barrel and core without the shell, and showing the independent channel to the pilot light, and Fig. 11 is a plan of a core detached from the barrel.

Similar letters refer to similar parts throughout the several views.

This valve is constructed with a barrel A having a head A'. Inside the barrel is a shell B and a chamber *a* is formed between them for the free passage of gas from the inlet pipe G to the outlet pipe *a'*, through the ports *c*. The small end of the shell B passes beyond the end of the barrel and is secured by the suitable members D and D' in such a manner as to form a gas or liquid tight joint at *d'*, between the nut D' and the small end of the

barrel A, and the nut D is arranged to receive packing *d* and form a gas or liquid tight joint between the nut and the end of the shell B, all so arranged that gas or liquids cannot be introduced to, or discharged from the valve, or in other words, cannot pass through the valve except by way of the intake and discharge pipes and the ports arranged to communicate between these pipes. The shell B has a series of port holes *c* that open into the chamber *a* and are made to form a passage way from the inner chamber of the valve to the annular chamber *a* in the barrel, as follows: I place a rotary core C inside of the shell B, so constructed that it will form a perfectly tight joint with the shell the entire length of the tapering portion thereof. This core is hollow from the large end for some distance toward the small end, as shown in Fig. 1, and has port holes *c* through it in position to be readily made to register with the corresponding port holes in the shell B, or to be easily shut off therefrom, as indicated in Figs. 3 and 4, by simply turning the core enough to produce the effect desired. Thus, when the shell and core are in the positions indicated in Figs. 1, 2 and 3 the gas &c., will pass freely from the inflow pipe G, at *g*, into the valve, through the port holes *c c* and out of the exit pipe *a'*, and in the case of its use with gas, for which it is principally intended, the gas may be passed to a gas burner H to be lighted and used in the usual manner.

When this valve is used upon a gas stove, as indicated in Figs. 5 and 6, I provide for an automatic lighting appliance by making a small channel, as *c'*, through the stem of the core C, and attach a lever E to said stem, said lever having a channel *e* arranged to register with the channel *c'* in the stem so that a small amount of gas may pass through the two to a convenient point near the fingers *h*, which are supported on the ring H, so that a small pilot light may be kept constantly burning directly over the burner I, as at *i'* in Fig. 5, so that as soon as the port holes *c c* are opened the escaping gas from the burner I will be immediately ignited by the pilot light *i'*. This is brought about as follows: The arm or lever E has a ring H mounted at the outer end over the burner I, and this ring has a series of inwardly converging arms or fingers *h h* that are situated directly over, and a little distance above the upper surface of the burner I, and is held up from the burner by any available form of



spring, the more desirable form being indicated at F in Figs. 1 and 2, as this form also acts to hold the core in close contact with the shell, and may be so arranged that it will throw the core around sufficiently to close the port holes *c c* entirely and to support the fingers *h h* far enough above the upper surface of the burner I so that the movement of these fingers down to the burner will open the port holes and allow gas to flow to the burner and become ignited, as hereinbefore stated. The fingers *h h* curve upward and inward from the ring H so that any article that is set upon them, or that is slid along on the top of the plate J will force the fingers *h h* down with the results hereinbefore described. The lever or arm E may be secured to the stem of the core C by means of any available nut or screw, as E', screwed on or into the end of the stem.

G', in Fig. 2, represents a valve set in the inflow pipe G, not a necessary element in my invention.

Thus far the description has been for a valve having the channel for the supply of gas to a pilot light leading directly from the main chamber of the valve through the core and the channel *c'*, &c., but where the pressure is partly shut off from the main burner, as indicated by the position of the plug H' of the valve G', in Fig. 9, the pressure is, often, so low that gas will not be forced through the small channel *c'* in sufficient quantities to insure a continuous burning of the pilot light, and to obviate the danger of the pilot light becoming extinguished under these circumstances I have provided for an independent flow of gas from back of the valve G' by placing a plug *b* in, or otherwise closing the back end of the channel *c'* so that no gas can reach it from the main chamber of the valve. I then make a small channel, *c''*, through the shell of the valve G' and the core C, to the channel *c'*, and form a short offset *h''* at each end of the plug H', in position to communicate with the port hole *h'* through the plug H', so that even though the plug H' is turned so as to partly, or even wholly close the flow of gas through this valve to the main chamber of the valve A A', there will still be a flow of gas to the pilot light.

In Fig. 11 I have shown a side view of the core in which the channel *c''* is shown between the port holes *c c*, the position in which it must be placed, and have also shown a cross groove, 2, of sufficient length so that the core may be turned sufficiently to open and close the port holes *c* without danger of cutting off the flow of gas from the channel *c'*.

With the valve shown and described in this application it is necessary to pass the channel *c''* through the shell B and place a long groove in the surface of the core, to a point back of the port holes *c c*, but in the form of valve shown in Fig. 10, and making

this principle of an independent channel to the pilot light, applicable to the valve covered in my application No. 341,795, filed November 2, 1906, it is simply necessary to pass the channel *c''* directly from the valve shell G' to the channel *c'*, as in Fig. 10, and I have found it as necessary in the one case as in the other.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent of the United States, is:—

1. In combination, a barrel, a tapering shell within the barrel and uniting with the barrel to form an annular chamber between them and having port holes through the shell to said chamber, a hollow tapering core within the shell and having port holes in position to register with the port holes in the shell, a head secured to the barrel, a spring within the head and acting upon the core, an inflow pipe and an outflow pipe connected with the barrel, a stem extending from the core and having a channel through it longitudinally, a lever on the stem with a channel arranged to register with the channel in the stem, and nuts and packing forming gas tight joints between the stem, the shell and the barrel.

2. In combination with a gas stove and a gas main, a valve set in the gas main and consisting of a barrel, a tapering shell within the barrel with a chamber between them, a core within the shell, said core and shell having port holes from the center of the core to the chamber, a head secured to the barrel forming a chamber in the end of the barrel, a spring in the barrel for actuating the core, a stem projecting from the core with a longitudinal channel through it, a lever at right angles with the stem and having a channel registering with the channel in the stem, a burner in the stove connected with the valve, a ring and fingers on the lever over the burner, and nuts forming gas tight joints between the stem, the shell and the barrel.

3. In combination, an annular barrel having a tapering inner surface, an annular shell within the barrel forming an annular chamber between the shell and the barrel, a core within the shell and hollow at one end, the shell and the core having registering port holes, a lever for actuating the core, a head secured to the barrel forming a chamber in the end of the barrel, a spring to actuate the core, and an inflow and an outflow pipe leading to and from the barrel.

4. In combination, a barrel, a tapering core within the barrel and forming a chamber in the end of the barrel, ports formed in the barrel and the core, an inflow pipe leading to the barrel, an outflow pipe leading from the barrel, a stem projecting from the core through the end of the barrel and having a channel through it, a cut off valve in the inflow pipe, a plug in said valve having a port hole through it and offset channels from



the port hole, and the cut off valve the barrel and the core having an independent channel leading from the shell of the cut off valve through the barrel and the core and communicating with the channel through the core and its stem.

5  
10 5. In combination, a valve having a barrel and a core formed with chambers and port holes leading through the barrel and the core, an intake pipe and an outflow pipe for the passage of gas through the chambers and ports, a cut off valve in the intake pipe, a stem extending from the core and having a

channel longitudinal of it, the cut off valve, the barrel and the core having an independent channel leading from the cut off valve through the walls of the barrel and the core and communicating with the channel in the core and its stem. 15

Signed at Grand Rapids Michigan June 20 25, 1907.

WALTER J. KENNEDY.

In presence of—

I. J. CILLEY,  
E. J. NOBLE.