

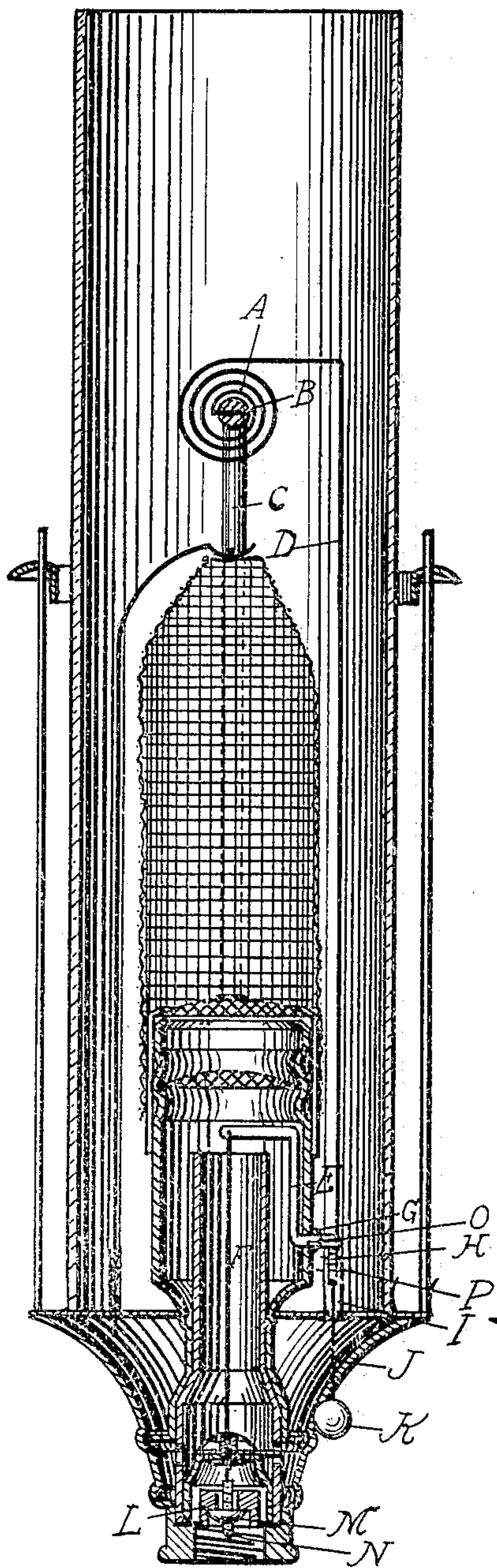
No. 787,976.

PATENTED APR. 25, 1905.

E. S. EDWARDS.
GAS BURNER.

APPLICATION FILED JUNE 1, 1903.

Fig. 1.



WITNESSES:

A. M. Edwards
Mellie A. Reed

Fig. 3.

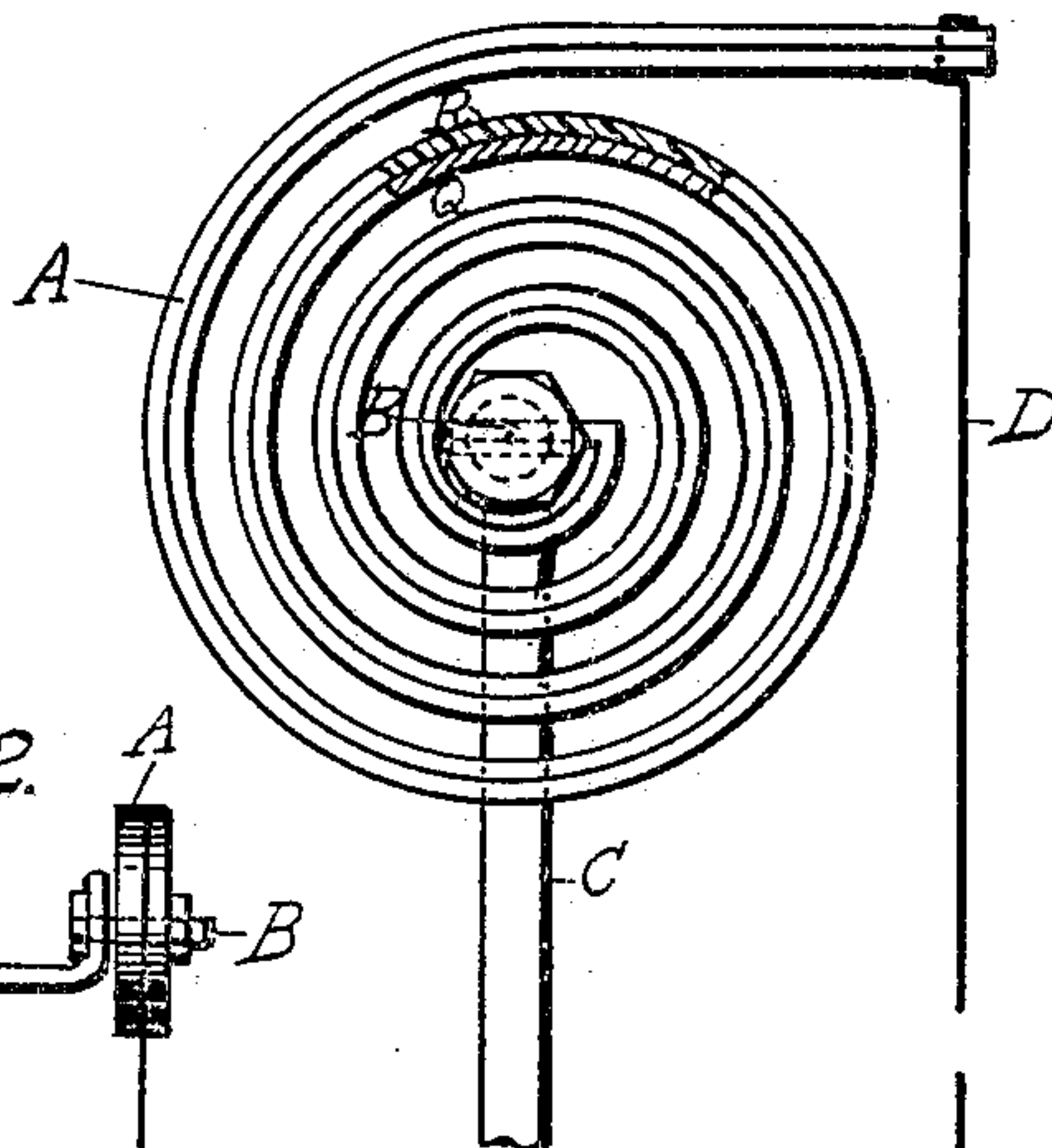


Fig. 2.

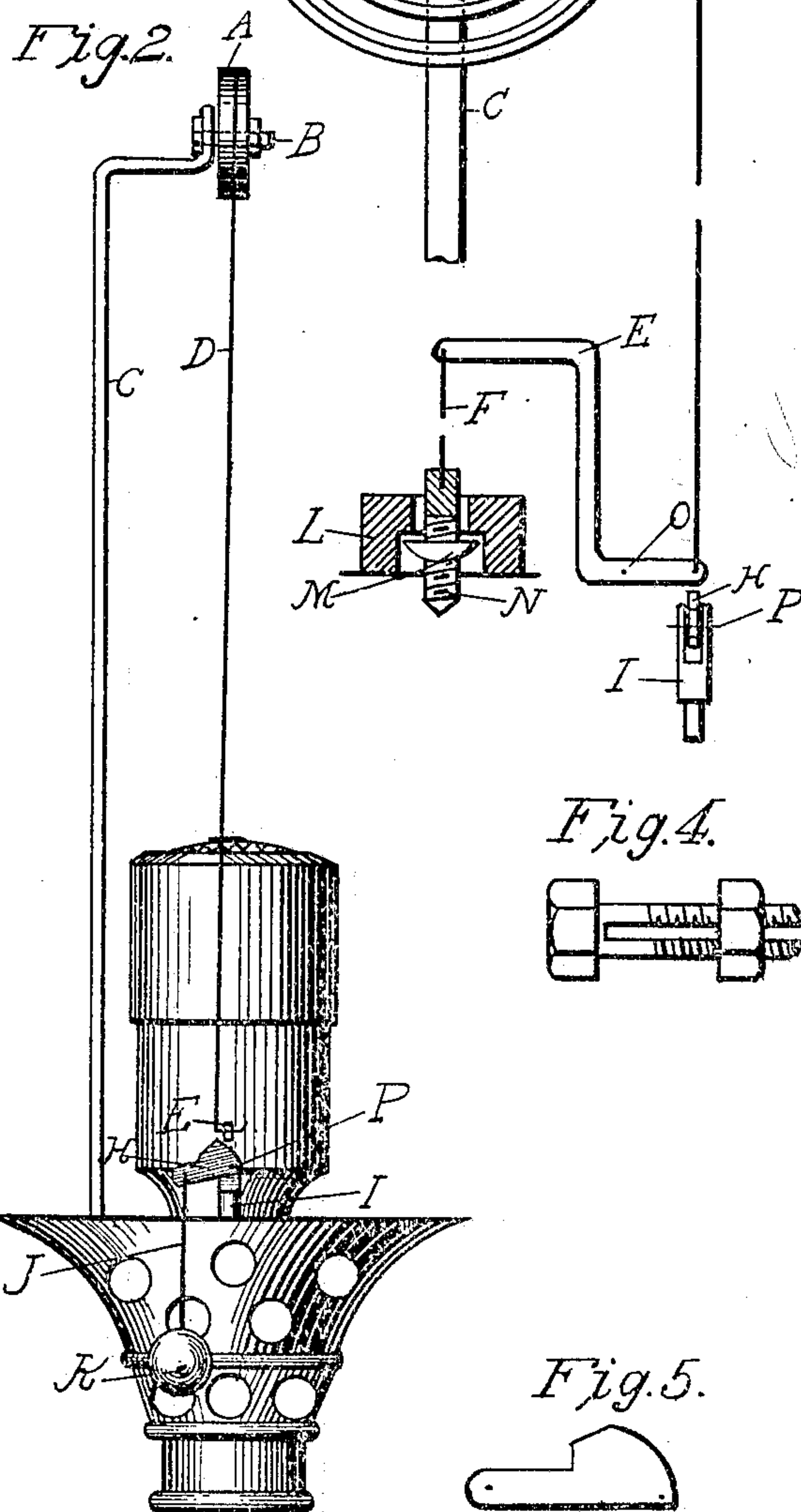


Fig. 4.

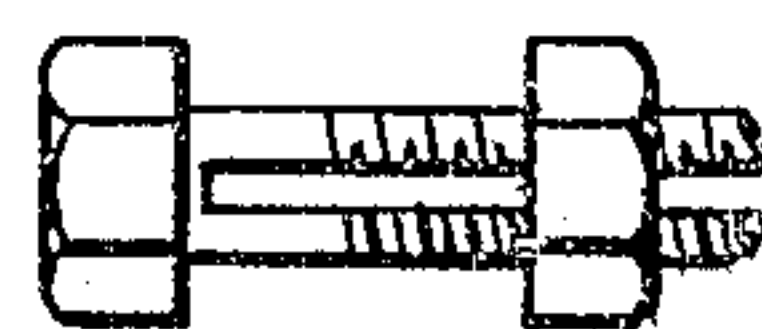
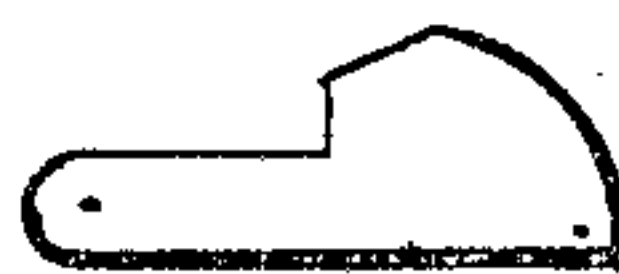


Fig. 5.



INVENTOR:

Overeth Starr Edwards

UNITED STATES PATENT OFFICE.

EVERETT STARR EDWARDS, OF OMAHA, NEBRASKA.

GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 787,976, dated April 25, 1905.

Application filed June 1, 1903. Serial No. 159,594.

To all whom it may concern:

Be it known that I, EVERETT STARR EDWARDS, a citizen of the United States, residing at Omaha, in the county of Douglas and State of Nebraska, have invented a new and useful Improvement in Gas-Burners, of which the following is a specification.

My invention relates to all types of gas-burners, including incandescent burners, open jets, Bunsen burners, and gas-stoves.

The object of my invention is to provide a means whereby the gas may be automatically turned off in case the flame is extinguished from any cause—such as a draft of air, a falling of pressure in the mains, or other cause—thus preventing the escape of gas. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section of a Welsbach lamp, showing my invention as applied to this type of lamp; Fig. 2, a side elevation of same with chimney, shade-holder, mantle, &c., removed; Fig. 3, a general view of my improvement separated from the lamp, showing construction of thermostat and valve in detail; Fig. 4, the bolt shown at B in the other figures, here enlarged and shown in detail; and Fig. 5, the catch H in detail.

Similar letters refer to similar parts throughout the several views.

A is a thermostat rigidly fastened at its center by means of the split bolt B, also Fig. 4, to a suitable support C and connected to the valve M through the wire D, the lever E, the wire F, and the adjustable valve-stem N, or any suitable system of rod or rods and levers, the system shown forming no part of my present invention. The lever E before mentioned is pivoted at O to the lug G, the before-mentioned connection between the thermostat A and the valve M being such that when the thermostat A becomes heated from the flame of the burner the valve M is lowered from its seat L, thus allowing gas to flow between L and M to the burner so long as the thermostat A remains hot, but closing the valve M and arresting the flow of gas as soon as the thermostat A is sufficiently cooled.

The wire F passes loosely through the gas-passage of the burner to avoid binding. The

gas which leaks around the wire F passes into the burner and is burned with the main supply. As the pressure in the mixing-chamber is only equal to or below the atmospheric pressure outside, there is no leakage of gas where the lever E goes through the side wall of the mixing-chamber.

The thermostat A may consist of any two metals of different expansibility at the same temperature and which are not fused below a red heat, the preferred construction being (see Fig. 3) a lamina of steel and one of brass brazed together with a composition that will stand a red heat without fusion, thus making a joint that will not give way at a red heat.

The composite strip is so coiled as to bring the brass inside the spiral. When heated, the brass expands faster than the steel, causing the thermostatic coil to partially unwind when heated and to wind up again when cooled to its original temperature. As the inside end of the coil is fastened rigidly to the support C, it is clear that the outer end must move when the temperature of the coil is varied. The support C consists of a rod screwed or riveted to the base of the burner and extending vertically upward along the inside of the chimney until above the mantle. It is here bent at right angles and extends directly over the top of the mantle. Over the center of the mantle it is again bent at right angles and formed into an eye, through which the split bolt B passes. The rod may be of any convenient shape of section, as round, oval, or square. The valve is held shut when the lamp is not in operation by the pressure of the contracted thermostat acting through the wire D, the lever E, and the wire F, the wire D being sufficiently stiff for this purpose.

As the valve and thermostat are positively connected by the rods and lever shown, it will be seen that the valve must remain closed when the thermostat is in its contracted position and open when it is in its expanded position. As the expansion can only take place by the action of heat, gas can only flow while the thermostat is heated unless the valve be positively opened by hand in opposition to the pressure exerted by the thermostat. When constructed of steel and brass, the ther-

mostat is sufficiently elastic to admit of being operated by hand through the medium of catch H.

5 The catch H, pivoted at the point P to a suitable support I and having at its free end the rod J and handle K, is so placed that when rotated slightly upward about the pivot P the wire D is forced upward by the eccentric surface of catch H, opening the valve M sufficiently to allow the gas to be lighted at the burner. The pressure of the thermostat A, through the wire D and lever E on the flattened upper surface of the catch H, holds the latter in its raised position. When the thermostat becomes heated from the flame of the gas, the wire D is pulled upward, opening the valve M to the full extent of its travel and relieving the pressure on the flattened surface of catch H, allowing the said catch H to resume its former position, thus allowing the valve M to be completely closed when the thermostat is cooled.

What I claim, and desire to secure by Letters Patent, is—

25 1. In combination with a gas-burner, a thermostatic coil, a support for the same, a rod connected to the end of said thermostat; a valve adjustable on its stem, a seat for said

valve, a second rod fastened to said valve-stem, means for connecting the said rods together so that the valve is held open when the thermostat is heated, and held shut when the thermostat is cooled; substantially as shown and described. 30

2. In combination with a gas-burner, a thermostat, a support for the same, a rod connected to the end of said thermostat; a valve adjustable on its stem, a seat for said valve, a second rod fastened to said valve-stem, means for connecting the said rods so that the valve is held open when the thermostat is heated, and held closed when the thermostat is cooled; a catch with a cam-like end, capable of being operated by hand, and arranged to open the said valve against the pressure of the said thermostat, means to return the said catch to its original position when the thermostat becomes heated, substantially as set forth. 40 45

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 50

EVERETT STARR EDWARDS.

Witnesses:

MELLIE A. REED,
JENNIE L. GARCELON.