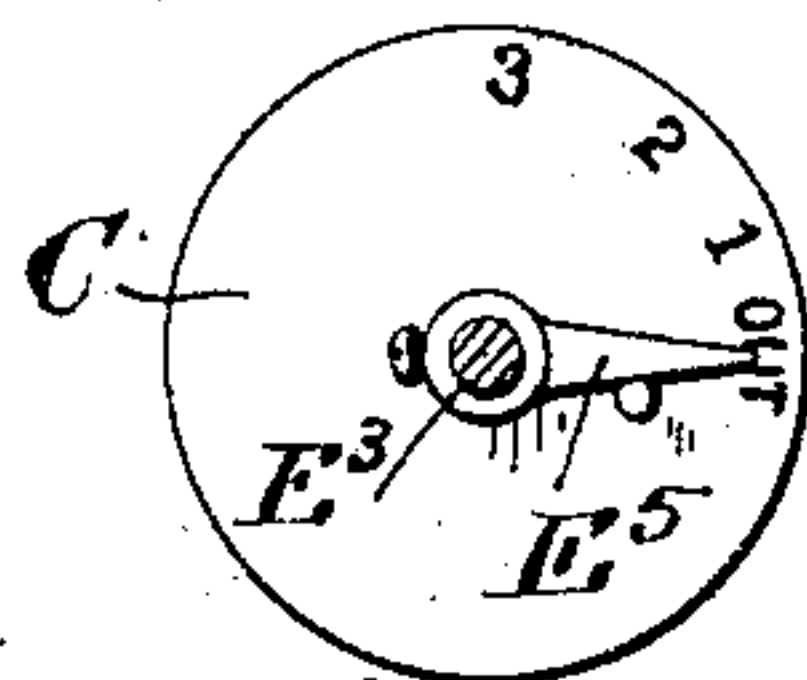
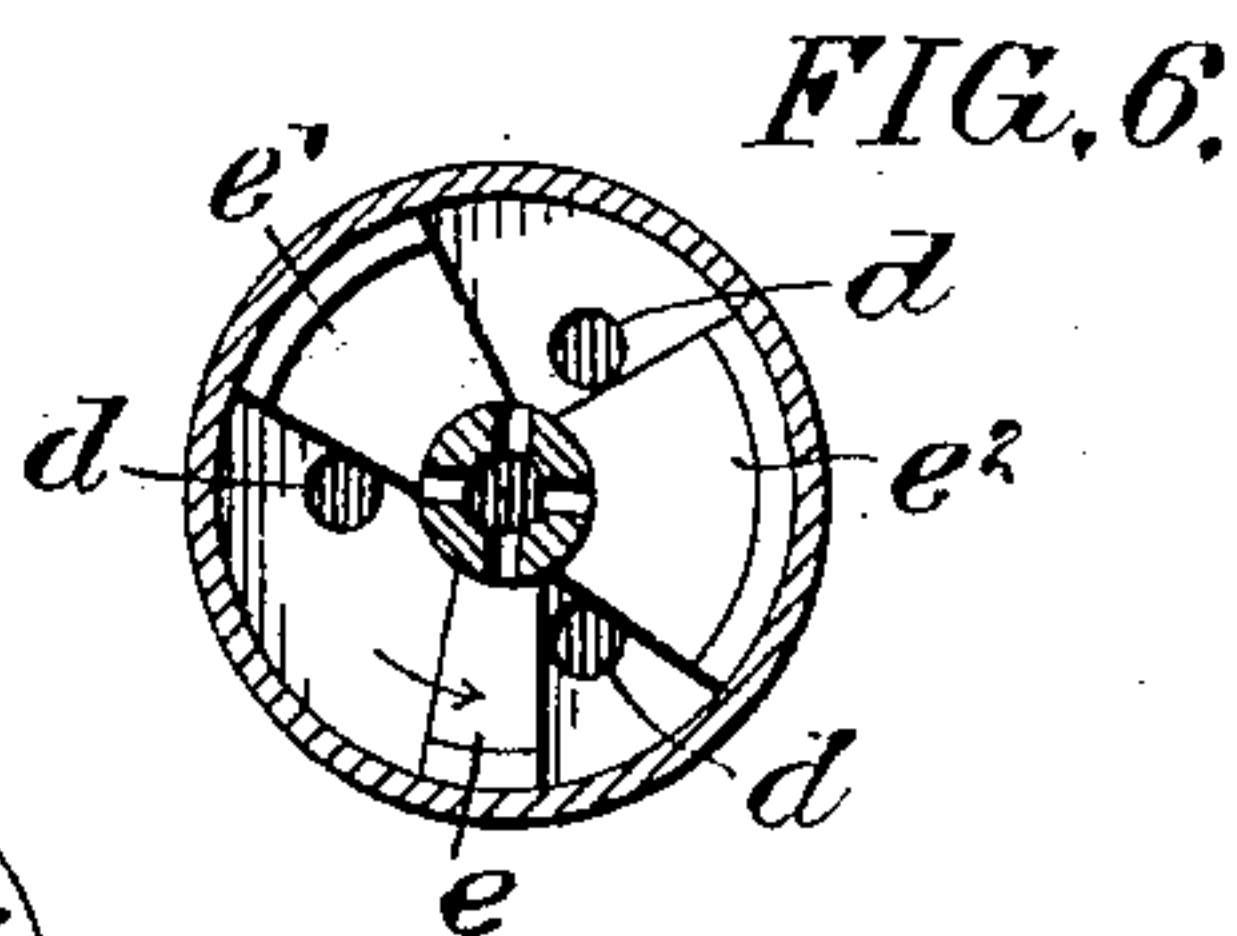
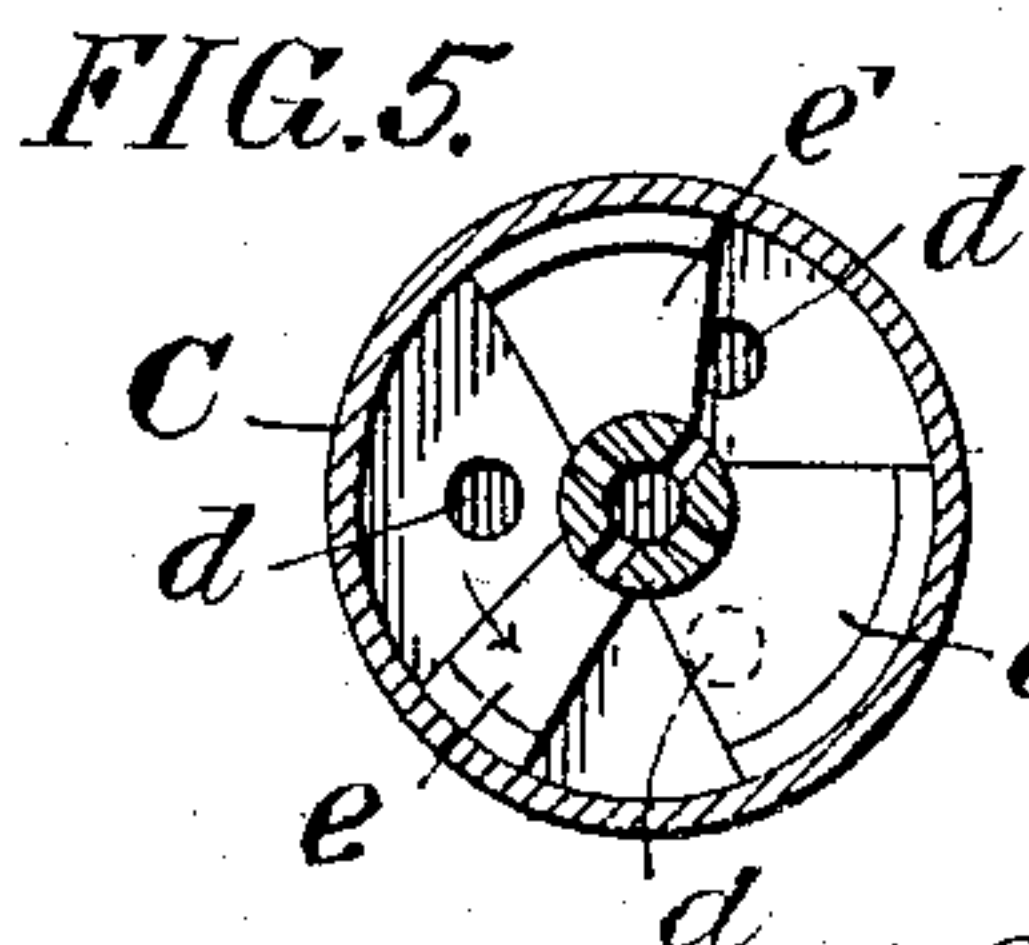
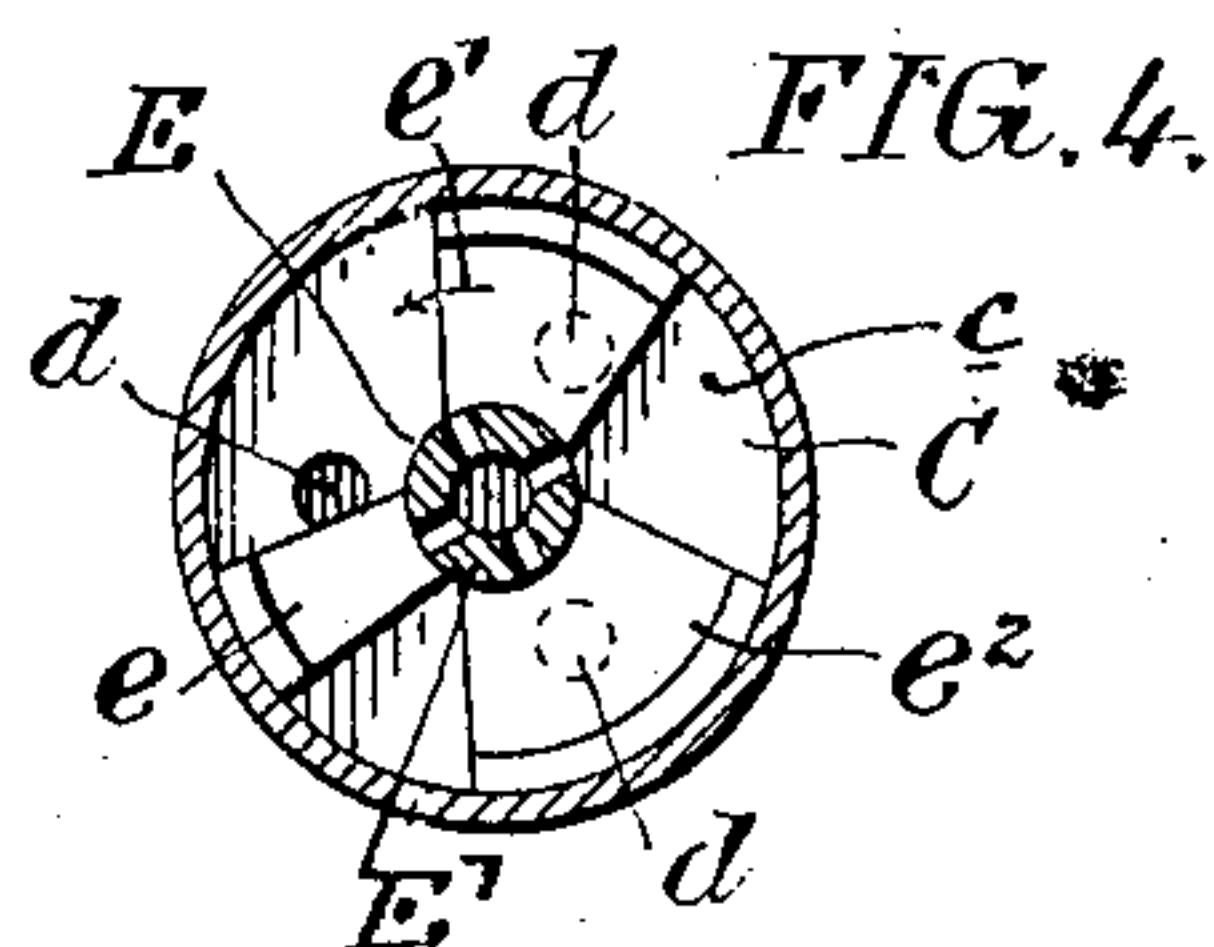
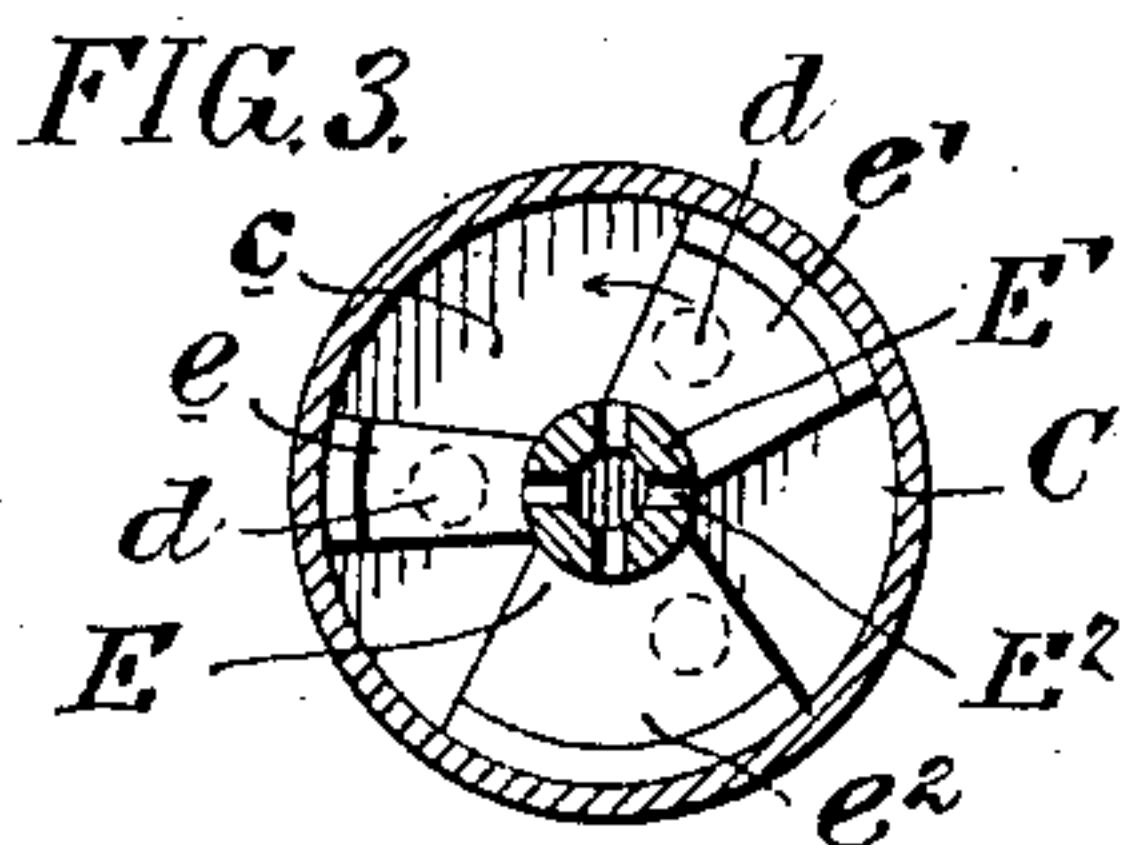
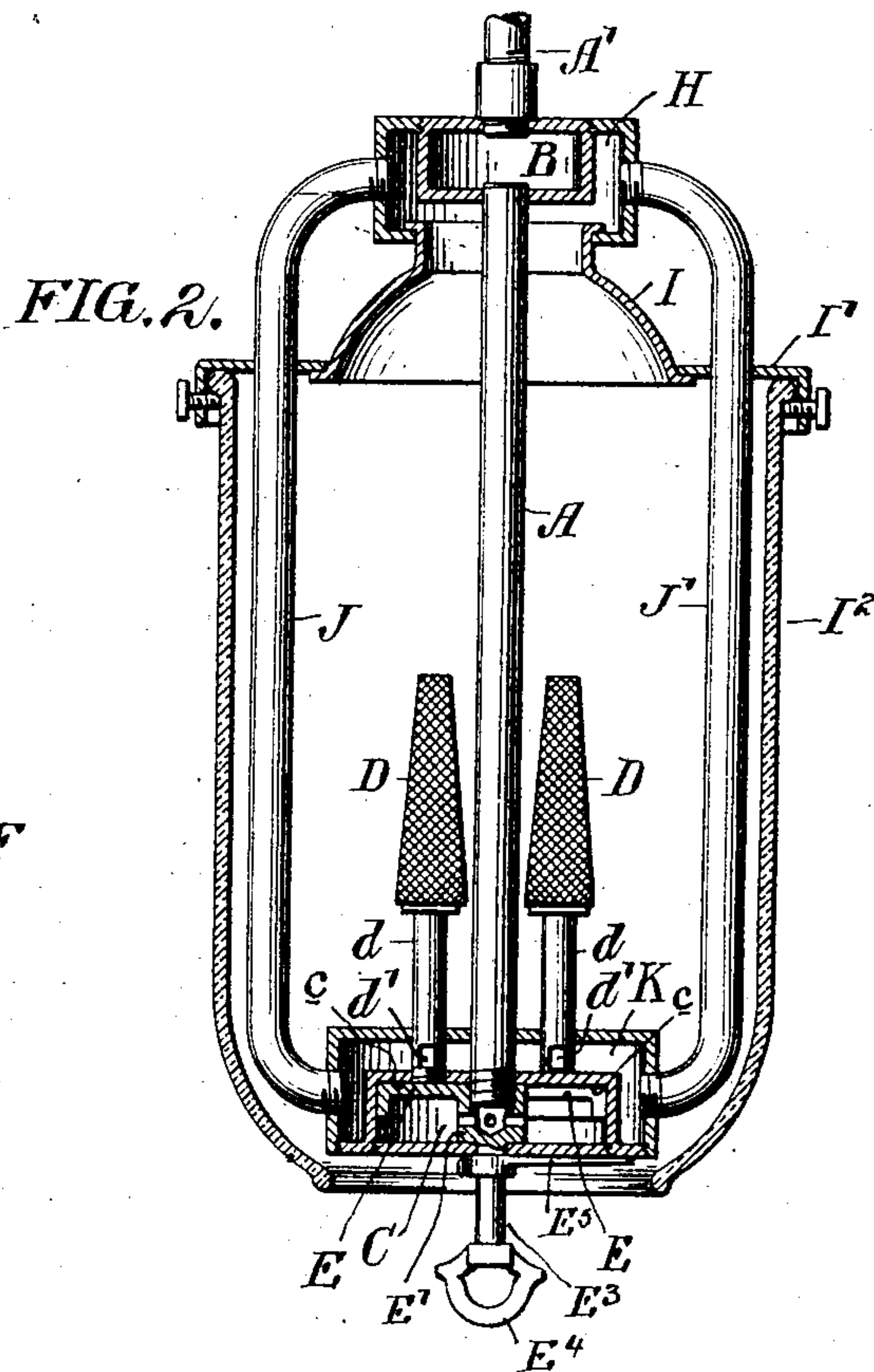
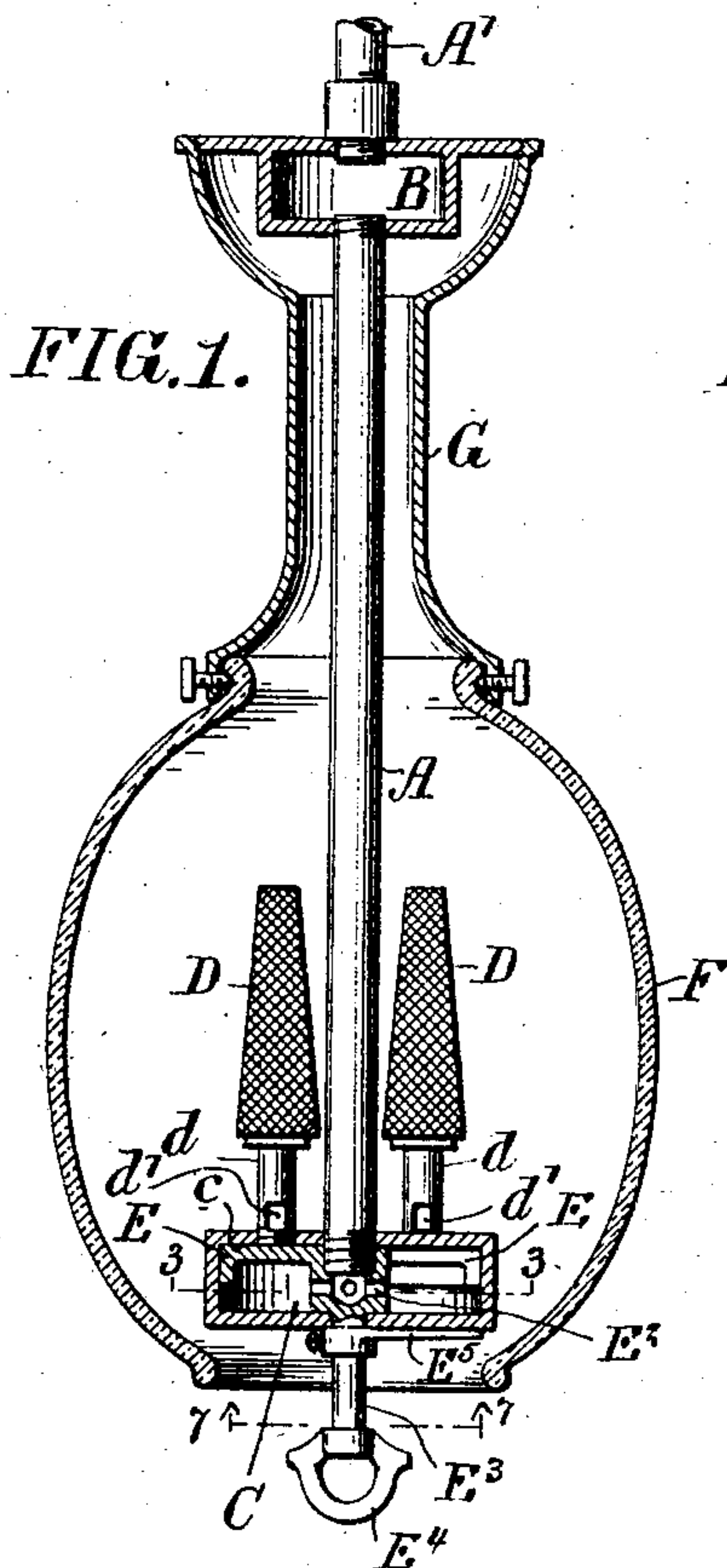


No. 771,387.

PATENTED OCT. 4, 1904.

W. S. McLEWEE.
REGENERATIVE GAS LAMP.
APPLICATION FILED OCT. 31, 1903.

NO MODEL.



Witnesses:

M. R. Cluland
J. P. Sawood

Inventor:

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UNITED STATES PATENT OFFICE.

WILLIAM STANLEY McLEWEE, OF YARDLEY, PENNSYLVANIA, ASSIGNOR
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JERSEY.

REGENERATIVE GAS-LAMP.

SPECIFICATION forming part of Letters Patent No. 771,387, dated October 4, 1904.

Application filed October 31, 1903. Serial No. 179,327. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM STANLEY McLEWEE, a citizen of the United States, residing at Yardley, in the county of Bucks and State of Pennsylvania, have invented certain new and useful Improvements in Regenerative Gas-Lamps, of which the following is a specification.

My invention relates to improvements in regenerative gas-lamps in which the gas is preheated by the hot products of combustion escaping from the flame and coming in contact with the preheating-chamber, through which the gas passes before it reaches the burner or burners.

The object of my invention is to construct a lamp in which the gas after it has been heated will be allowed to expand, so as to reduce the quantity of gas consumption and produce a light of better quality and brilliance than has heretofore been produced.

A further object of my invention is to provide a means of collecting and carrying the hot air from the upper portion of the lamp down to the lower portion, so that the hot air may be mixed with the gas after the gas has expanded and before it reaches the burner or burners.

A still further object of my invention is to construct a valve by which the supply of gas may be admitted to one, two, or more of the burners desired.

In the drawings, Figure 1 represents a vertical sectional view of a lamp, illustrating my invention. Fig. 2 represents a vertical sectional view of a lamp, illustrating additional features of my invention. Fig. 3 is an inverted sectional view as on line 3 3, Fig. 1. Figs. 4, 5, and 6 are views similar to Fig. 3, showing the parts in different positions; and Fig. 7 is an inverted sectional view as on line 7 7, Fig. 1.

Referring to Figs. 1 and 2, A represents the supply-pipe, having a portion A', which is connected with the source of supply. Between the portions A and A' of the supply-pipe is interposed the preheating-chamber B. At the lower end of the supply-pipe A is an expansion-chamber C, in which the super-

heated gas is allowed to expand before it passes to the burners D, consisting of incandescent mantles. Tubes *d* connect each burner with the expansion-chamber C. The said tubes *d* are provided with openings *d'*, through which the air is drawn into the tubes by the suction caused by the gas passing up through the tubes. A valve E is provided to control the supply of gas to the burners, which in this instance are three in number; but any desired number may be used. The valve E, as shown in Figs. 3, 4, 5, and 6, is provided with arms *e*, *e'*, and *e''*, which bind against the interior upper surface *c* of the expansion-chamber C. The arms when in the position shown in Fig. 3 cover all the tubes *d*, which connect with the expansion-chamber C. To admit the gas to one burner, the valve is turned in the direction of the arrow to the position shown in Fig. 4, where one of the tubes *d* is open for the admission of gas. As the arm *e'* is wider than the arm *e* and the arm *e''* is wider than the arm *e'*, the remaining tubes *d* will still be closed. When the valve is turned to the position shown in Fig. 5, two of the tubes *d* are open, and when the valve is turned to the position shown in Fig. 6 all the tubes are open. The arms of the valve are carried by a central hub E', which fits over the end of the supply-pipe A. The gas from the supply-pipe A passes through the openings E² in the hub E' to the expansion-chamber. A stem E³ is connected to the valve E, and a handle E⁴ upon the stem E³ is provided to operate the valve. E⁵ is a pointer secured to the stem E³ and registers with marks or indications upon the under side of the expansion-chamber to show the position of the valve.

In Fig. 1, F represents the globe, and G represents the casing which surrounds the supply-pipe A and the preheating-chamber B. Said casing is arranged to direct the hot air from the burners around the supply-pipe and the preheating-chamber to heat the gas before it reaches the expansion-chamber C. After the gas has been expanded and leaves the expansion-chamber C it is mixed with the air from the lower part of the globe F, which is admitted through the openings *d'* in the

tubes d . Fig. 2 illustrates means of collecting the hot air from the top of the lamp and of carrying it down to the openings in the tubes d , so that air and gas of about the same temperature may be mixed together to produce the desired results at the burners.

As shown in Fig. 2, a collecting-chamber H is placed at the top of the lamp and surrounds the preheating-chamber B. The hot air from the burners is directed to the collecting-chamber by means of the dome-shaped casing I, and the disk I' and the globe I², carried by said disk. Air-pipes J and J' are connected to the collecting-chamber H and to a distributing-chamber K, located below the burners. The distributing-chamber surrounds the expansion-chamber C and also the openings d' in the lower portion of the tubes d . Air is thus admitted to said tubes d direct from the distributing-chamber K. The hot air is mixed in the tubes d with the gas from the expansion-chamber C and carried through the tubes to the burners.

Having thus described my invention, I claim and desire to secure by Letters Patent--

1. The combination of burners, an expansion-chamber, a distributing-chamber surrounding said expansion-chamber, tubes connecting the said burners with said expansion-chamber, said tubes being provided with openings to admit air from said distributing-chamber, a supply-pipe, and means of admitting air to said distributing-chamber, substantially as described.

2. The combination of burners, an expansion-chamber, a supply-pipe, a preheating-chamber, a collecting-chamber surrounding said preheating-chamber, a distributing-chamber surrounding said expansion-chamber, air-pipes connecting said collecting-chamber and said distributing-chamber and tubes connecting said burners with said expansion and distributing chambers, substantially as described.

3. The combination of burners, an expansion-chamber, tubes connecting said burners with said expansion-chamber, a supply-pipe, a valve consisting of arms corresponding in number to the burners, so that the supply of gas may be admitted to one, two or three of the burners as desired, substantially as described.

4. The combination of burners, an expansion-chamber, tubes connecting said burners with said expansion-chamber, a supply-pipe, a valve consisting of arms corresponding in number to the burners, so that the supply of gas may be admitted to one, two or three of the burners, a valve-stem, a pointer on said stem, and indications on the outside of said expansion-chamber to show the position of said valve, substantially as described.

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

WILLIAM STANLEY McLEWEE.

Witnesses:

E. D. PATTERSON,
M. R. CLEELAND.