

M. LEES.  
GAS GOVERNOR.  
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952,822.

Patented Mar. 22, 1910.

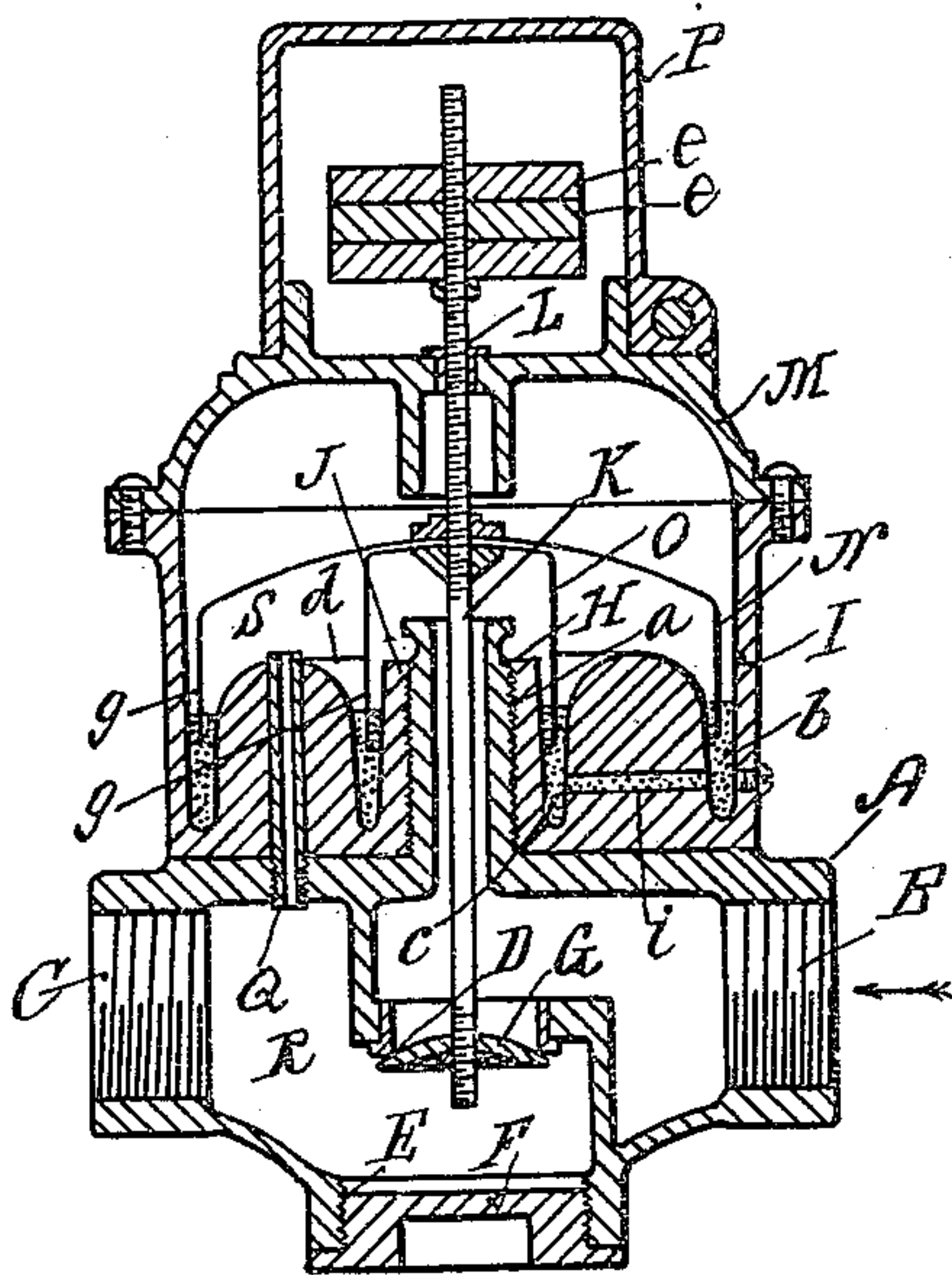


FIG. 1.

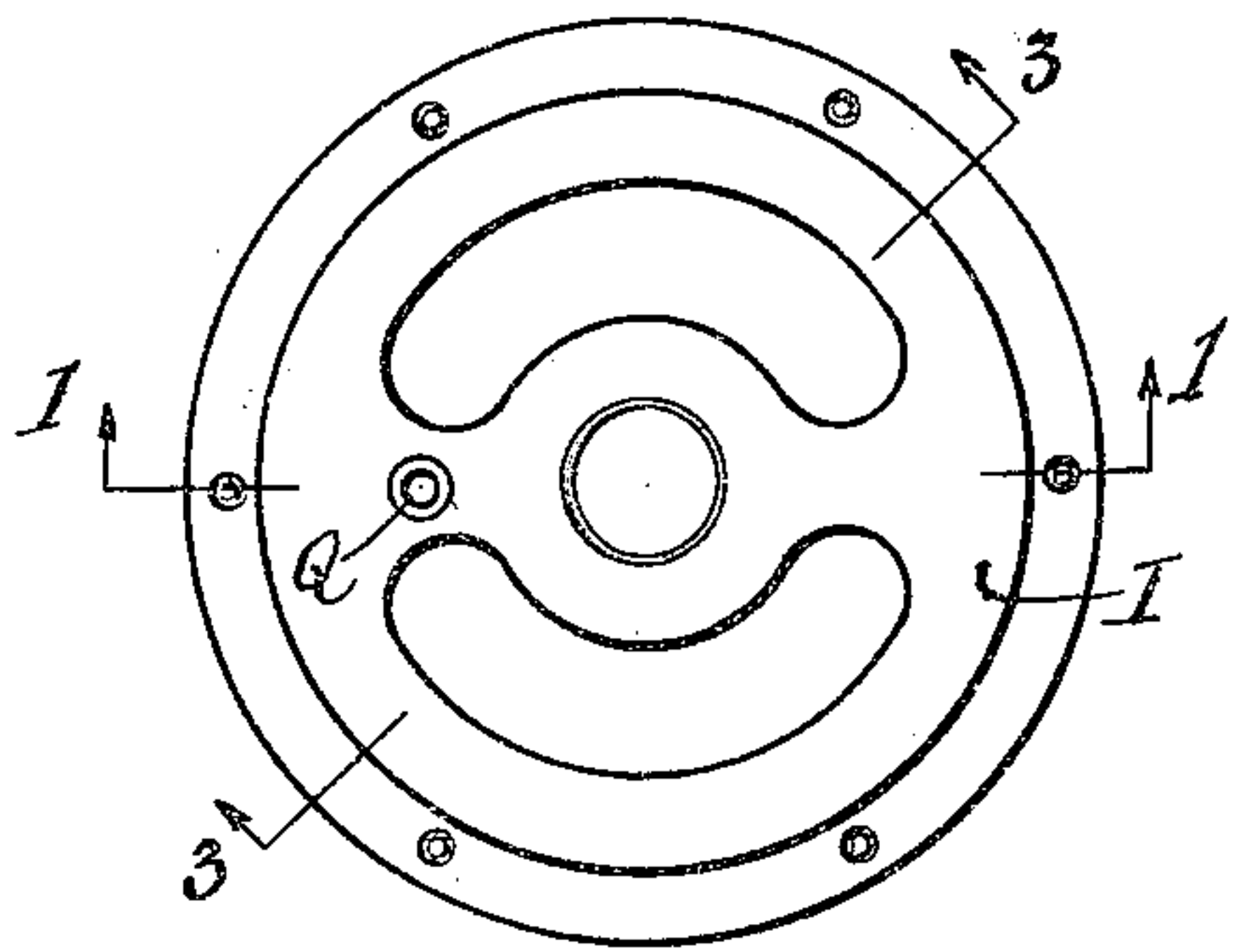


FIG. 2.

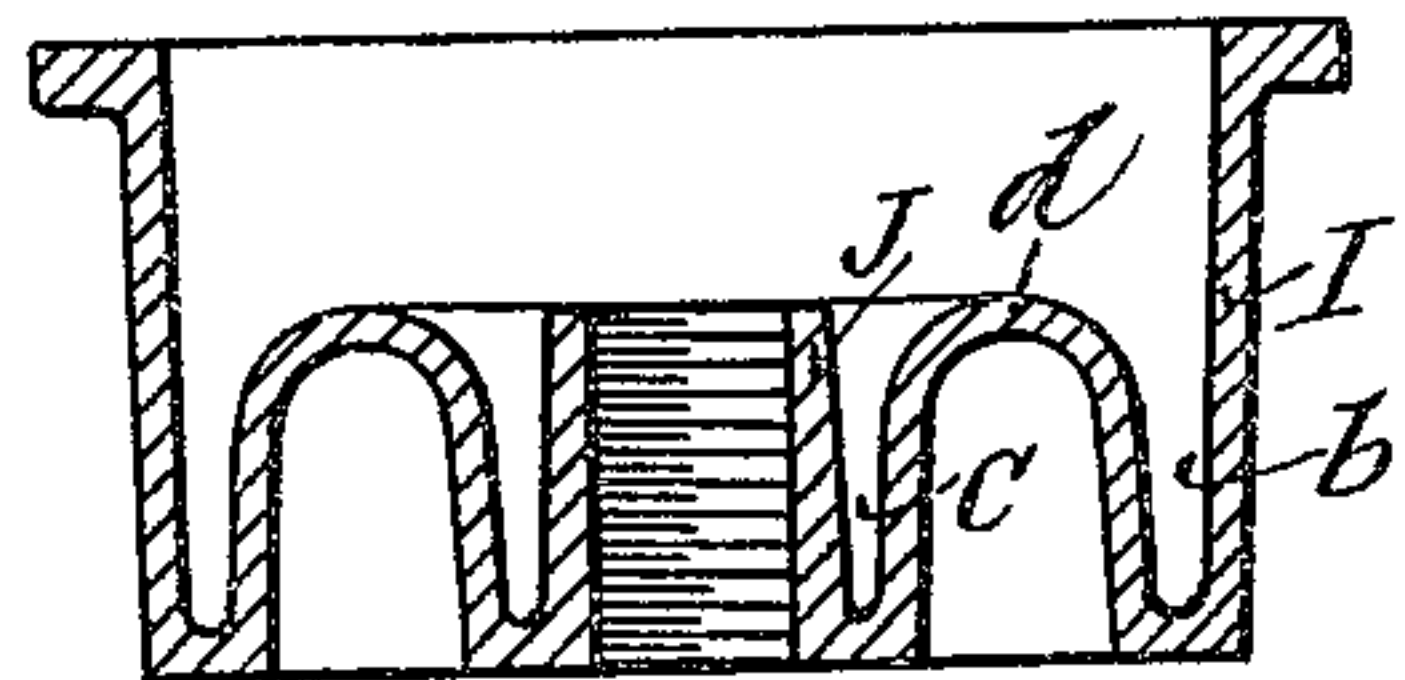


FIG. 3.

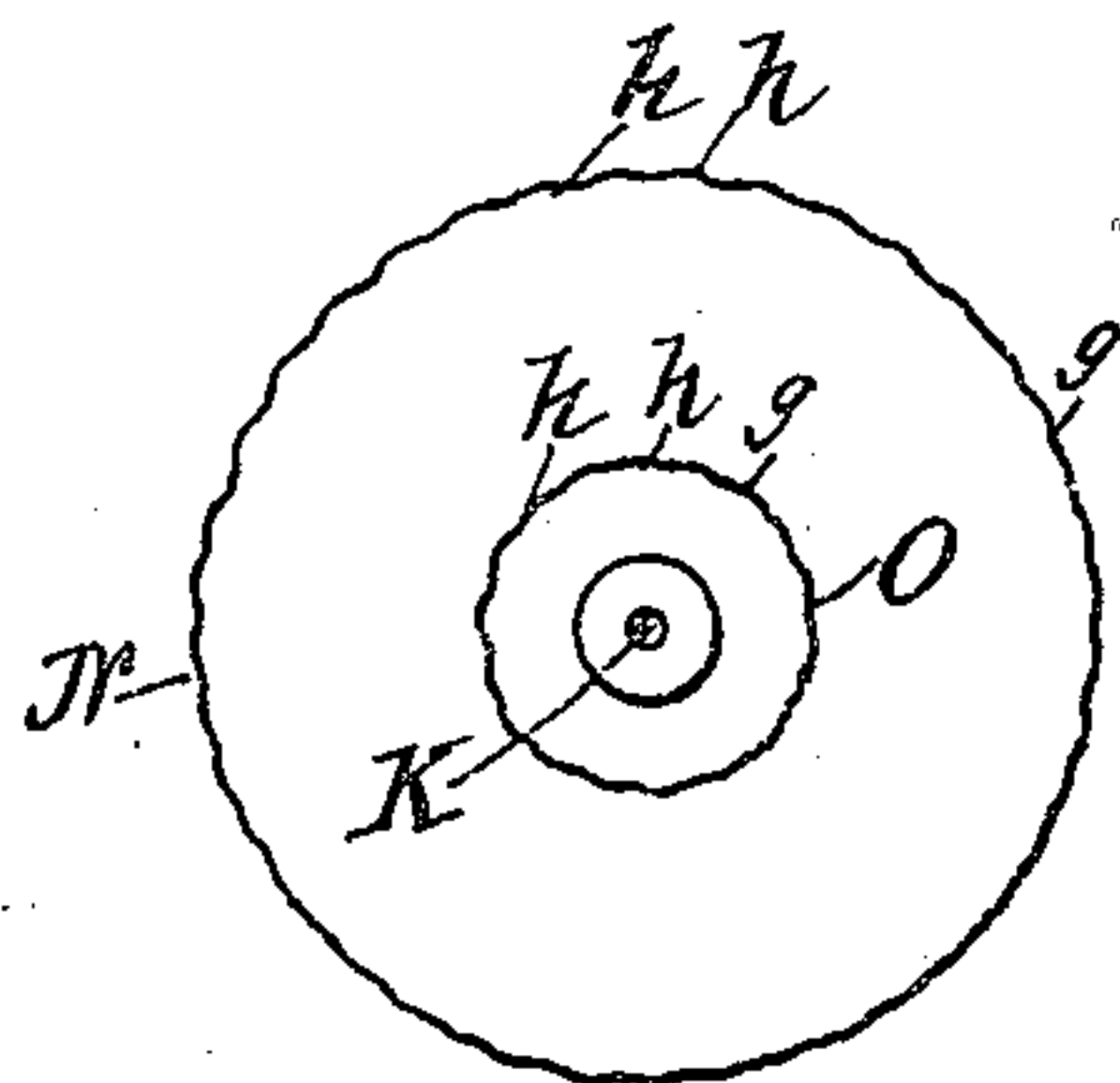


FIG. 4.

WITNESSES

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# UNITED STATES PATENT OFFICE.

MILES LEES, OF PROVIDENCE, RHODE ISLAND.

GAS-GOVERNOR.

952,822.

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Application filed June 1, 1908. Serial No. 436,130.

*To all whom it may concern:*

Be it known that I, MILES LEES, a subject of the King of Great Britain, residing at Providence, in the State of Rhode Island, have invented a new and useful Improvement in Gas-Governors, of which the following is a specification.

The nature of my invention consists in the employment of a mercury holder provided with inner and outer grooves and an annular dome between the said grooves, whereby whenever in case of backward pressure due to an accidental explosion of gas, the mercury is forced out of one of the grooves into the other, over the said annular dome, there will be no recesses for its reception and retention, and the mercury in full quantity will rearrange itself in the grooves to operate the floats as before.

It also consists in the improved construction whereby the chamber containing the mercury may be readily removed from the base of the governor and another substituted therefor, so that the working capacity of the governor may be thus increased or diminished whenever it is so desired in setting up the governor where it is to be used.

In the accompanying drawing: Figure 1 represents an axial section of a gas governor embodying my improvement taken as in the line 1, 1, in Fig. 2. Fig. 2 represents an under view of the mercury holder. Fig. 3 represents a section taken in the line 3, 3, of Fig. 2. Fig. 4 represents an under view of the floats by means of which the regulating valve is operated.

In the drawing, A represents the pipe-connecting base of the governor, having the inlet opening B, and the outlet opening C, the said base being also provided with the valve seat D. The base A is furthermore, provided with an opening E, closed by means of a removable plug F, whereby access may be had to the valve G and valve seat D, whenever required. The base A is also provided at its upper side with a tubular stem H, provided exteriorly with the screw-thread *a*. The mercury holder I, is provided with the annular outer groove *b* and the concentric inner groove *c* with the annular dome or partition *d* between them and with the upwardly extending hub J, which fits the screw threaded stem H of the base. The grooves *b* and *c* are provided with a connecting passage *i*, whereby the

mercury will be maintained at the same height in both the inner and outer grooves. The valve G is provided with the stem K which at its upper portion passes loosely through the guide opening L made in the covering dome M, and is provided at its upper end with the weights *e, e*, by means of which the operating pressure of the valve G is adjusted. The valve stem K is also provided with the attached outer float N, and the inner float O, the said floats being caused at their edges to enter the mercury in the said outer and inner grooves *b* and *c* of the mercury holder I.

In the operation of the governor, the edges of the floats N and O will be continuously held below the surface *f* of the mercury. The upper end of the valve stem is inclosed by means of the removable cap P, so that ready access may be had to the said valve stem for the purpose of adapting the weights *e, e*, to the pressure required. The inner surface of the mercury holder I is preferably coated with enamel whereby all possible leakage of mercury will be prevented and when the said mercury holder has been screwed tightly to its seat upon the base A then the insertion of the screw threaded tube Q which forms the gas connection between the chamber R at the outlet side of the valve and the annular chamber S, of the outer float will serve to prevent the unauthorized removal of the mercury holder I, from the base A.

The peripheral portions *g* of the floats N and O, are provided with the axially directed corrugations *h h* as shown in Fig. 4, whereby the floats will obtain a steadier hold upon the mercury; and I prefer to provide these floats with a coat of enamel thus preventing any possibility of the leakage of gas.

Heretofore in all gas governors in which outer and inner grooves for holding the mercury were employed, some opening or recess has been left in the mercury holder into which—upon the occurrence of an explosion whereby a back pressure of gas is caused—the mercury might be thrown from the grooves in a sufficient quantity to impair the subsequent action of the float in closing the valve, thereby causing an injurious leakage of gas, but by means of my improved closed dome construction of the annular partition *d*, and the upward extension of the upright hollow stem H above the level of the said partition within the chamber of the inner



float O, the accidental disarrangement and leakage of the mercury will be prevented.

I claim as my invention:

1. In a gas governor, the combination of  
5 the base provided with the inlet and outlet  
openings, and the intermediate valve, with a  
removable mercury holder provided with the  
inner and outer annular grooves for holding  
the mercury, the annular dome partition be-  
10 tween the said grooves, a passage for the  
mercury through the said partition, and the  
outer and inner floats connected with the  
valve, the one acted upon by the gas at the  
outlet and the other by the gas at the inlet  
15 side of the valve.

2. In a gas governor, the combination of a  
base provided with an upright hollow stem,  
the mercury holder held upon the said stem  
and provided with the inner and outer annu-  
20 lar grooves for the mercury, the annular  
partition between the said grooves, a passage  
for the mercury through the said partition,  
and the screw threaded tube extending from  
the outlet side of the governor base into the  
25 said annular partition for the passage of gas  
therethrough.

3. In a gas governor, the combination of  
the base provided with the upright hollow  
stem, the mercury holder held upon the said  
30 stem and provided with inner and outer an-  
nular grooves for the mercury, and a pas-  
sage for the gas from the outlet side of the  
governor base to the annular chamber of  
the outer float, passing upward through the

annular partition between the inner and 35  
outer grooves of the mercury holder.

4. In a gas governor the combination of a  
mercury holder provided with the inner and  
outer annular grooves separated from each  
other by an annular dome partition which is 40  
formed without recesses or openings adapted  
to catch and retain the mercury, the inner  
and outer valve-actuating floats, the base  
provided with the inlet and outlet openings  
and the intermediate valve, with means ex- 45  
tending upward within the chamber of the  
inner float, above the level of the top of the  
annular dome partition, whereby the acci-  
dental escape and loss of mercury from the  
annular grooves, both inwardly and out- 50  
wardly will be prevented.

5. In a gas governor, the combination of  
the base provided with the upright hollow  
stem, the mercury holder held upon the said  
stem and provided with the inner and outer 55  
annular grooves for the mercury, the annu-  
lar dome partition between the said grooves,  
a passage for the mercury from one of the  
said annular grooves to the other through  
the said partition, and the inner and outer 60  
valve-actuating floats which are both pro-  
vided with axially directed peripheral cor-  
rugations.

MILES LEES.

Witnesses:

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