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PATENTED FEB. 5, 1907.

G. E. WITT.
PUMP GOVERNOR.

APPLICATION FILED FEB. 23, 1906.

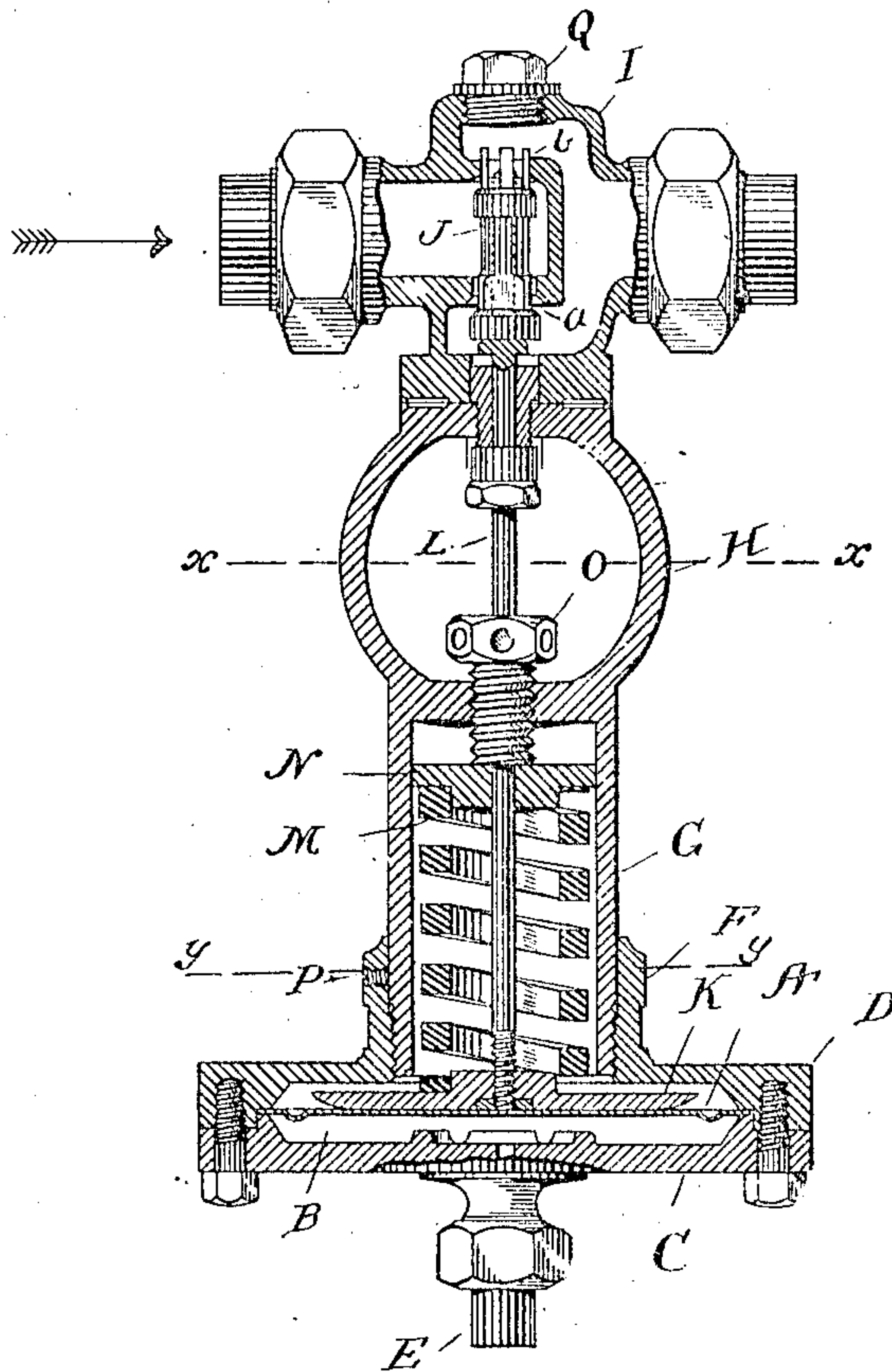


Fig. 1

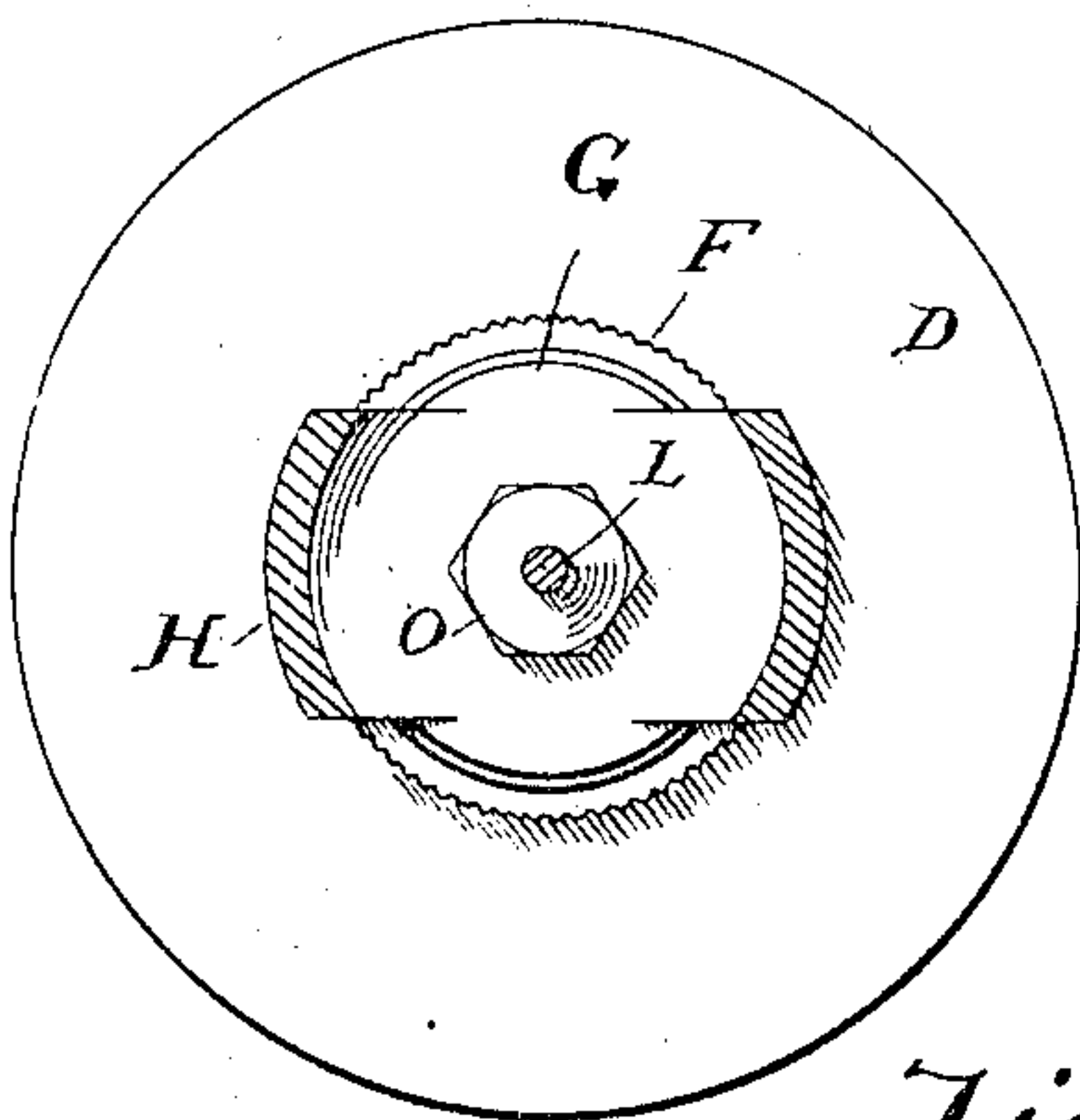


Fig. 2

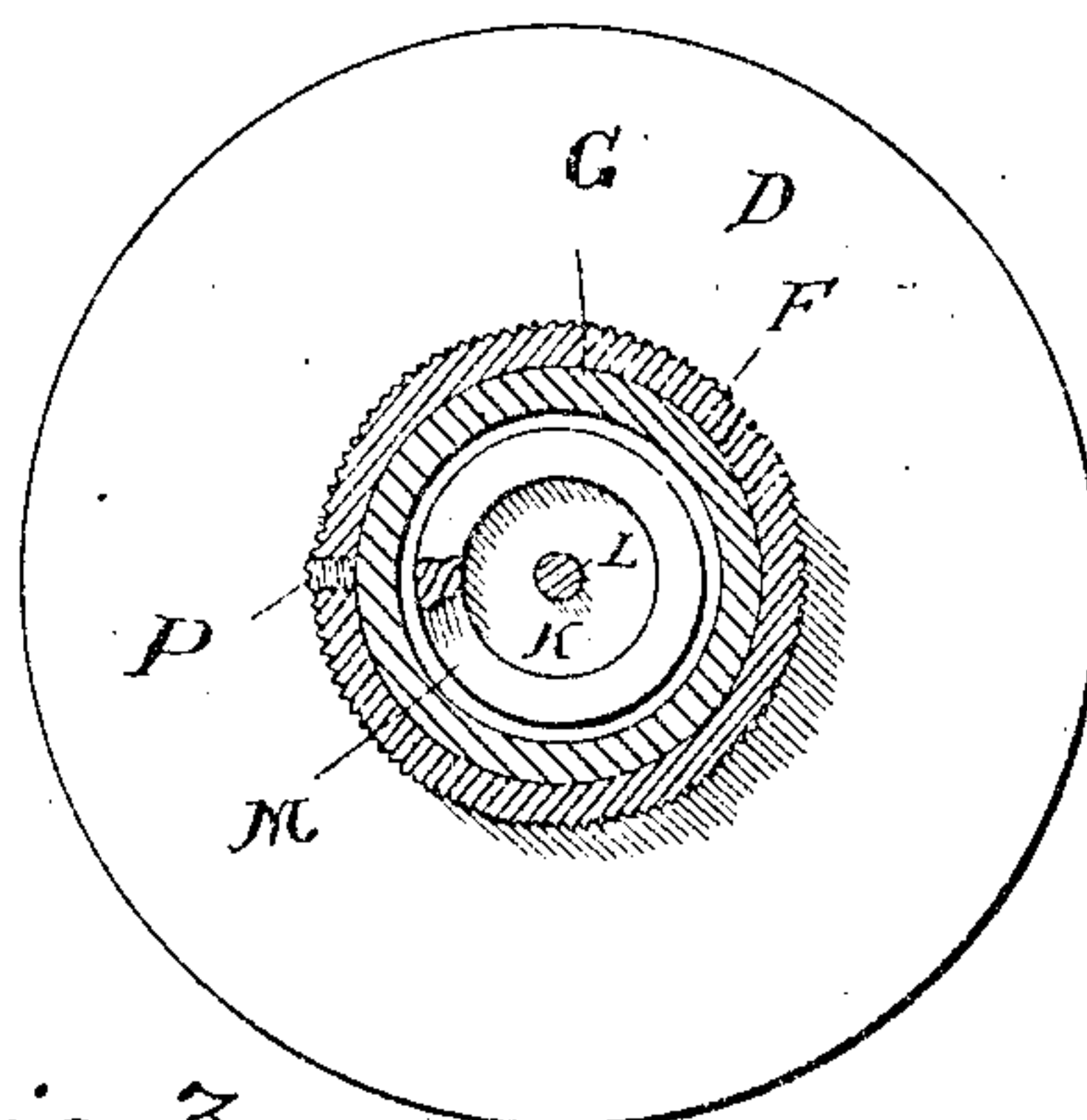


Fig. 3

WITNESSES:

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GEORGE E. WITT, OF SAN FRANCISCO, CALIFORNIA.

PUMP-GOVERNOR.

No. 843,382.

Specification of Letters Patent.

Patented Feb. 5, 1907.

Application filed February 23, 1906. Serial No. 302,635.

To all whom it may concern:

Be it known that I, GEORGE E. WITT, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Pump-Governors; and I do hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same.

Briefly stated, I term my present invention a "pump-governor;" but to be more explicit it is a device whereby the pressure from a pumping apparatus is retained at a predetermined fixed point. This predetermined point can be fixed at will, and the operation of the device in relation to the pressure from the pump and the motive power thereof is automatic.

The various parts are so arranged as to be readily assembled, not liable to derangement, and positive and automatic in their action, and a uniform delivery-pressure is insured.

The device possesses all the requisites of strength and durability and is especially simple in construction and efficient in operation.

My invention more particularly resides in the novel combination, construction, and arrangement of parts, all as more particularly described, and set forth in the appended claims.

I am enabled to accomplish the objects of my invention by the means illustrated in the accompanying drawings, in which—

Figure 1 is a central vertical section and partial elevation of the complete device. Fig. 2 is a transverse section on the line *xx* of Fig. 1. Fig. 3 is a similar view on the line *yy* of Fig. 1.

Referring now to the above views by letter, A represents a metal diaphragm securely held across the chamber B, formed by the two members C and D, the former member being connected to the delivery-pressure of the pump by means of the pipe E, while the latter is formed with the central threaded hub F. Engaging with the threads of the hub F is the cylindrical neck G, the upper extremity of which terminates in the yoke H. To the upper end of the yoke H is secured the housing I, which contains the grindable balance-valve J, *a* and *b* indicating the two ports.

Bearing against the diaphragm A and within the chamber B is the disk K, which is connected to the valve J by means of the stem L.

Encircling the stem L and within the neck G is the spiral spring M, one end of which bears against the disk K, while its opposite end engages with the cap N, the latter being set against the adjustable screw-plug O. The valve J is swivelly connected to the stem L.

Now from the description so far gone into it will be readily seen that as the delivery-pressure from the pump is brought to bear on the under side of the diaphragm A the spring M will be correspondingly compressed and the valve J respond therewith and regulate the steam to the pump. The direction of the steam is indicated by means of the arrow in Fig. 1. Now should it be desired to regulate the device so that the valve J would respond to a higher delivery-pressure the screw-plug O is set up and the spring M compressed. On the other hand, by easing up on the plug O the pressure of the spring will be reduced and the valve consequently respond to a lower delivery-pressure. Should it be desired to regulate the valve-stem so that the disk K and diaphragm A are in the desired relative positions, all that is necessary is to loosen the small set-screw P and adjust the members C and D by turning either to the right hand or to the left hand. Tightening the set-screw P will hold the parts in the adjusted position. Access to the valve J can be had by removing the plug Q.

It will be readily seen from the foregoing description that I have provided a very simple device by the use of which a uniform delivery-pressure is automatically maintained regardless of the variation in the steam-pressure, and the many advantages of this possibility will be apparent to those familiar with the operation of pumps generally.

I have described the best form of construction now used by me; still it will be understood that I intend to cover mechanical equivalents when such are substituted.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent, is—

1. A device of the character described comprising a casing having a chamber with a diaphragm extending across it, means connecting the chamber at one side of said diaphragm with the pressure-delivery of a pump, an extension of said casing having an upper portion enlarged to form a yoke said extension being adjustably fitted to the casing, a compression-spring in said extension and exerting a pressure upon the diaphragm in op-

position to the pressure-delivery of the pump, a screw accessible through said yoke for adjusting the tension of said spring, a valve-stem, a plate bearing against the diaphragm and having the valve-stem fixed to it, said stem being slidable through the spring and adjusting-screw, a casing fitted to the yoke end of the extension having a steam-passage through it, and a valve carried by said stem and controlling said steam-passage.

2. In a device of the character described, the combination of a divided casing forming an internal chamber and a diaphragm between the parts of said casing and dividing said chamber, said diaphragm having a valve-stem fixed to it, one of the parts of the casing having a projecting hub, a tubular extension of the casing adjustably fitted thereto and means for locking said extension in its adjusted position, a casing having steam inlet and outlet passages and connecting-ports, a valve carried by the stem and controlling said ports, a spring in the tubular extension and acting upon the diaphragm in opposition to the pressure-delivery of the pump, and means for adjusting the tension of the spring.

3. In a device of the character described,

the combination of a two-part casing inclosing a chamber, one of said parts connecting with the pressure-delivery of a pump and the other part having a central threaded hub, a diaphragm extending across said chamber and dividing the same, a cylindrical neck having one end adjustably fitted to said hub and the opposite end provided with an open yoke, a spring within said neck between the yoke and diaphragm and acting upon the latter, a valve-stem and a member carried thereby and bearing upon the diaphragm said stem extending through the neck and yoke, a casing fixed to the yoke and having a steam-passage, a valve carried by said stem and controlling said steam-passage, a cap within the neck and seating upon the spring, and an adjusting-screw bearing upon the cap and accessible through the open yoke whereby the tension of the spring may be adjusted.

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

GEORGE E. WITT.

Witnesses:

C. O. DANGBERG,
M. O. CONNOR.