

No. 698,863.

Patented Apr. 29, 1902.

O. SCHMID & H. A. DRANDT.
VALVE GEAR.

(Application filed June 1, 1901.)

(No Model.)

Fig. 1.

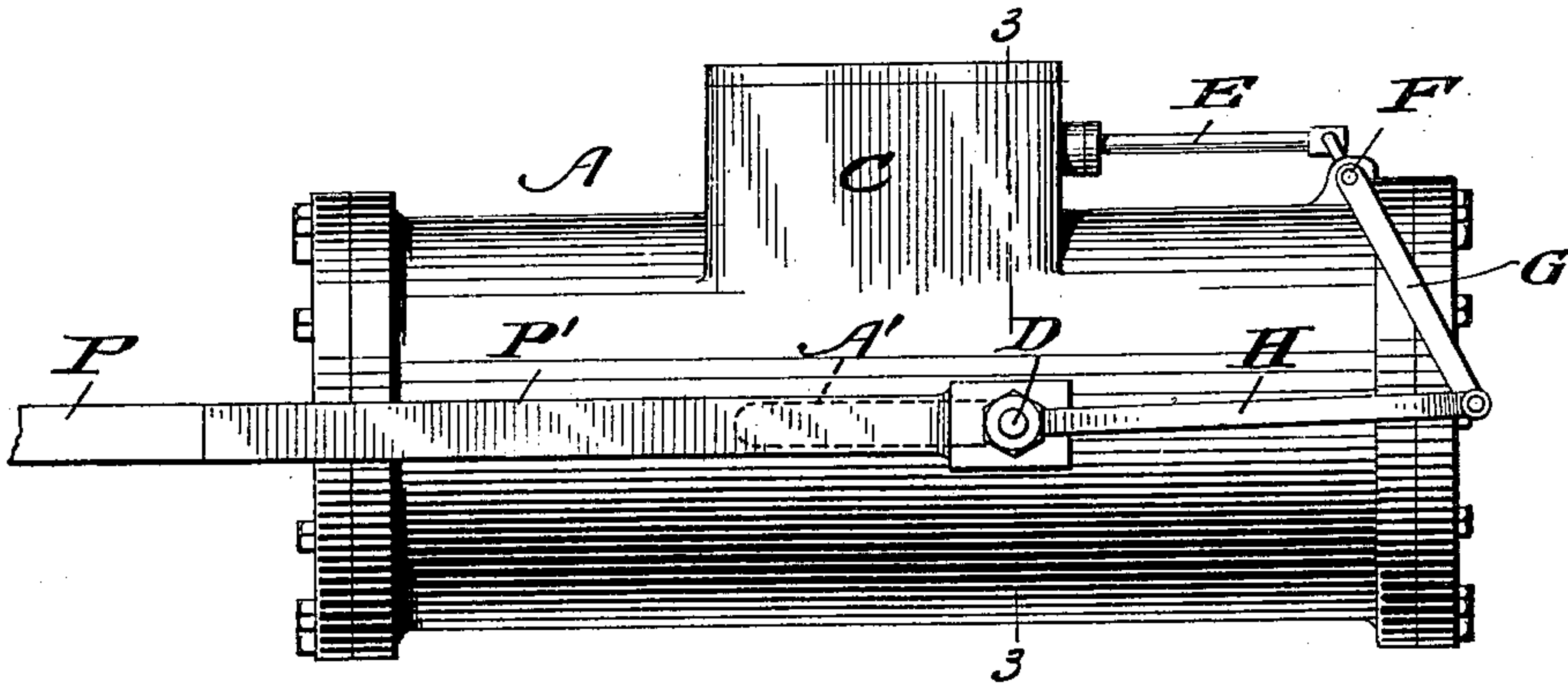


Fig. 2.

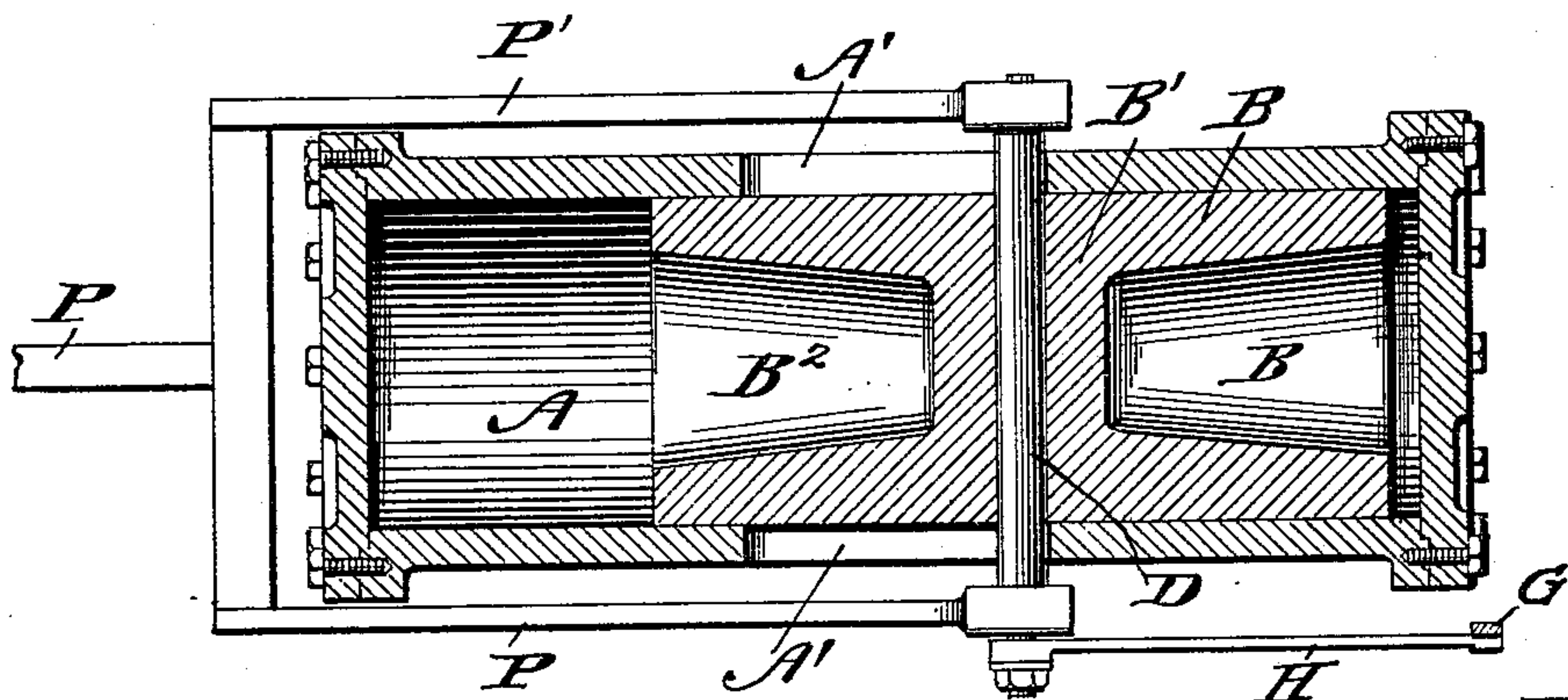


Fig. 3.

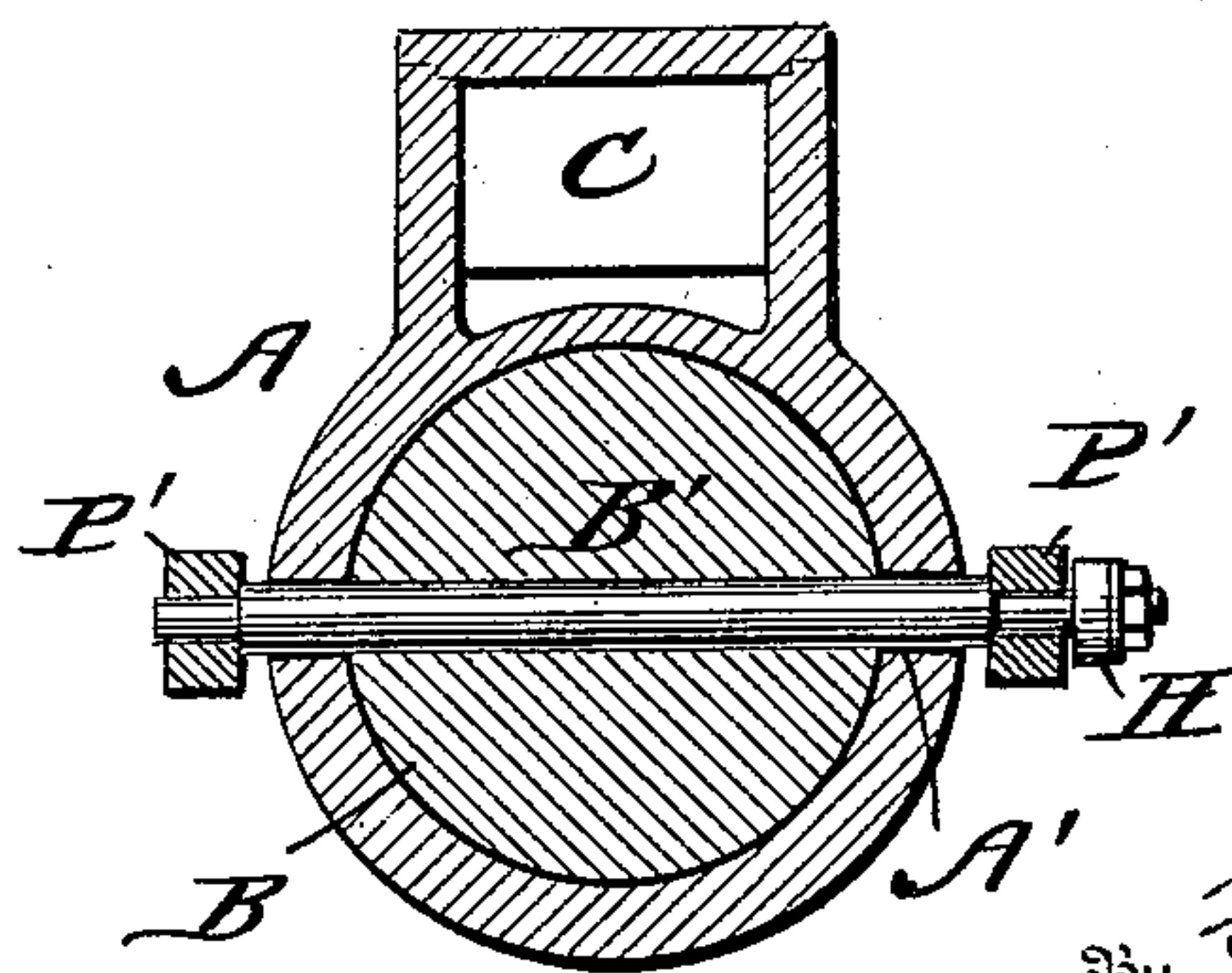
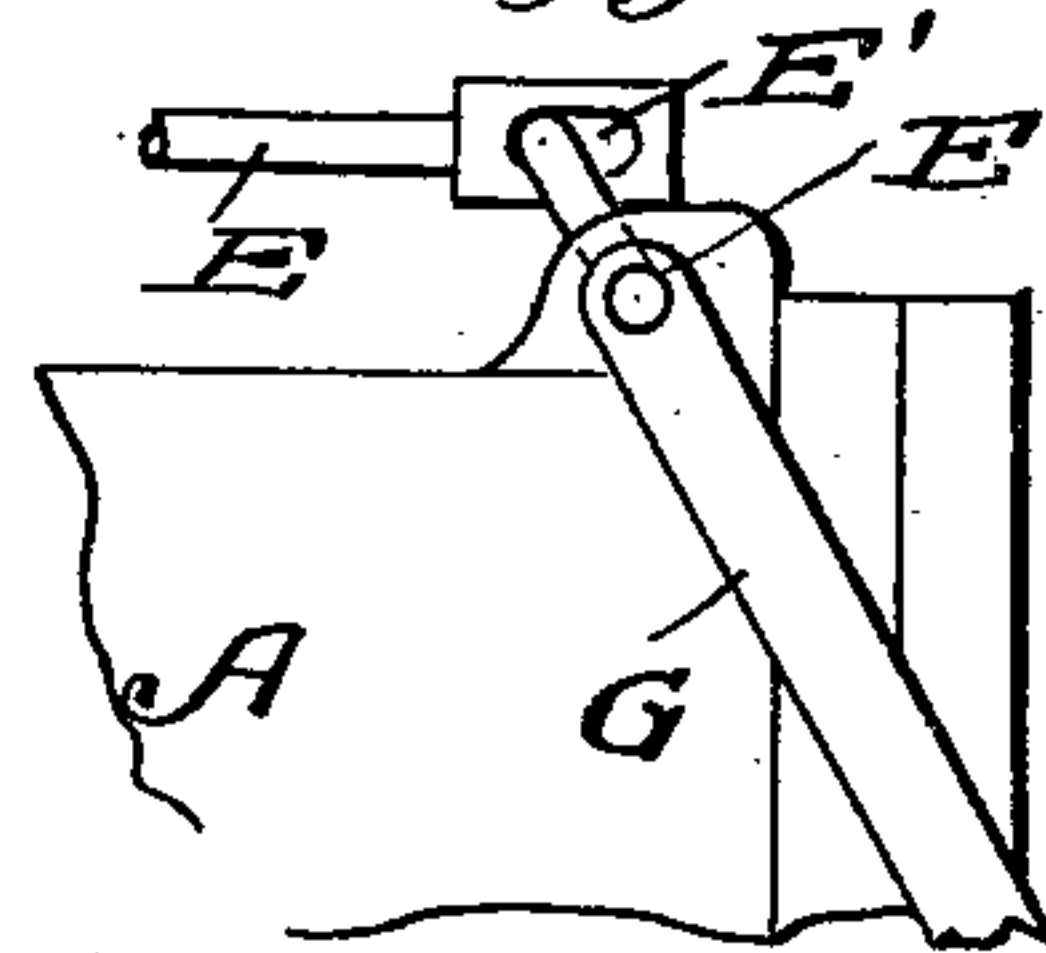


Fig. 4.



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UNITED STATES PATENT OFFICE.

OSCAR SCHMID AND HOWARD A. DRANDT, OF COLUMBUS, OHIO.

VALVE-GEAR.

SPECIFICATION forming part of Letters Patent No. 698,863, dated April 29, 1902.

Application filed June 1, 1901. Serial No. 62,757. (No model.)

To all whom it may concern:

Be it known that we, OSCAR SCHMID and HOWARD A. DRANDT, citizens of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented a new and useful Valve-Gear, of which the following is a specification.

This invention is an improved construction of valve-gear, the object being to provide a simple and efficient construction for the operation of the solid valve of a steam-engine and avoid the use of the eccentrics now in use.

With these objects in view the invention consists, essentially, in the employment of a double hollow piston the central portion of which is solid and operatively connected with the valve for the purpose of shifting or reversing the said valve upon the reciprocation of the piston.

The invention consists also in certain details of arrangement and novelties of combination, all of which will be fully described hereinafter and pointed out in the claims.

In the drawings forming part of this specification, Figure 1 is a side view of a cylinder and steam-chest, showing the practical application of our invention. Fig. 2 is a horizontal sectional view, and Fig. 3 is a transverse vertical section on the line 3 3 of Fig. 1. Fig. 4 is an enlarged detail view.

In carrying out our invention we employ a cylinder A, in which is arranged a piston B, said piston having a solid central core B' and is made hollow at each end, as shown at B².

C indicates the steam-chest, and the ports to and from the cylinder are substantially the same as those now employed, and illustration thereof is therefore unnecessary.

A transverse rod or bar D passes directly through the solid portion of the piston and works in slots A', produced in the side of the cylinder, and the piston-rod P is coupled to the said transverse rod or bar by means of a yoke P.

E represents the valve-stem, which is loosely connected by means of a slot E' to a rock-shaft F, mounted upon the top of the cylinder and operated by means of an arm G, which

is connected to one end of the rod or bar D by means of a pitman H, so that as the piston is reciprocated the valve-stem E will be operated through the medium of the pitman H, arm G, and rock-shaft F, thereby shifting the valve at each reciprocation of the piston.

It will thus be seen that we provide an exceedingly simple and efficient construction of valve-gear which will entirely avoid the use of eccentrics now in use.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination with the steam-cylinder, of a piston working therein, said piston being hollow at each end and solid at the center, a rod passed transversely through the piston and working through the sides of the cylinder, said rod or bar being operatively connected to the valve-stem, substantially as shown and described.

2. In a valve-gear, the combination with the cylinder and steam-chest, of the piston hollow at each end and solid at the center, the rod or bar passing through the solid portion of the piston and working in slots produced in the sides of the cylinder, the rock-shaft, pitman and operating arm for connecting the transverse rod or bar with the valve-stem, substantially as shown and described.

3. The combination with the cylinder slotted longitudinally, of the piston hollow at each end and solid at the center, the transverse rod or bar passing through the solid portion of the piston and working in the slots of the cylinder, the piston-rod connected to the ends of the said transverse bar or rod by means of a yoke, the valve-stem, rock-shaft, arm and pitman, said arm being connected to the end of the transverse rod or bar whereby as the piston is reciprocated the valve is operated, substantially as described.

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Witnesses:

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