

(No Model.)

J. ANDERSON.  
VALVE FOR POWER MOTORS.

No. 572,396.

Patented Dec. 1, 1896.

Fig. 1.

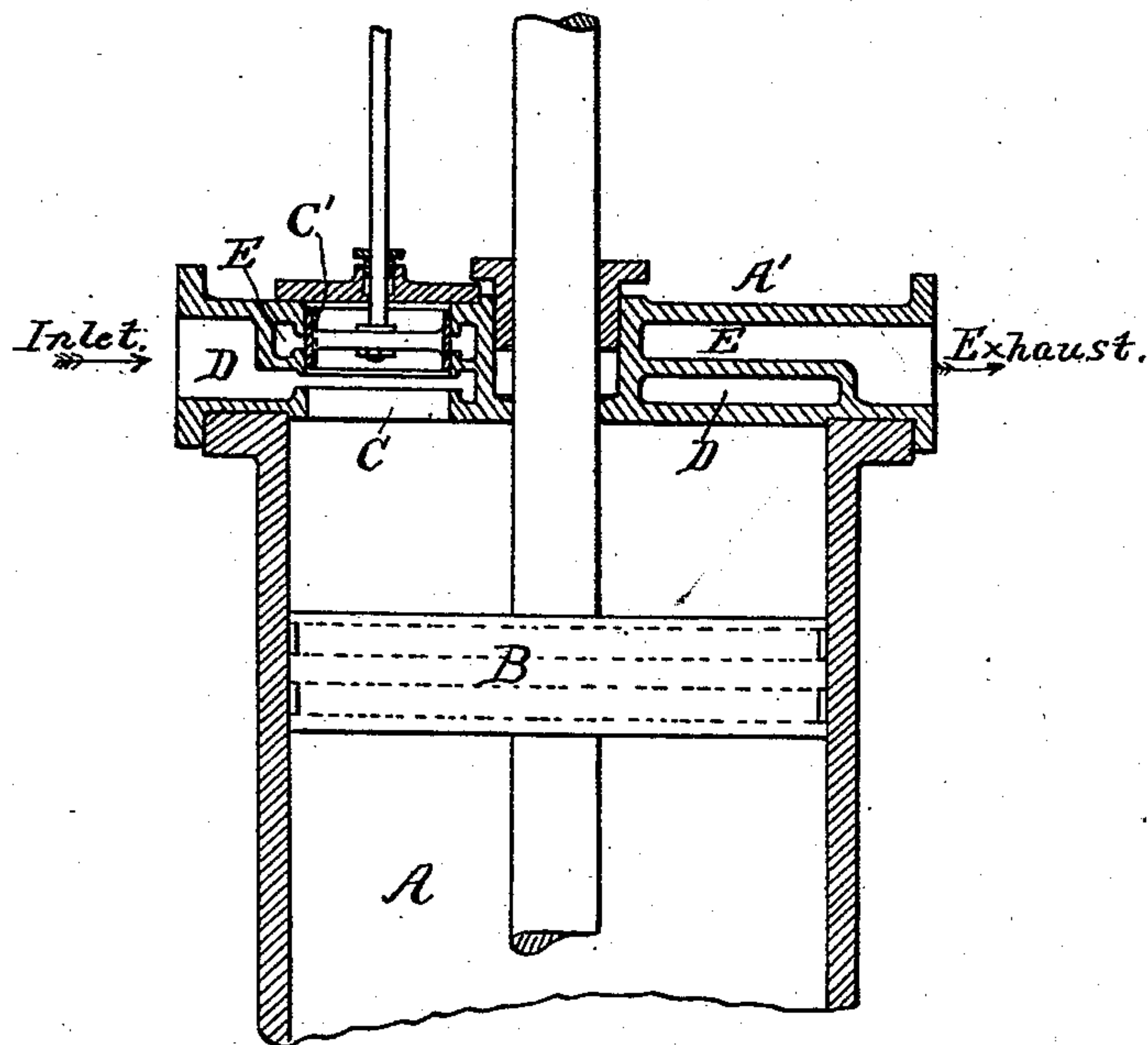


Fig. 2.

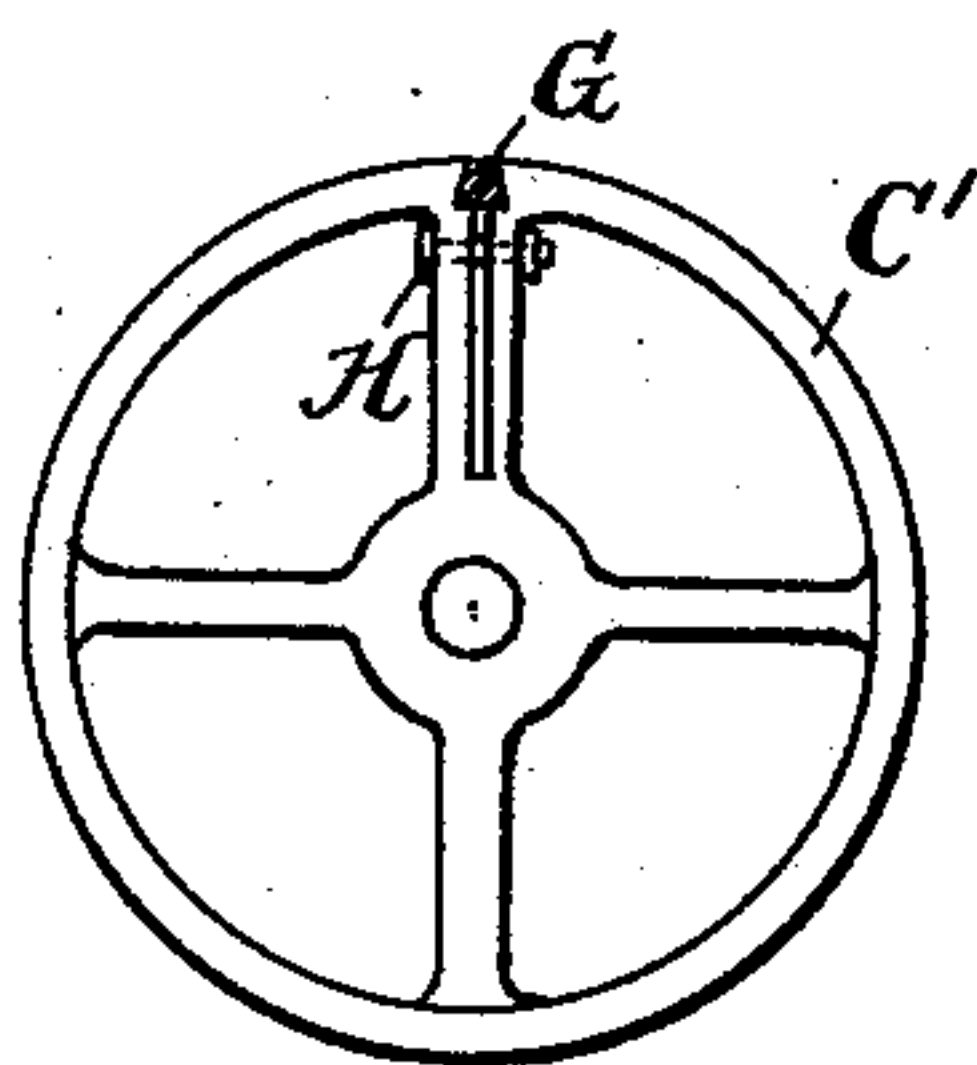
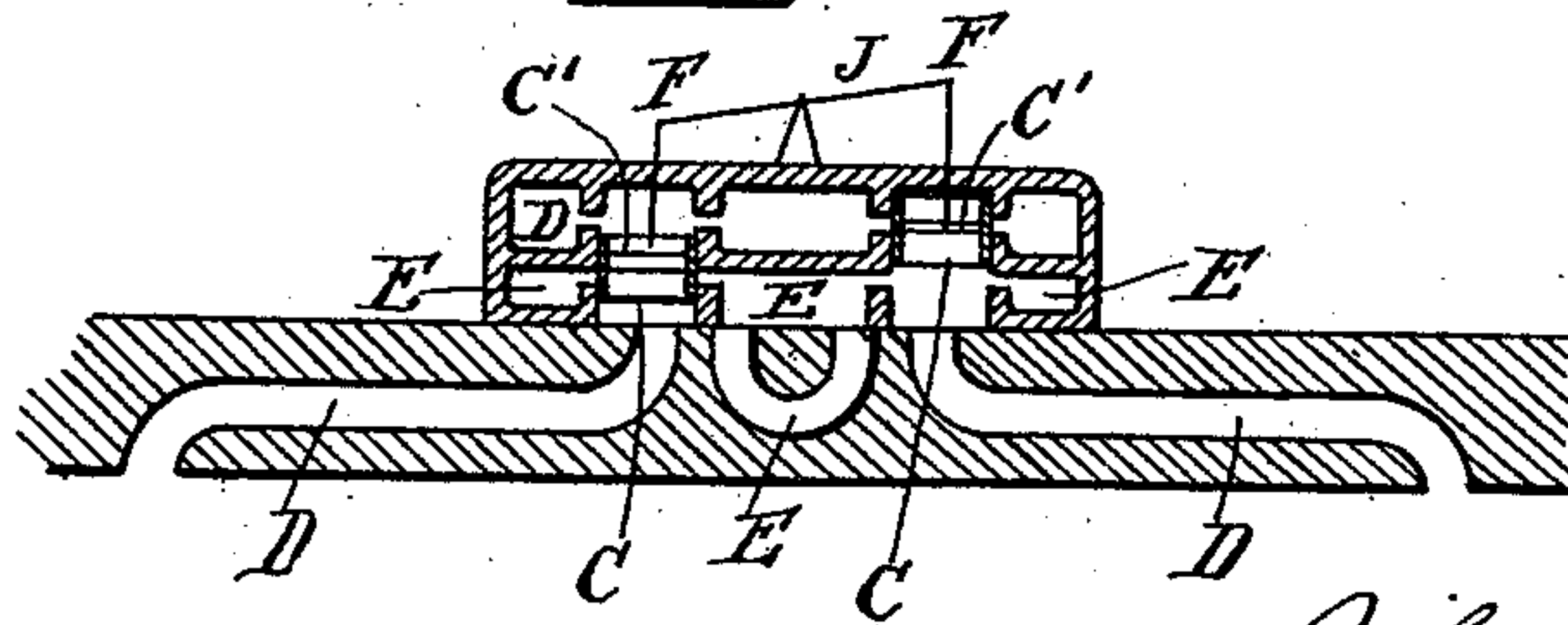


Fig. 3.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

JOHN ANDERSON, OF NEWCASTLE-UPON-TYNE, ENGLAND.

## VALVE FOR POWER-MOTORS.

SPECIFICATION forming part of Letters Patent No. 572,396, dated December 1, 1896.

Application filed April 12, 1895. Serial No. 545,535. (No model.) Patented in England November 5, 1894, No. 21,175.

*To all whom it may concern:*

Be it known that I, JOHN ANDERSON, a subject of the Queen of Great Britain, residing in Newcastle-upon-Tyne, England, have invented certain new and useful Improvements in Valves for Power-Motors, (for which I have obtained English patent, dated November 5, 1894, No. 21,175,) of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof, in which similar letters of reference indicate corresponding parts in all the figures.

This invention relates to the valves of power-cylinders, and particularly to what are known as "slide-valves" for controlling the pressure in steam or other engine-cylinders; and it consists of a cylindrical chamber communicating directly with the cylinder in which the piston operates, said chamber being surrounded by the pressure and exhaust spaces and provided with pressure and exhaust ports which communicate therewith, respectively, and a valve in the form of a ring fitting closely inside and of sufficient width to cover both the pressure and exhaust ports, so that a movement either way will admit or eject the steam or other power medium, the various parts being constructed, combined, and operated in the manner hereinafter set out.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a vertical section of the end of a cylinder provided with my improvement and showing the piston and shaft in full lines. Fig. 2 shows a plan of the valve on an enlarged scale, and Fig. 3 is a sectional view showing my improvement applied to the side or top of a cylinder for replacing the common slide-valve.

Referring to the drawings, the reference-letter A designates the cylinder, B the piston, and A' the head or cover in which is formed the steam-space D and the exhaust chamber or space E.

In the cylindrical chamber C, provided with ports which communicate with both the steam pressure and exhaust spaces or chambers, is the ring-valve C', mounted on the valve spindle or shaft F, which, as shown, is raised so as to admit steam into the cylinder, and at the same time it covers the exhaust-port, while the other end of the cylinder (not

shown) being similarly fitted the valve C' thereof will at the same time be reversed, so that the steam-port is closed and the exhaust-port open and the piston will be operated, as will be readily understood.

The valve C' is perfectly balanced, the pressure being equal all around, both on the outer and inner side thereof, and it is therefore not influenced by pressure in the manner usual with this class of devices.

In Fig. 2 I have shown how the valve can be adjusted to compensate for wear, one side being split or open and a wedge G inserted and held in place by a bolt H and prevented from undue expansion. The valves at each end of the cylinder are connected by a rod outside (not shown) and operated by link-motion or after gearing, as will be readily understood.

In Fig. 3 the two valves are located in one steam chamber or chest and connected by a lever J, which is pivotally supported and may be operated in the usual way, the separate ports being so arranged as to admit of this location and operation of the valves.

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

1. A power-cylinder having a piston adapted to operate therein, a head or cover for said cylinder provided with a steam-space D and an exhaust-chamber E, a cylindrical chamber C provided with ports communicating with the steam-space and exhaust-chamber and opening into the cylinder, and a valve adapted to operate into the said cylindrical chamber and comprising a ring C' split or open at one side, a wedge G arranged in said split or opening and a bolt H securing said wedge in place, substantially as described.

2. In a power-cylinder, a ring-valve having a hub, a peripheral rim and radial arms connecting said hub and rim, said rim and one of the arms being split to receive a wedge G, and a bolt H passing through the split arm to secure the wedge in place, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 22d day of March, 1895.

JOHN ANDERSON.

Witnesses:

WM. S. CAMPBELL,  
H. NIXON.