

J. BRANDON & A. W. TRANKLE.
Engines for Rock-Drills.

No. 157,674.

Patented Dec. 15, 1874.

Fig. 1.

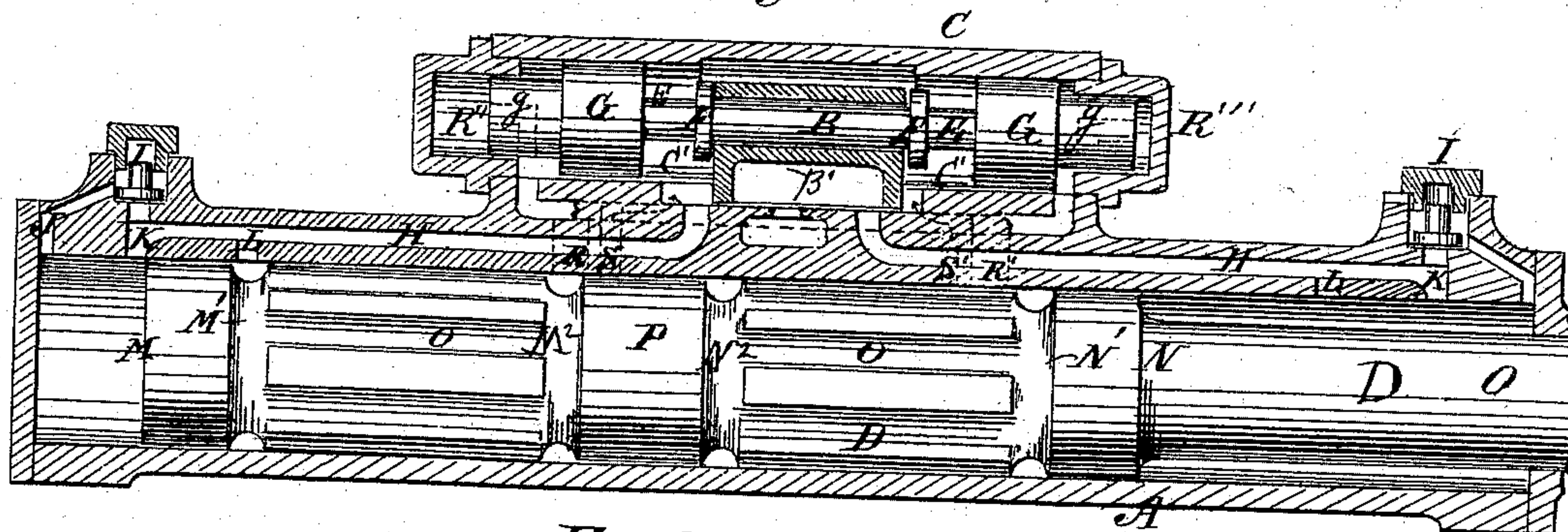


Fig. 2. y

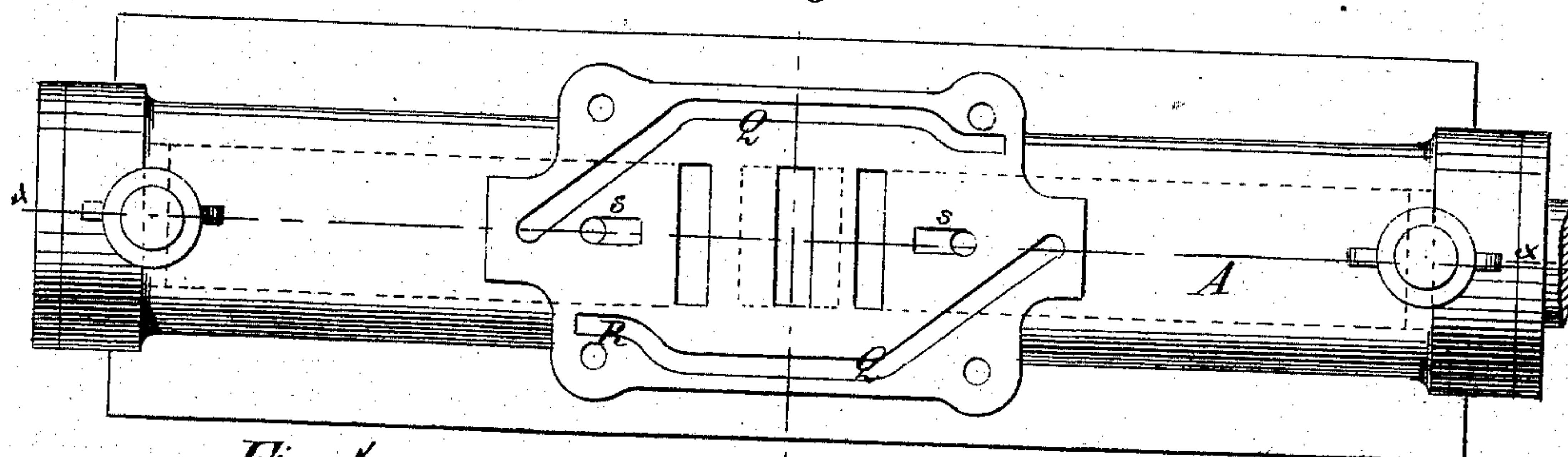


Fig. 4.

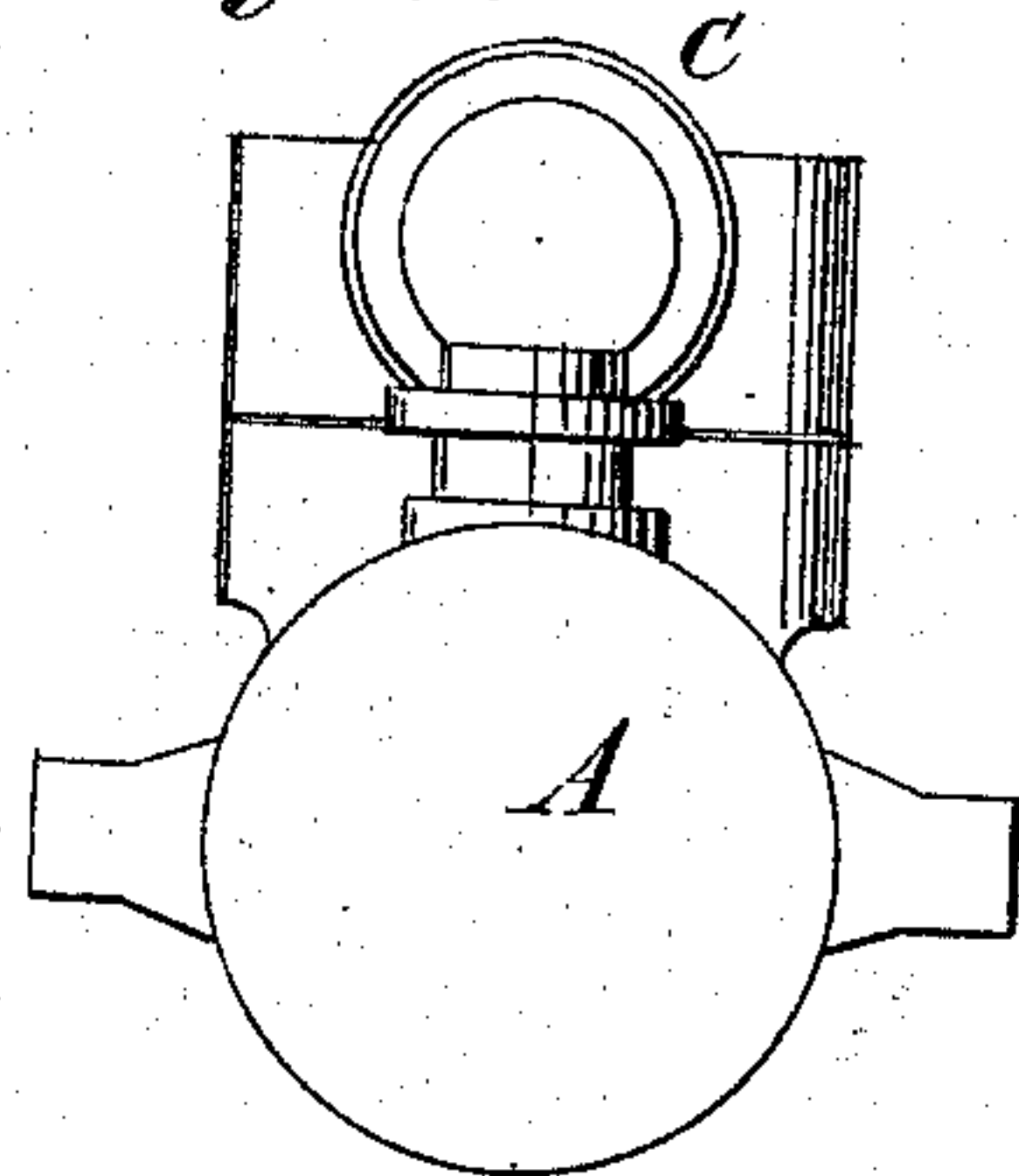
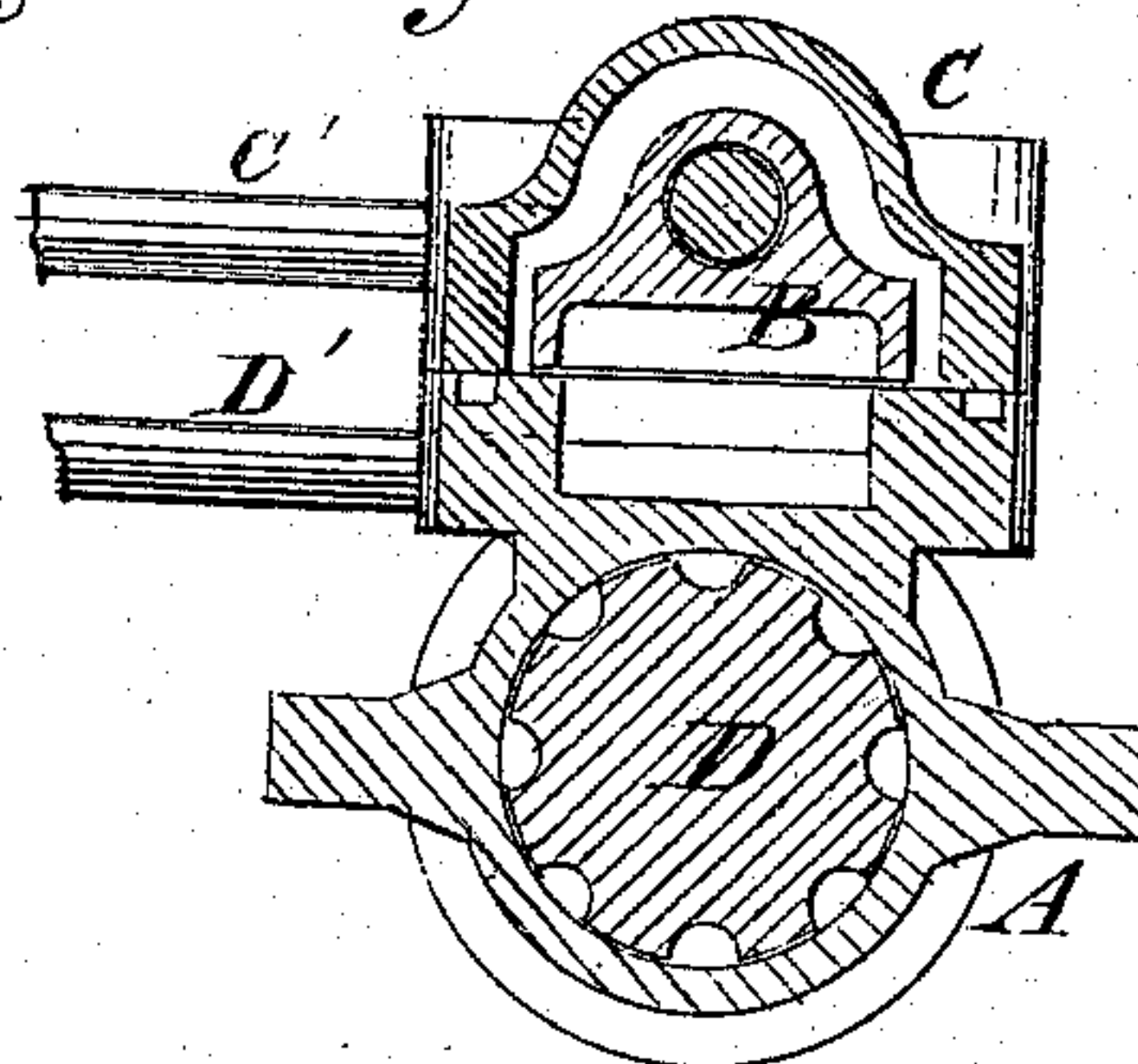


Fig. 3.



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IMPROVEMENT IN ENGINES FOR ROCK-DRILLS.

Specification forming part of Letters Patent No. **157,674**, dated December 15, 1874; application filed March 7, 1874.

To all whom it may concern:

Be it known that we, JAMES BRANDON and ALBERT W. TRANKLE, of the city, county, and State of New York, have invented a new and Improved Steam-Engine for Rock-Drills; and we do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing forming a part of this specification, in which—

Figure 1 represents a vertical longitudinal section; Fig. 2, a plan; Fig. 3, a vertical cross-sectional view, and Fig. 4 an end view.

The invention will first be fully described, and then pointed out in the claim.

A represents the cylinder, B the valve-rod, B' the valve, C the valve-chest, and D the piston-rod, of engine. The valve-rod B has collars F, that secure the valve in place, and extensions E, on which are fixed the pistons G G. The guide ends *g g* of the pistons G work in the spaces R'' R'''. H K are the steam-passages that connect each end of cylinder A with the steam-chest, and enable the piston M P N to be reciprocated. This piston has annular grooves M¹ M² and N¹ N², connected by longitudinal grooves O, (or simply recessed between the heads M P and P N.) The channel-ways thus formed between these heads connect with passage H by opening L, with channels Q, that lead to R'' R''', by passages R R', and with the live-steam chamber C by passages S S'.

There is, in consequence of this relative construction, an equilibrium of steam-pressure always maintained on both sides of the pistons G G, except just before the heads M N reach the limit of their throw. The steam is momentarily cut off from access to passage R through passage S, and the steam in end R''' is discharged through passages Q, R, O, L, and H into the exhaust. This serves to reverse the position of pistons G G and the valve B'. Ordinarily the live-steam chamber is always connected with spaces R'' R''' behind pistons G G, either by way of passages S, S', H, O, R or R', and Q, or, when S is cut off, through L, H, O, R or R', and Q. The steam is exhausted alternately through the passages H H.

Having thus described our invention, what we claim is—

The combination, with piston having grooves O between its heads M N P, and the cylinder A, having steam-passages H, L, R, R', S, S', and Q Q, connecting with live-steam chamber C, of the connected valve-pistons G G, having spaces R'' R''', connecting with said channel-ways Q, as and for the purpose specified.

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