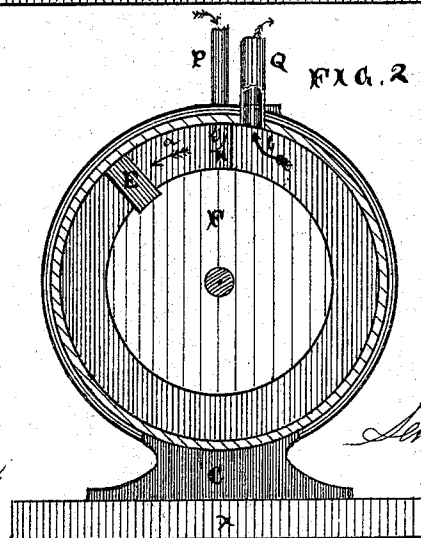
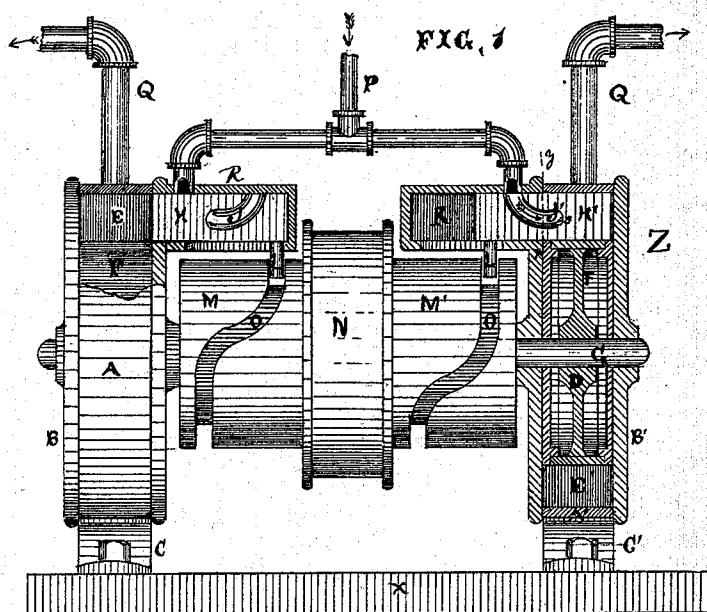


S. P. OCHILTREE.
Rotary Engines.

No. 139,807.

Patented June 10, 1873.



Witnesses;
C. R. Anderson
C. V. Thomas.

Inventor.
Samuel P. Ochiltree
Per S. C. & J. H. Smith
Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL P. OCHILTREE, OF ORANGE, INDIANA, ASSIGNOR OF ONE-HALF
OF HIS RIGHT TO GEORGE H. PUNTENNEY.

IMPROVEMENT IN ROTARY ENGINES.

Specification forming part of Letters Patent No. **139,807**, dated June 10, 1873; application filed
April 23, 1873.

To all whom it may concern:

Be it known that I, SAMUEL P. OCHILTREE, of Orange, county of Fayette and State of Indiana, have invented certain Improvements in Rotary Engines, of which the following is a specification:

My improvement consists in the arrangement of two cylinders, connected together by a shaft, on which is placed another cylinder having a belt-surface at its center and a cam at each side of the belt-wheel. These cams are made in such a way that the slide-valves are worked each independent of the other, and one has always a positive pressure against it until the other is in its position, thus giving a constant pressure against the piston at all times.

By my construction of parts I have a movable valve for each cylinder, which moves back to let the piston pass, and then moves forward to form an abutment for the steam to press against, and thereby always have a pressure of steam against one valve or sliding abutment until the other valve is in position to receive the pressure.

Figure 1 represents a side elevation of a double rotary engine, partially in section, embodying my improvement. Fig. 2 is an elevation of one end of the same.

A A' are the cylinders, mounted upon legs O O', which are secured to the bed X. B B' represent the heads of the cylinders. G is the main shaft, that passes through the two cylinders, and has a band-wheel or drum, N, at its center. On each side of the band-wheel N is another drum, M M', in each of which is a cam-groove, O O', arranged in such a manner that when the wheel N revolves the cam moves the valve-abutments H and H' forward and back alternately, but never moves one back until the other is in position to work. Each of these abutments has a downward-projecting pin, L, which fits into the cam-grooves O O' to cause the desired movement. The valve abutments or slides H and H' slide in the steam-chests R far enough to let the

pistons E and E' pass, and then move forward far enough to form an abutment in the cylinder for steam to press against. In each of these valve-slides H and H' is a hole, J and J', bored through from the top of the valve and out at the side of the valve, when the valve is in the position, as shown in Fig. 1, at Z.

It will be seen that the opening in the valve H', at the upper side, is directly opposite the entrance of the steam through the pipe P, and the other end of the hole J' of the valve H' is just inside of the cylinder, as shown by the line *xy*. This gives steam instantly to this side of the piston and against the valve, causing it to revolve; and while in this position the piston in the opposite cylinder A passes the valve H. When this valve moves forward, by means of the cam O, and as the hole J in this valve comes opposite the steam-pipe P, it takes steam, and the other valve, H', moves back to allow the piston E' to pass. By this arrangement we always have a constant pressure to perform the work against the two pistons E and E' the same as a reciprocating engine, and the arrangement of the holes J and J' in the valves makes a perfect cut-off to the steam until they are in the proper position to admit steam again.

I claim—

The combination of the cylinders A A' with wheels D and pistons E E', the shaft G with central drum N, and side drums M M' having cam-grooves O O', the steam-chests R R, and the sliding abutments H H' with pins L L', all the parts constructed and arranged substantially as and for the purposes herein set forth.

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

SAMUEL P. OCHILTREE.

Witnesses:

S. O. FRINK,
E. O. FRINK.