(No Model.) 2 Sheets—Sheet 1.

T. LATCH.

ROTARY ENGINE.

No. 455,668. Patented July 7, 1891.

Fig. 1.

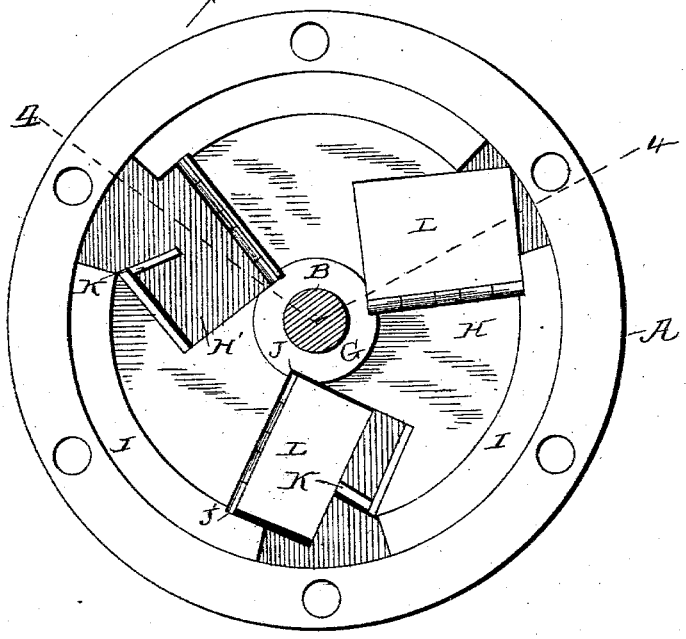
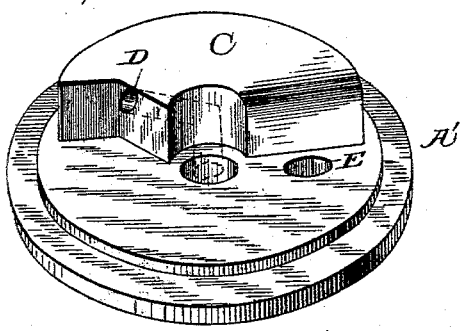


Fig. 2.



Witnesses
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J. F. Reily

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(No Model.) 2 Sheets—Sheet 2.

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ROTARY ENGINE.

No. 455,668. Patented July 7, 1891.

Fig. 3.

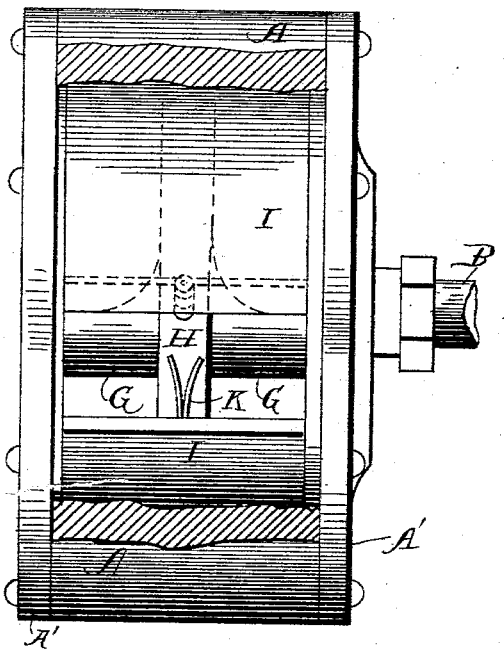


Fig 4.

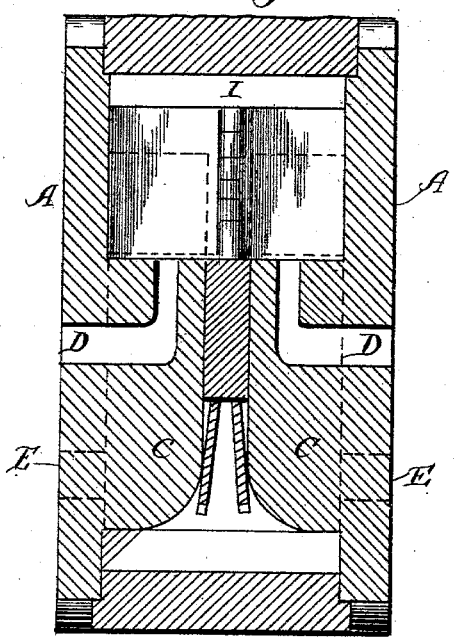
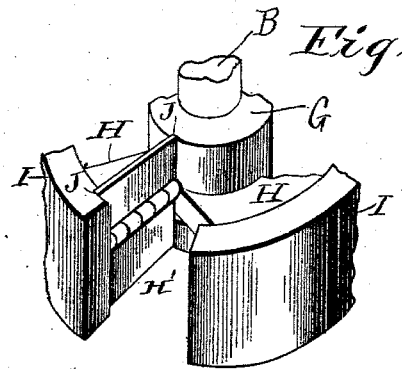


Fig 5.



Witnesses.
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UNITED STATES PATENT OFFICE.

THEODORE LATCH, OF JOLIET, ILLINOIS.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 455,668, dated July 7, 1891.

Application filed February 24, 1890. Serial No. 341,497. (No model.)

To all whom it may concern:

Be it known that I, THEODORE LATCH, a citizen of the United States, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in Rotary Engines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention consists in a new and improved rotary steam-engine, which will be hereinafter fully described and claimed.

Referring to the accompanying drawings, Figure 1 is a side view of the engine with the cylinder-head on that side removed. Fig. 2 is a perspective plan view of the inner side of one of the cylinder-heads. Fig. 3 is an end view, partly in section. Fig. 4 is a sectional view taken on the plane indicated by line 4 4, Fig. 1; and Fig. 5 is a detail view of one of the valves.

The same letters of reference indicate corresponding parts in all the figures.

Referring to the several parts by letter, A indicates the cylinder of my new and improved steam-engine, which may be of any desired size, A′ A′ indicating the heads of the cylinder.

B indicates the drive-shaft, which is journaled in the ends or heads of the cylinder, and on which the rotary piston is mounted.

On the inner side of each cylinder-head is formed a segmental block C, through which is formed an inlet passage or port D for the entrance of the steam from the boiler to act upon the piston.

Upon the drive-shaft B is secured the piston, consisting of a central hub G, the central disk H, formed with the openings H′, and the curved shoes I, secured to the outer edge of the said disk, as shown. In the openings H′ of the disk H are pivoted or hinged the valves L, which are arranged in pairs, as shown, to open out on opposite sides of the central disk. To the opposite edges of the openings H′ are secured springs K, which prevent the valves from closing flush with the face of the disk, holding their free ends out a little above the sides of the disk.

The hub G and the inner side of the shoes I near their ends are formed with the shoulders J J′, coinciding with the hinge or pivotal points of the pairs of valves, so that when the valves open out at right angles to the disk H they will come in contact with these shoulders.

The operation of my rotary engine is as follows: The steam enters through the inlet-ports D on each side of the piston, the inner ends of these ports being at the inner edge of that end of the block C, as shown, when the steam presses under the slightly-raised free ends of the pair of valves at that end of the blocks C, forcing the hinged valves open until they come in contact with the shoulders J J′, when they are held open at right angles to the disk H. The steam pressing against these valves forces the piston around, carrying with it the drive-shaft, and when these valves have completed one-third of a revolution the next pair of valves clear the end of the blocks C and come into play, the steam pressing them open, as before described. When each pair of valves has completed about two-thirds of a full revolution, they come in contact with the curved rear ends C′ of the blocks C, and as they pass under these blocks the blocks press them in, closing them into their normal position against the springs K, which hold their free ends a little above the sides of the disk H to permit the steam to enter under the said free ends when the valves have cleared the inlet end of the blocks. The steam exhausts through the exhaust-ports E, placed at the rear ends of the blocks C.

A suitable elastic or spring packing is inserted in the free edges of the valves L transversely across the outer faces of the shoes I and transversely across the segmental blocks C to make thoroughly steam-tight joints at the points specified, and as any well-known form of packing can be used I have not deemed it necessary to illustrate the said packing.

From the foregoing description, taken in connection with the accompanying drawings, the construction and operation of my new and improved rotary engine will be readily understood. It will be seen that my rotary engine is very simple and strong in its construction and thoroughly efficient and satisfactory in its operation.

Having thus described my invention, what

I claim, and desire to secure by Letters Patent, is—

1. A valve for rotary-engine pistons, consisting of hinged plates adapted to open and close on opposite faces of the piston, substantially as set forth.

2. The combination of the cylinder having the internal segmental end blocks C, the inlet-ports D, the outlet-ports E, a piston, and the valves hinged to the piston at one or more points in its circumference and adapted to fold together on both faces of the piston when passing the blocks C and to be opened out on both faces of the piston by the steam after clearing said blocks, substantially as set forth.

3. The combination of the cylinder having the internal segmental end blocks C, the inlet-ports D, the outlet-ports E, the piston secured to the drive-shaft and consisting of the hub formed with the shoulders J, the disk H, formed with the openings H′, and the curved shoes I, formed with the shoulders J′, the oppositely-opening valves L, hinged in pairs to the piston-disk and opening out on both faces of the same, and the springs K, substantially as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

THEODORE LATCH.

Witnesses:
HERBERT BECK,
HENRY SALLENBACH.