No. 644,016. Patented Feb. 20, 1900.

# H. R. JUNE & W. L. PERRY.

## ROTARY ENGINE.

(Application filed May 24, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

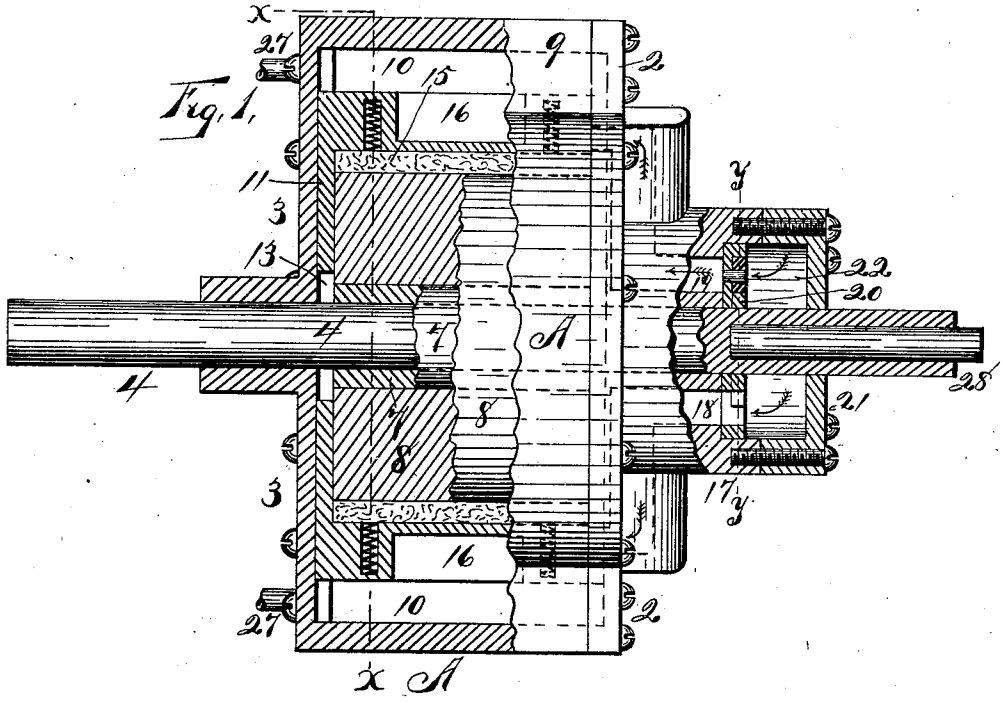



Fig. 2.

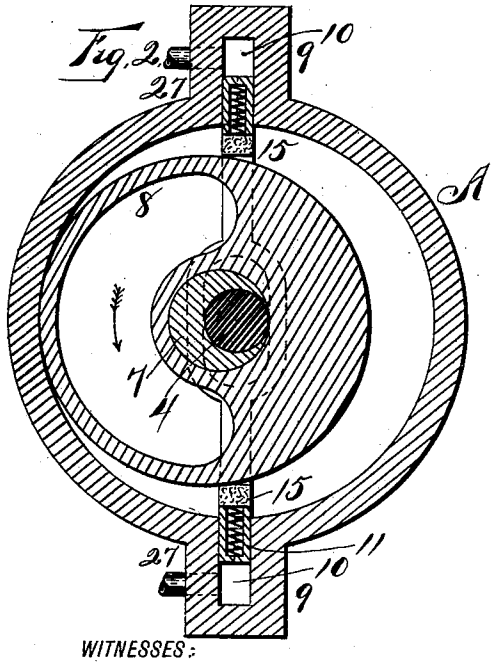
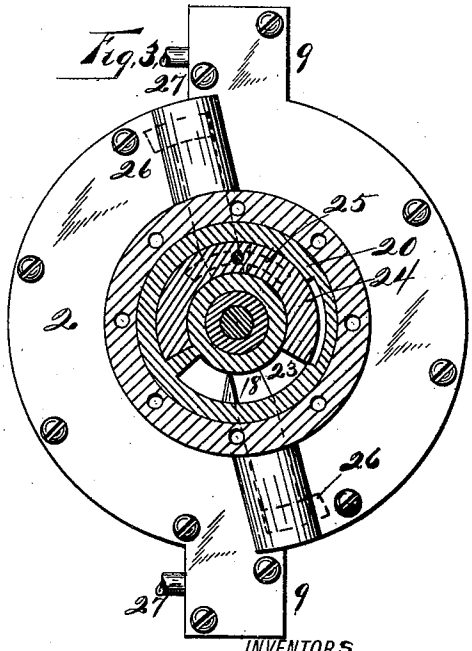



Fig. 3.




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Fig. 4.

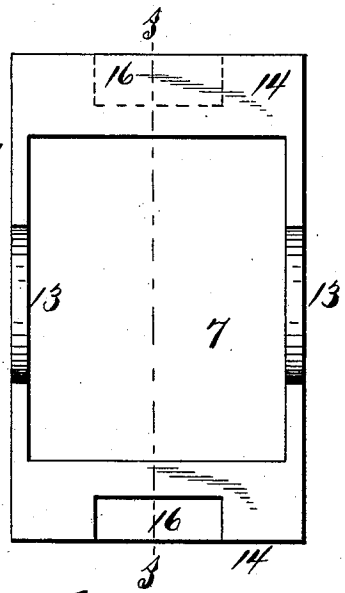



Fig. 5.




Fig. 6.

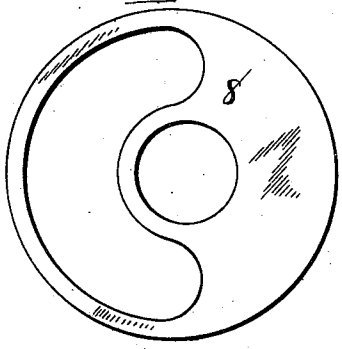



Fig. 7.

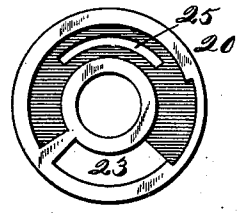



Fig. 8.

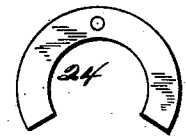
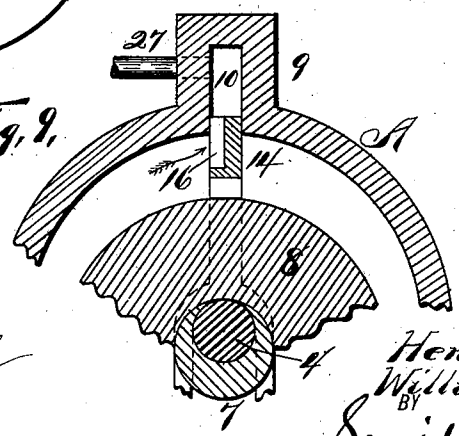



Fig. 9.




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# UNITED STATES PATENT OFFICE.

HENRY R. JUNE AND WILLIAM L. PERRY, OF ELMIRA, NEW YORK.

## ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 644,016, dated February 20, 1900.

Application filed May 24, 1899. Serial No. 718,030. (No model.)

*To all whom it may concern:*

Be it known that we, HENRY R. JUNE and WILLIAM L. PERRY, of Elmira Heights, in the county of Chemung, in the State of New York, have invented new and useful Improvements in Rotary Engines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

Our invention relates to rotary engines.

Our object is to produce an improved engine comprising a cylindrical casing, a shaft concentric therewith, an eccentric upon said shaft, a circular and interiorly-recessed piston upon and eccentric to said eccentric, whereby one side is always in contact with the wall of said casing, and a gate astride of said piston and shaft and reciprocated upon a line diametrical to said casing to alternately open and close the steam inlets and exhausts, respectively, and provided with a spring-pressed packing on opposite sides engaging with opposite sides of said piston, with suitable valve mechanism to intermittently cut off the inflow of steam and suitable steam and exhaust ports in said casing.

It is constructed as follows, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of the engine, partly sectional and broken away. Fig. 2 is a vertical section on line *x x*, Fig. 1. Fig. 3 is a like section on line *y y*, Fig. 1. Fig. 4 is an elevation of the sliding gate or cut-off detached. Fig. 5 is a section thereof on line *z z* in Fig. 4. Fig. 6 is a plan view of the revolving piston detached. Fig. 7 is a front elevation of the rotating and alternating steam-inlet, cut-off, and exhaust-valve. Fig. 8 is a plan of the shifting gate in said valve. Fig. 9 is a sectional detail showing one exhaust-port open.

A is a suitable cylindrical body having heads 2 3 closing its ends and in which a shaft 4 is suitably mounted or journaled, as in bosses on the heads. Upon this shaft is an eccentric 7, adjustable in any ordinary way, as by an ordinary set-screw, and upon this eccentric a piston 8 is adjustably mounted in order that one side thereof will always be in contact with the inner wall of said casing, the adjustment of the eccentric and the adjustment of the piston upon the eccentric accomplishing this result, thus taking up all wear.

The casing is provided with offsets 9 on diametrically-opposite sides, each of which is provided with a radial groove or way 10, in which a sliding or reciprocatory gate 11 is mounted, comprising a rectangular frame. The sides 12 are provided with elongated openings 13, through which the shaft 4 passes loosely, the piston being within said gate and engaging with the ends 14, with the aid of the spring-pressed packing 15, so that by the rotation of said piston said gate is reciprocated. In the ends of said piston are pockets 16 on opposite sides. Upon the head 2 is a boss 17, shouldered interiorly and provided with steam-ports 18 19, which, as shown by dotted lines, extend angularly outward into position to open inwardly into the steam-chamber between the piston and casing through inlet-ports (shown by the dotted lines in Fig. 3) which are alternately opened and closed by the rotation of said piston. Upon the shaft 4 a rotating valve 20 is secured, abutting against the shoulder in said boss, and the cap 21 when secured in position creates a steam-chest 22 around said shaft, and by the rotation of the valve the port 23 therein alternately coincides with the ports 18 19, respectively. A sliding and adjustable gate 24 is seated in said valve by means of a slot 25 and a pin shown in said gate, whereby by shifting or setting it the size of the port 23 may be varied and the flow of steam regulated.

It will be seen that the reciprocating piston operates to alternately open and close the respective exhaust-ports, being shown in Figs. 1 and 2 as in position where both ports are closed, while in Fig. 9 the parts are shown in position where one of said ports is wide open. At the same time the inlet-port 26, (dotted lines,) being also the inner end of the port 18 or 19, is open, admitting steam into the chamber on the left of said piston. The force of the steam is exerted against the eccentricity of the piston to the driven shaft, driving said shaft through the leverage exerted.

Exhaust-pipes 27 are provided to carry off the exhaust from the opposite sides of the casing.

A suitable governor (not shown) can be

mounted upon the driven shaft or upon a spindle 28, secured therein.

What we claim as our invention, and desire to secure by Letters Patent, is—

1. In a rotary engine the combination with a casing, a driven shaft concentric therewith, and exhaust-ports on opposite sides of said casing, of an eccentric upon said shaft, a piston upon said eccentric and eccentric to it and said shaft, of a gate upon and projecting beyond the opposite sides of said eccentric and diametrical to the casing and reciprocated by the rotation of said piston to open and close said exhaust-ports alternately.

2. In a rotary engine the combination with a driven shaft, a casing provided with ways on opposite sides extending beyond its outer periphery and exhaust-ports opening outwardly from said ways, of a gate in said ways and diametrical to said casing, an eccentric upon said shaft, and a piston upon said eccentric and eccentric to it and said shaft and rotating through an opening in said gate whereby said gate is reciprocated in said ways to open and close said exhaust-ports alternately.

In witness whereof we have hereunto set our hands this 5th day of May, 1899.

HENRY R. JUNE.
WILLIAM L. PERRY.

Witnesses:
ROBERT S. PERRY,
CHAS. WHITING.