

W. H. H. MORELOCK.
 ROTARY ENGINE.
 APPLICATION FILED OCT. 22, 1908.

Patented Sept. 28, 1909.
 2 SHEETS—SHEET 1.

935,160.

Fig. 1.

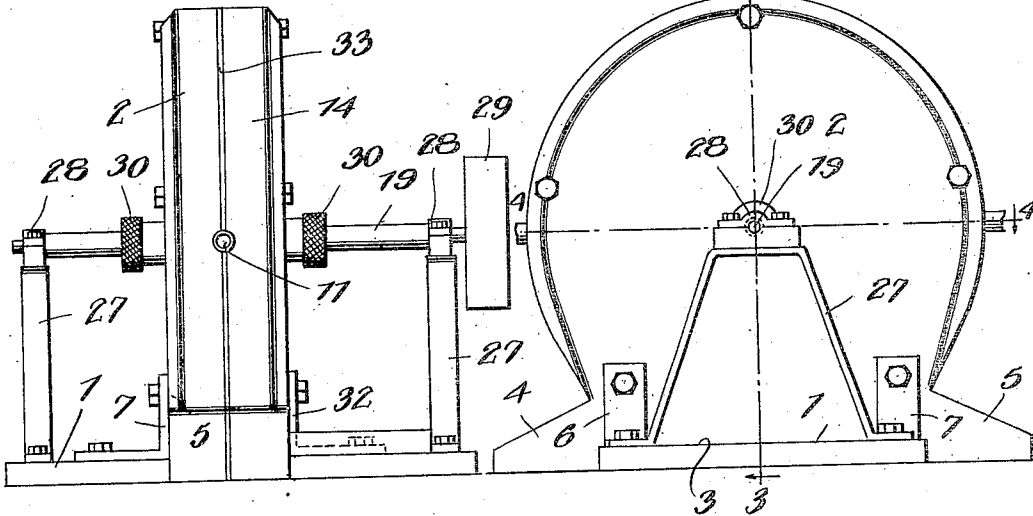


Fig. 2.

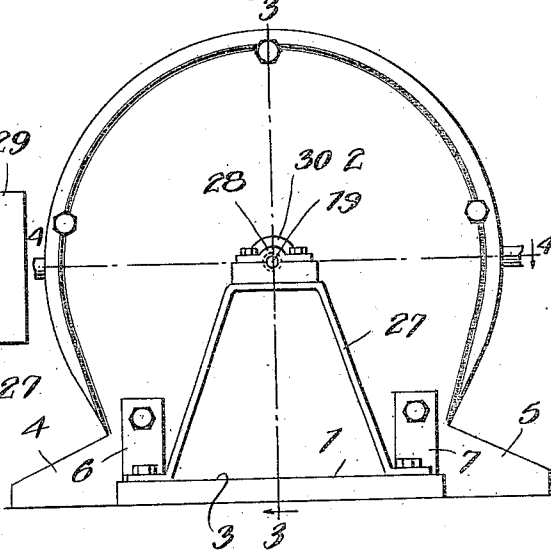


Fig. 3.

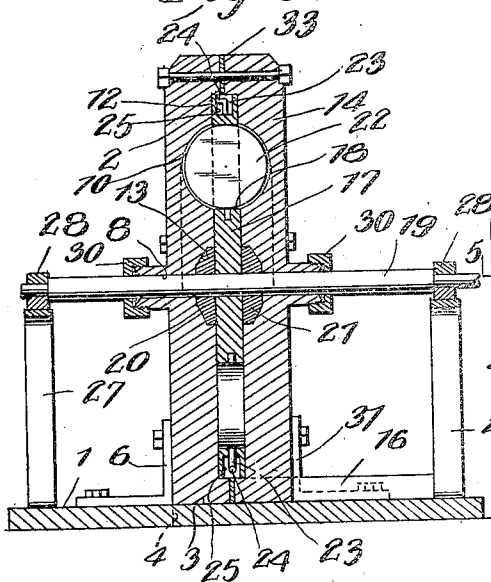
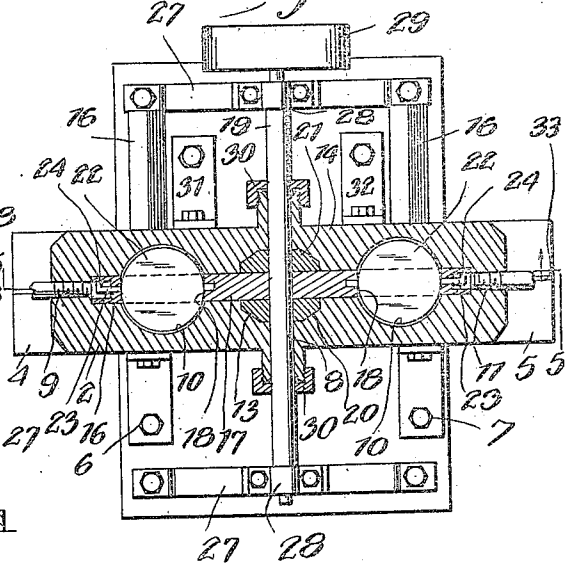


Fig. 4.



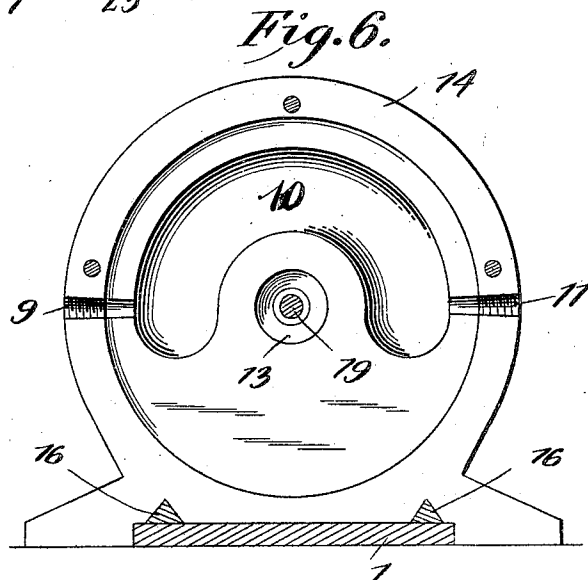
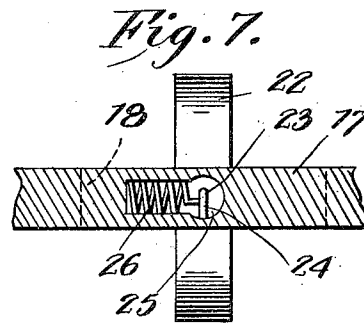
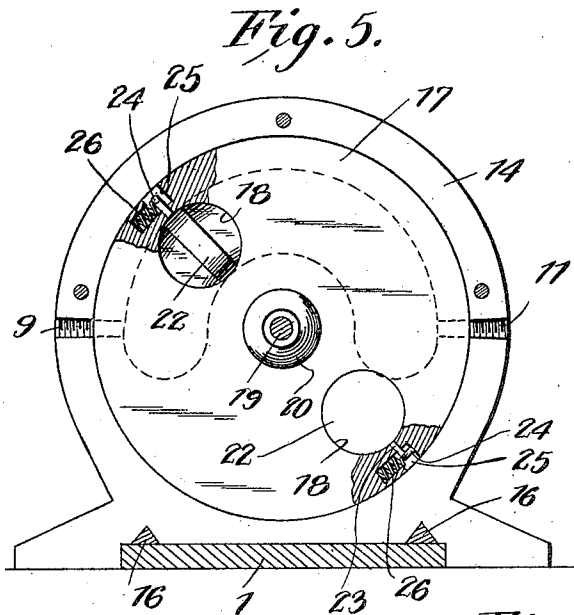
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UNITED STATES PATENT OFFICE.

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ROTARY ENGINE.

935,160.

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To all whom it may concern:

Be it known that I, WILLIAM H. H. MORELOCK, a citizen of the United States, residing at Jonesboro, in the county of Craighead and State of Arkansas, have invented certain new and useful Improvements in Rotary Engines; and I do 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.

This invention relates to improvements in rotary engines and comprises the production of an engine having a rotary piston provided with a plurality of valves secured thereon in such a manner that the piston will be propelled by the action of steam or other fluid under pressure against said valves.

One of the objects of the invention is the production of a rotary engine comprising a sectional casing and a rotary piston movable within the casing and so formed that the casing is interlocked with the base plate.

In the accompanying drawings, Figure 1 is a side elevation of my improved rotary engine; Fig. 2 is an end elevation; Fig. 3 is a central vertical longitudinal section taken on line 3—3 of Fig. 2; Fig. 4 is a horizontal sectional view taken on line 4—4 of Fig. 2; Fig. 5 is a vertical sectional view taken on the line 5—5 of Fig. 4; Fig. 6 is a detailed view of one-half of the engine casing showing its interior construction, and, Fig. 7 is a detailed view of a piston periphery showing one of the valve controlling springs.

In the accompanying drawings, I have illustrated the preferred embodiment of my invention which is adapted to be used in connection with water power, air power, or steam and preferably the latter.

In the drawings, the numeral 1 designates the base support and 2, the left section of an engine casing which is formed with a longitudinal groove 3 and is mounted on the base plate 1 so that the legs 4 and 5 of said casing section will occupy opposite positions against the longitudinal edges of the base plate 1 and the bottom of said legs will be flush with the bottom of the base plate.

The engine casing 2 is held in a rigid position on the base plate 1 by means of oppositely disposed angular braces 6 and 7, which have part of their ends connected to

the base plate and the remaining ends connected to the casing section 2. The casing section 2 is formed with a centrally disposed shaft opening 8 and is also formed with a semi-circular steam entrance port 9 which communicates, by means of a concentric groove 10 which is semi-circular in cross section and formed in the upper half of the casing, with a steam exhaust port 11 which port is also formed semi-circular and is disposed oppositely on the casing section. The casing section 2 is provided with a piston seat 12 and is countersunk on its interior side at 13 to receive a shaft collar. I provide also a second engine casing section 14 which is formed a duplicate of section 2, with the exception that on its lower longitudinal edge it is provided with V-shaped guides 16 which are oppositely arranged on the base plate 1.

The entrance port 9 inclines interiorly toward the concentric groove 10 and the exit port 11 is similarly arranged so as to effectively concentrate the pressure fluid. A piston 17 which is formed with circular openings 18 oppositely arranged on said piston, is secured on the shaft 19 by means of a collar 20 which is fixed on said shaft on one side of said casing to a second collar 21 which is fixed to said piston on the opposite side thereof.

A plurality of wing valves 22 are movably arranged in the openings 18 in the piston 17 by pins 23 secured transversely to the piston 17 which pins are provided at their upper ends with right angularly bent portions 24 which portions are movable in openings 25 and against springs 26. The openings 25 are so formed that the angularly bent portions of the pins 24 are moved against the springs 26 and not out of contact with said springs. The springs 26 are adapted to exert tension against the angularly bent portions 24 of the pins 23 in such a manner that the wing valves 22 will be held at right angles to the piston 17 when said wing valves are moving in the eccentric grooves 10.

The shaft 19 is supported at its outer ends by inverted U-shaped supports 27 which are provided with bearings 28, one end of said shaft being provided with a drive wheel 29 which is keyed thereto. The casing sections 2 and 14 are provided with packing boxes 30

through which the shaft 19 extends, said packing boxes being adapted to prevent any escape of the driving fluid from the engine casing through the openings 18 formed in said casing.

The casing section 14 is held in fixed position on the base plate 1 by means of angular braces 31 and 32 which have part of their ends secured to the base plate 1 and the remaining ends to said engine casing. The two engine casing sections 2 and 14 are connected together. A packing ring 33 is arranged between said sections so as to prevent the driving fluid from escaping therefrom.

The piston 17 is secured between the casing sections 2 and 14 so that one-half of said piston will be seated in one section and the opposite half in the opposite section. The ports 9 and 11 are disposed in the casing sections 2 and 14 so that the steam pressure will be equal in both casing sections. When the piston 17 is rotated so as to bring the wing valves 22 into alinement with the entrance and exhaust ports, both of said valves will occupy a position at right angles to the piston 17, but, as the piston 17 is rotated, one of said valves will be moved past the exhaust port and the valve so moved that it will be brought in a position so that its opposite sides will be flush with the opposite sides of the piston 17. As the piston continues to move in the casing sections, the wing valves 22 will be successively and automatically brought to right angular positions with the piston and again to opposite positions as indicated. When the wing valves occupy a right angular position to the piston 17, steam or other fluid under pressure going through the entrance port will exert its pressure against said wing valves and, as the valves successively pass the exhaust opening, the steam confined between the valves will be exhausted.

The engine casing sections are so formed that they are securely interlocked with the base plate and both of said sections raised with said base plate upon a floor in such manner that practically no vibration will result from the operation of the engine which operation may be practically noiseless.

From the foregoing description taken in connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of

the invention, as defined in the appended claims.

I claim as my invention:—

1. A rotary engine comprising a sectional casing formed with oppositely arranged eccentric grooves, a shaft extending through the casing, means for supporting the outer ends of the shaft, a rotary piston formed with circular openings mounted on the shaft and movable within the casing, a plurality of wing valves secured in the openings into the piston by pins having their outer ends bent, and springs for holding the wing valves into right-angular position during part of the rotation of the piston arranged to bear against the bent ends of the pins.

2. A rotary engine comprising a base plate formed with guides, a casing section interlocked with the base plate and a second casing section formed with guide ways to receive the guides interlocked with said base plate.

3. A rotary engine comprising a base plate, an engine casing section interlocked with the base plate, means for securely fixing the engine casing section to the base plate, a second engine casing interlocked to the base plate, and formed with transverse grooves on its lower portion, guides arranged on the base plate adapted to engage with the transverse grooved portions of the second casing, and a rotary piston secured between the engine casing sections.

4. A rotary engine comprising a base plate, an engine casing section having a semicircular groove formed therein, means for securing the engine casing section to the base plate, V-shaped guides secured on the base plate, a second engine casing section formed with transverse grooves adapted to register with the V-shaped guides of the base plate, means for securing the second casing section on the base plate, a rotary piston movable between the casing sections, a plurality of wing valves movable on the rotary piston, pins having their outer ends bent at right angles to their main portions for securing the wing valves on the piston, and springs disposed in recesses formed in the piston and adapted to bear against the bent ends of the pins for normally holding the wing valves at right angles to the piston.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM H. H. MORELOCK.

Witnesses:

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W. N. NICHOLAS.