No. 878,998. PATENTED FEB. 11, 1908.

F. E. PENINGTON.

ROTARY ENGINE.

APPLICATION FILED SEPT. 13, 1907.

Fig. 1.

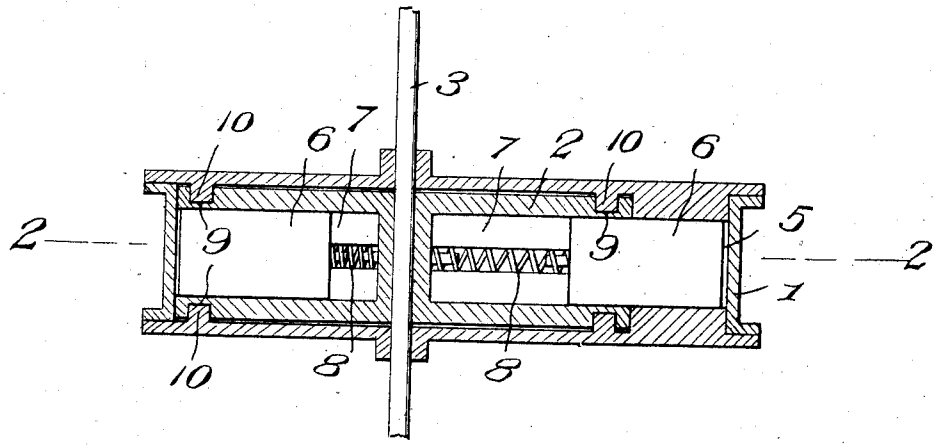
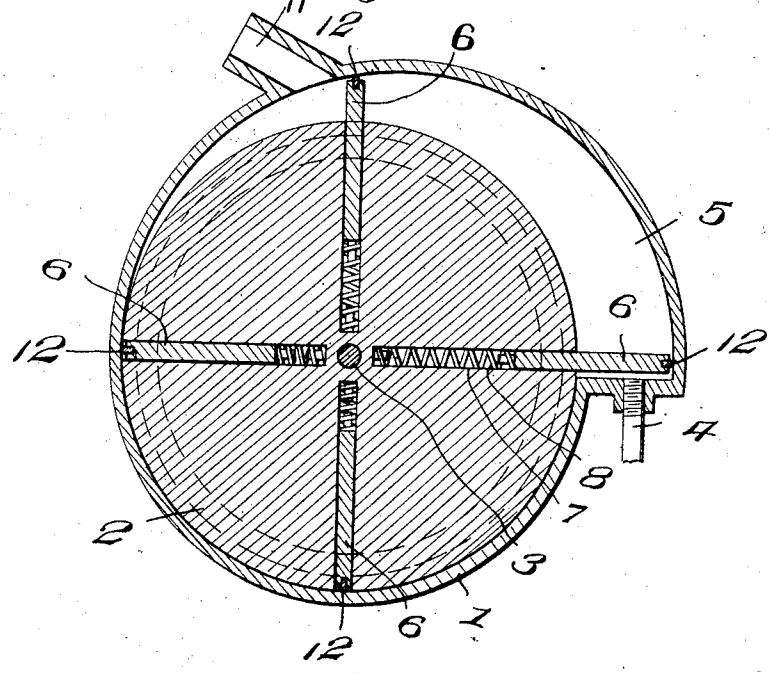


Fig. 2.



WITNESSES:

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FRANK E. PENINGTON, OF TOLEDO, ILLINOIS.

ROTARY ENGINE.

No. 878,998. Specification of Letters Patent. Patented Feb. 11, 1908.

Application filed September 13, 1907. Serial No. 392,709.

To all whom it may concern:

Be it known that I, FRANK E. PENINGTON, a citizen of the United States, residing at Toledo, in the county of Cumberland 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 relates to new and useful improvements in engines, and more particularly to that class known as rotary engines, and my object is to provide means for introducing the propelling medium into engagement with blades, carried by the piston of the engine, whereby said piston will be rotated continuously in one direction.

A further object is to provide a suitable exhaust port for the engine and a still further object is to provide means for successively extending the blades into the path of the propelling medium.

Other objects and advantages will be hereinafter referred to and more particularly pointed out in the claims.

In the accompanying drawings which are made a part of this application, Figure 1 is a horizontal, sectional view through the engine, and, Fig. 2 is a vertical, sectional view thereof, as seen on line 2—2, Fig. 1.

Referring to the drawings in which similar reference numerals designate corresponding parts throughout the several views, 1 indicates a casing, in which is rotatably mounted a piston 2, said piston being supported by means of a shaft 3, which extends laterally through the center of the piston and the casing 1.

The propelling medium is directed into the casing 1 through a feed pipe, which enters a suitable expansion chamber 5, formed at the peripheral edge of the casing 1, the inner wall of said expansion chamber being formed by the periphery of the piston 2, and in order to propel the piston, a plurality of blades 6 are seated in slots 7, extending inwardly from the periphery of the piston 2, the length of said blades being such that the blades may be entirely inclosed within the slots and in order to cause the blades to enter the expansion chamber 5 and extend over the mouth of the pipe 4, whereby the full blast of the propelling medium will be directed against the blade, a spring 8 is located in the slot 7 and is so arranged as to direct outward pressure on the blades, whereby, when one of the blades has reached the expansion chamber, the spring will immediately move the blade outwardly and into engagement with the outer wall of the expansion chamber and over the end of the feed pipe.

The lower half of the casing 1 is concentrically disposed around the piston 2, while the upper portion thereof is eccentrically arranged to provide the expansion chamber, so that as the piston is rotated, the blades will be gradually moved into the slots 7, so that by the time the piston has made a half revolution, the blades will be entirely encased in the slots. Each face of the piston 2 is provided with a circular channel 9, in which is adapted to rest a ring 10, carried by each end wall of the casing, thereby preventing undue vibration of the piston.

This form of engine is adapted more particularly to be operated by means of steam, or compressed air and, in operation, the propelling medium is directed into the larger end of the expansion chamber and directly into engagement with one of the blades 6, the force of the propelling medium moving the blade upwardly in the expansion chamber and, consequently, rotating the piston, and the force of the propelling medium is such as to rotate the piston a sufficient distance to allow the next succeeding blade to enter the expansion chamber 5, the momentum of the piston 2 being such as to carry the blades a sufficient distance beyond the exhaust port 11.

While I have shown but four blades in connection with the piston, it will be readily understood that any suitable number of pistons may be used, as deemed most expedient for the best results and in order to prevent leakage of the propelling medium at the outer ends of the blades, said blades are provided with suitable packing 12, which is adapted to engage the inner peripheral surface of the casing and expansion chamber and the packing is also adapted to prevent wear on the ends of the blades, as it will be readily seen that said packing may be renewed when the same becomes worn.

That end of the expansion chamber 5, receiving the feed pipe 4, rests in a horizontal position, so that the blades will move from the slots 7 with a quick motion, until they reach the inner periphery of the wall of the expansion chamber, thereby, quickly dis-

posing the blades over the end of the feed pipe, while the opposite end of the wall of the expansion chamber gradually tapers inwardly, until it forms a union with the concentric portion of the wall, and, as the ends of the blades travel in engagement with the peripheral wall of the casing, it will be seen that the blades will be gradually moved inwardly, as the piston is rotated, so that by the time the piston has made a half revolution, two of the blades will be entirely seated in the slots, while the opposite two blades will be extended into engagement with the peripheral wall of the expansion chamber.

It will thus be seen that I have provided a very cheap and economical form of engine, and one that can be propelled by either steam or air pressure. It will further be seen that the piston will be continuously rotated, as long as the propelling medium is being introduced into the expansion chamber and it will also be seen that owing to the simple construction of the several parts of the engine, the parts thereof may be readily removed when desired, and at a minimum expense.

What I claim is:

In an engine of the class described, the combination with a casing, having an expansion chamber formed by disposing a portion of the peripheral wall eccentrically to the axial plane of the casing, one end wall of the expansion chamber being horizontally disposed and means to direct the propelling medium into said expansion chamber; of a piston rotatably mounted in said casing, said piston having channels in the faces thereof and slots in its peripheral edge, rings on the walls of said casing adapted to enter said channels and prevent vibration of the piston, blades adapted to be seated in said slots and moved longitudinally therein, springs interposed between the inner ends of said slots and the blades, whereby said blades will be moved outwardly and into engagement with the peripheral wall of the expansion chamber, whereby the propelling medium will engage the extended blades and cause the piston to rotate.

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

FRANK E. PENINGTON.

Witnesses:

L. A. MERIWETHER,

FLAVIUS TOSSEY.