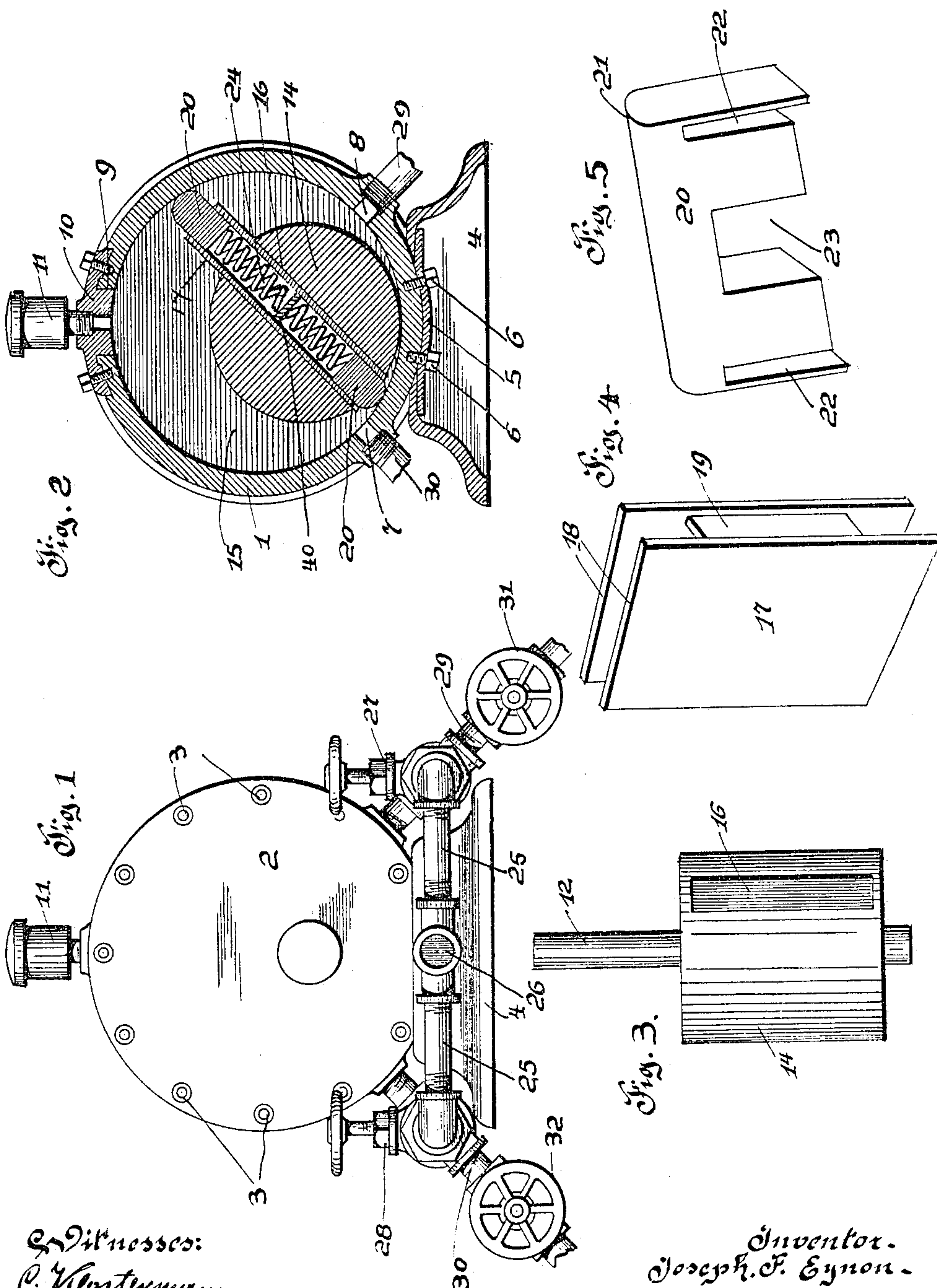


No. 818,756.

PATENTED APR. 24, 1906.

J. F. EYNON.
ROTARY ENGINE.

APPLICATION FILED JAN. 22, 1906.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOSEPH F. EYNON, OF EDNA, PENNSYLVANIA.

ROTARY ENGINE.

No. 818,756.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed January 22, 1906. Serial No. 297,188.

To all whom it may concern:

Be it known that I, JOSEPH F. EYNON, a citizen of the United States of America, residing at Edna, in the county of Westmoreland and State of Pennsylvania, have invented certain new and useful Improvements in Rotary Engines, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in rotary engines; and the invention has for its primary object to provide a simple and inexpensive engine capable of producing a maximum amount of power from a minimum expenditure of steam. To this end I have dispensed entirely with cylinders wherein reciprocating pistons are employed for driving a shaft and have devised radially-reciprocating blades, which are carried by a shaft and driven within a confined space, such as a cylinder, by the steam or air admitted to the cylinder.

20 The detail construction of my improved rotary engine will be hereinafter more fully described and claimed, and, referring to the drawings accompanying this application, like numerals of reference designate corresponding parts throughout the several views, in which—

30 Figure 1 is an end view of my improved engine. Fig. 2 is a cross-sectional view of the same. Fig. 3 is a plan of a rotary blade-head used in connection with the engine. Fig. 4 is a perspective view of a blade-casing, and Fig. 5 is a perspective view of one of the blades.

40 To put my invention into practice, I construct the engine of a cylinder 1, having detachable end plates 2 2, which are secured to the cylinder, as at 3. The cylinder is supported upon a foundation structure 4, which is secured to the cylinder by a plate 5, held in engagement with the cylinder by screws 6 6. The cylinder upon each side of the foundation is provided with a port 7 and a port 8, the port 7 serving as an inlet-port, while the port 8 serves as an exhaust-port, and vice versa, as will be presently described in the general operation of the engine. The top of the cylinder is provided with a central opening 9, which is normally closed by a plate 10, carrying a lubricating-receptacle 11, this lubricant-receptacle being adapted to lubricate the interior of the cylinder 1 and reduce the

friction of the movable parts thereof to a minimum.

55 In the end plates 2 2 is journaled a shaft 12, which is arranged eccentrically relative to the cylinder, and by providing said shaft with a blade-head 14 a compartment 15 is formed between the blade-head and the inner walls of the cylinder. The blade-head is provided with a transverse slot 16, and mounted within said slot is a sliding blade-casing 17, said casing consisting of two plates 18 18, which are connected together by intermediate plates 19 19. The intermediate plates 19 19 are connected together by a transverse partition 40, the object of which will be presently described. Slidably mounted between the plates 18 18 of the blade-casing 17 are blades 20 20, said blades having rounded edges 21, while their opposite edges are slotted, as at 22 22, to receive the intermediate plates 19 19 of the blade-casing 17. The same edge of each blade is recessed, as at 23, to house coiled springs 24 24, mounted in the blade-casing 17 between said blades, said springs being adapted to engage the transverse partition 40 to normally retain the blades in extended position in order that their rounded edges 21 may normally engage the inner walls of the cylinder 1.

80 The ports 7 and 8 are connected by pipes 25 25 to a common supply-pipe 26, the pipes 25 25 being provided with controlling-valves 27 and 28. Connected with the pipes leading into the ports 7 and 8 are pipes 29 and 30, these pipes being provided with valves 31 and 32, respectively.

90 Operation: I will first assume that steam or air is being admitted to the port 7, in which instance the valves 32 and 27 are closed, which permits of steam or air passing through the main supply-pipe 26 to the port 7 and exhausting from the port 8 through the valve 31. As the steam or air enters the port 7 it strikes one of the blades 20 and drives said blade, together with the head 14, round within the cylinder 1, the blade 20 passing around in the compartment 15 until it passes the port 8, at which time the steam upon the forward side of the blade is permitted to exhaust. As the head 14 revolves the blade-casing coming into contact with the inner wall of the cylinder is moved in the head until the edges of the blade-casing at the lower side of the head are flush with the head, the

edges of the blade-casing at the opposite side of the head being projected outwardly from the head. In the meantime the opposite blade has passed the port 7 and is taking
 5 steam. This operation is continuous as long as it is desired to revolve the shaft 12 in one direction; but should it be desired to reverse the engine the valves 28 and 31 are closed and the valves 27 and 32 opened, which per-
 10 mits of steam entering the port 8 and driving the head 14 and its appurtenant parts in a reverse direction to that heretofore described. The port 7 in this instance serves functionally as an exhaust-port.

15 The tension of the spring 24 is adapted to normally hold the blades 20 20 in engagement with the inner walls of the cylinder 1, and the lubricating-cup 11 of said cylinder is adapted to lubricate the inner walls of the
 20 cylinder and reduce the friction between the blades and said cylinder, at the same time forming a steam-tight connection between the contacting-surfaces of the cylinder and said blades.

25 A balance-wheel may be used in connection with the shaft 12 and numerous other appurtenances which are common to engines and irrelative to my invention.

30 Such changes in the construction and operation of the engine as are permissible by the appended claims may be resorted to without departing from the spirit and scope of the invention.

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

1. A rotary engine embodying a cylinder, detachable end plates, a rotary blade-head eccentrically mounted within said cylinder, a blade-casing carried by said head, spring-pressed blades mounted in said casing and
 40 adapted to engage the inner walls of said cylinder, said cylinder having ports formed therein, communicating with a common supply-pipe, valves controlling said ports, a lubricating-cup carried by said cylinder, sub-
 45 stantially as described.

2. A rotary engine embodying a base, a cylinder, carried by said base, a rotary blade-head eccentrically mounted within said cylinder, a sliding blade-casing mounted in said
 50 head, said blade-casing having a central partition, said blade-casing consisting of parallel plates and intermediately-disposed transverse plates, movable blades engaging the inner walls of said cylinder, said blades being
 55 formed with slots receiving said intermediate plates, said cylinder having ports formed therein, communicating with a common supply-pipe, means to control said ports, sub-
 60 stantially as described.

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

JOSEPH F. EYNON.

Witnesses:

THOMAS F. KING,
 ROBERT T. BOULDIN.