

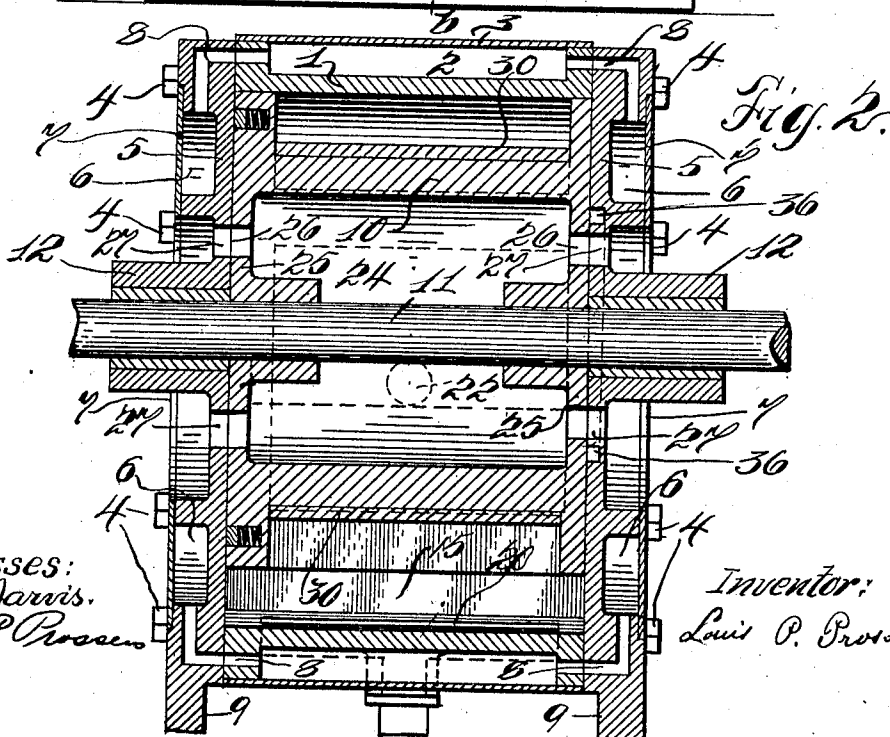
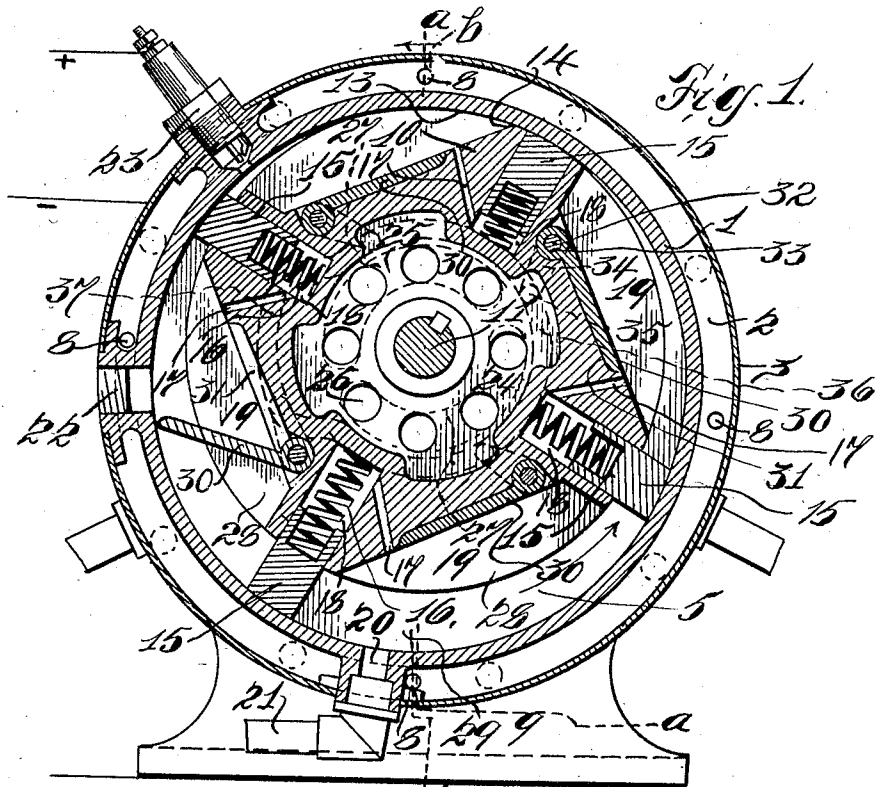
No. 851,962.

PATENTED APR. 30, 1907.

L. P. PROSSEN.
INTERNAL COMBUSTION ROTARY ENGINE.

APPLICATION FILED APR. 4, 1906.

2 SHEETS—SHEET 1.



Witnesses:
E. A. Jarvis.
Louis P. Prossen

Inventor:
Louis P. Prossen

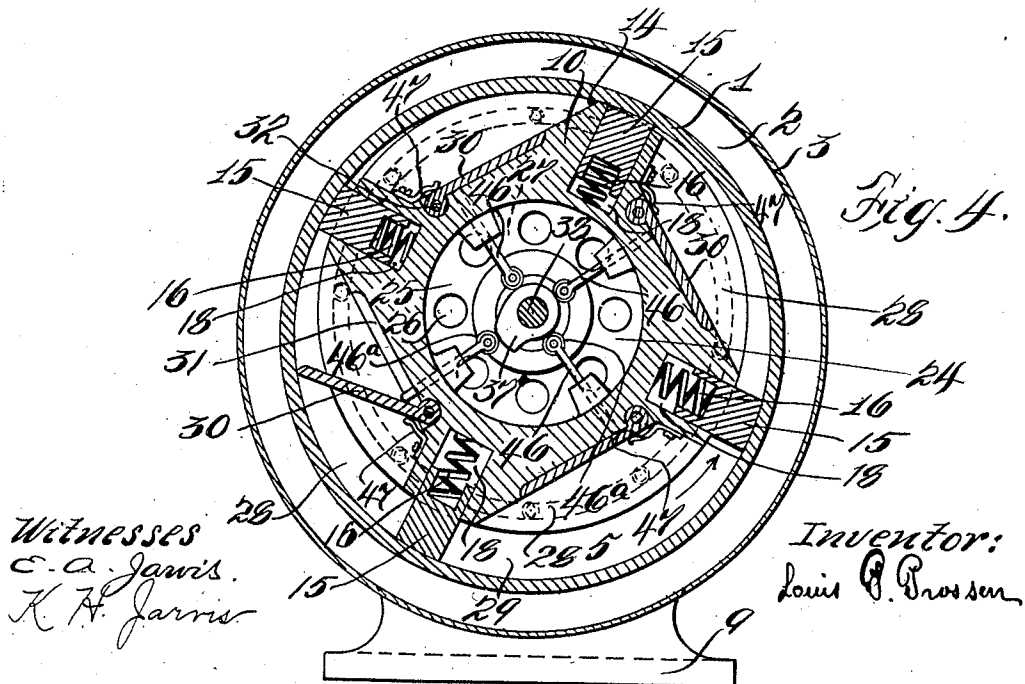
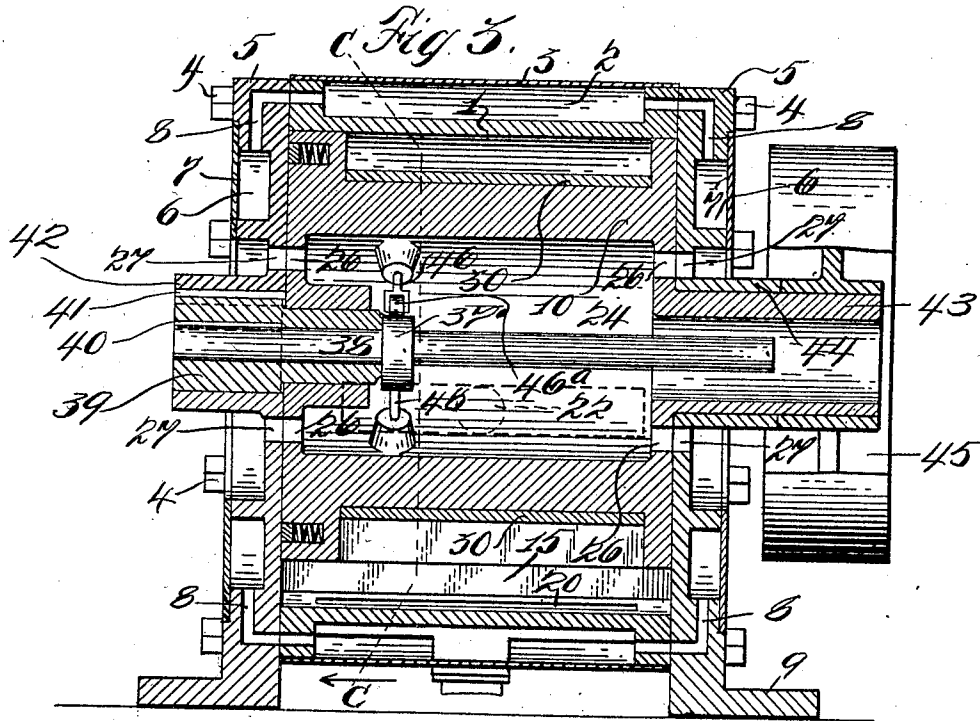
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Witnesses
C. A. Jarvis.
K. H. Jarvis

Inventor:
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UNITED STATES PATENT OFFICE.

LOUIS P. PROSSEN, OF NEW YORK, N. Y.

INTERNAL-COMBUSTION ROTARY ENGINE.

No. 851,962.

Specification of Letters Patent.

Patented April 30, 1907.

Application filed April 4, 1906. Serial No. 309,774.

To all whom it may concern:

Be it known that I, LOUIS P. PROSSEN, a subject of the Emperor of Austria, now residing in New York city, in the county of New York and State of New York, have invented certain new and useful Improvements in Internal-Combustion Rotary Engines, of which the following is a specification.

This invention relates to an internal combustion rotary engine of the compression type.

In the drawings forming part of this specification Figure 1 illustrates a central cross-section of my improved engine. Fig. 2 illustrates a longitudinal central section taken on a line *a-a* in Fig. 1. Fig. 3 illustrates my improved engine with a modified form of operating means for the scavenging device, and is a longitudinal section taken on line *b-b*, Fig. 1; and Fig. 4 is a cross section taken on line *c-c* Fig. 3, looking in the direction of the arrow.

1 indicates the casing of my engine, which can be formed by casting, or be built up. A cast casing is herein illustrated and is provided with an annular recess or channel 2 which, by the aid of the jacket 3 forms a chamber for the circulation of a cooling fluid.

To the casing 1 I fasten, by means of the bolts 4, etc., heads 5, which are recessed, or provided with a channel or recess 6. The channel 6 is covered by a jacket 7. A cooling fluid chamber is thereby formed for the heads 5. The channel or recess 6 is preferably limited to the region of operation of the hot gases, as shown. A passage 8 connects the channel 6 with the channel 2, a thorough circulation being thereby accomplished. The lower end of the heads 5, can terminate in a foot or stand 9 which will support the engine.

Within the casing 1 I rotatably mount a drum 10, the axis or shaft 11 of said drum being eccentrically mounted in the heads 5, the heads being provided with bearings 12. The diameter of the drum 10 is such as to cause the periphery thereof to contact the inner surface 13 of the casing 1 thereby forming an abutment 14 for the explosion to act against. Slidable pistons 15, are carried by the drum 10 and are backed by the springs 16, for the purpose of insuring a quick action upon the part of the pistons 15. Openings 17 are provided to connect the

piston slots 18 with the chambers 19, and thereby cause the pistons 15, to be forced out by air pressure in the event of the failure to act, upon the part of the springs 18. The air pressure also aids the springs to perform their function. An inlet for the passage of an explosive mixture is provided at 20. A pipe 21 connects the said inlet with any suitable mixing device. An exhaust passage 22 is also provided, together with an ignition plug 23.

In order that the drum 10 shall not become overheated I provide a chamber 24 within the same, the end walls 25, of which are perforated as at 26, the said perforations communicating with openings 27, in the heads 5, by this means the chamber 24 is open to the passage of air which can be supplied by a blower or by natural draft, or any other means. Within the periphery of the drum 10 I provide pockets 28, which act as reservoirs for the compressed mixture; and also to increase the capacity of the compression space.

By altering the pockets 28 I am able to increase or decrease the degree of compression, which is obvious. As the drum 10 is eccentric to the axis of the casing it is obvious that the pockets, in turn, will approach the contacting point, or abutment, 14 as the drum revolves; it is due to this action that I am able to compress the mixture.

The intake of the mixture takes place at a position where the drum is farthest from the inner surface of the casing, as at 29. The mixture being taken in at this point, is gradually compressed as the pocket approaches the point 14 where it will attain the maximum. When the pocket passes the point 14 the compressed mixture is ignited by the plug 23; the force of the explosion acts upon one of the pistons 15, and, will drive the drum still farther, or give it another impulse. When the piston reaches the exhaust 22 the burnt gases will escape. During the passage of the drum from the ignition point to the exhaust, another pocket has been compressing, and still another receiving a charge of mixture.

Fig. 1 illustrates the drum at about the ignition point.

As soon as a pocket has exhausted it will commence to receive new mixture.

It will of course be understood that I will employ a suitable timing device for the spark plug; also a suitable source of electrical

power therefor, and a power transmitting means for the shaft. A fly-wheel can also be used, if desirable, as shown.

In order that a thorough exhaust may take place I provide auxiliary scavenging wings 30 which normally lie in recesses 31 within the pockets 28, 28, 28, 28. The wings are pivotally mounted as at 32, the shaft 33 being provided at one end thereof with an arm 34 the pin 35 of which enters a cam groove 36 formed in one of the heads 5. The groove 36 has a cam portion 37 which is properly positioned with respect to the exhaust period. As the drum is rotated the wings 30 are thrown outwardly, at the proper time, thereby forcing the products of combustion toward the exhaust 22.

In the modified form Figs. 3 and 4 the wings 30 are operated by a cam 37' which is carried by a shaft 38 rigidly held in a bushing 39 by means of the key 40, the bushing being held against rotation by a key 41 which is fitted to the bearing 42; the drum revolves upon the bushing. The drum 10 is fitted with a hollow shaft 43, which is rotatably supported in the bearing 44, and carries a belt pulley 45. In the drum 10 are fitted the plungers 46 which are provided with rollers 46^a which ride upon the cam 37'. The cam 37' is so set that the wings 30 are thrown out at the proper time, the wings being returned by the springs 47.

In other respects the two forms are alike.

What I claim and desire to cover by Letters Patent is:

1. An internal combustion rotary engine comprising a casing, a rotatable drum within said casing provided with pistons, said drum being eccentric to the axis of said casing and adapted to contact the casing at one point thereof, said drum being provided with peripheral pockets, movable scavenging devices in said pockets and between said pistons, means adapted to operate said scavenging devices, an inlet for an explosive mixture, an ignition device, and an exhaust passage.

2. An internal combustion rotary engine

comprising a casing, a rotatable drum within said casing provided with pistons, said drum being eccentric to the axis of said casing and adapted to contact the casing at one point thereof, said drum being provided with peripheral pockets, scavenging wings pivotally mounted in said pockets, means adapted to throw said wings outwardly at a predetermined point during the rotation of said drum, an inlet for an explosive mixture, an ignition device and an exhaust passage.

3. An internal combustion rotary engine comprising a casing, a rotatable drum within said casing provided with pistons, said drum being provided with an interior chamber having no communication with the compression space within said casing, an inlet for cooling medium to said chamber, said drum being provided with peripheral pockets scavenging wings pivotally mounted in said pockets, means adapted to throw said wings outwardly at a predetermined point during the rotation of said drum, an inlet for an explosive mixture, an ignition device, and an exhaust passage.

4. An internal combustion rotary engine comprising a casing, heads for said casing one of which is provided with a cam groove, a rotatable drum in said casing provided with pistons, peripheral pockets in said drum, scavenging wings pivotally mounted in said pockets, means carried by said wings adapted to engage the cam groove in said head whereby said wings are thrown outwardly at a predetermined point, said drum being also provided with an interior chamber, means adapted to permit of the introduction of a cooling medium to said chamber through said heads, an inlet for an explosive mixture, an ignition device, and an exhaust passage.

Signed at New York city in the county of New York and State of New York this 17th day of March A. D. 1906.

LOUIS P. PROSSEN.

Witnesses:

EDWARD A. JARVIS,
FELIX P. PROSSEN.