No. 880,333. PATENTED FEB. 25, 1908.

W. SEIBERT.

ROTARY ENGINE.

APPLICATION FILED DEC. 5, 1907.

2 SHEETS—SHEET 1.

Fig. 1.

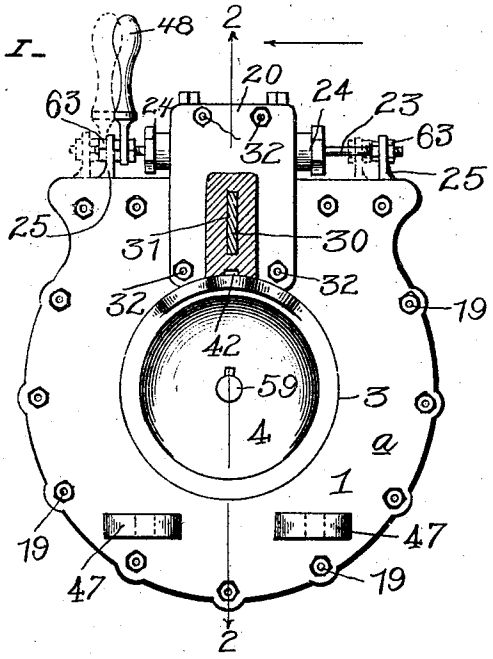
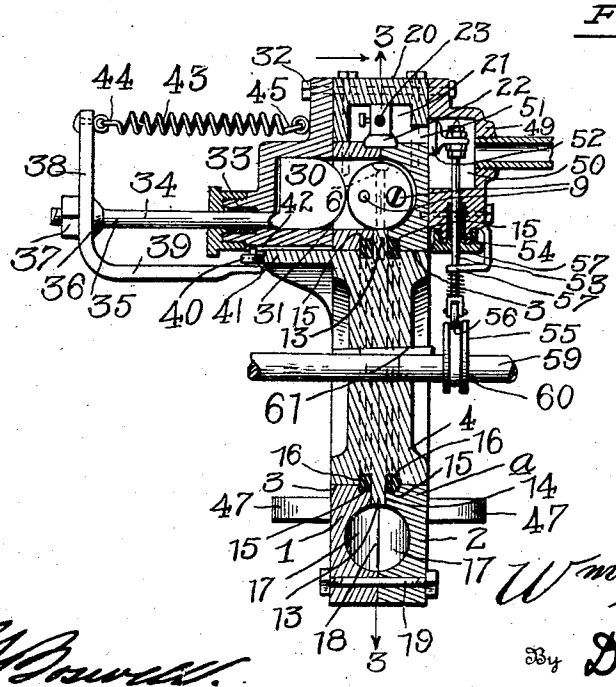


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

Fig. 3.

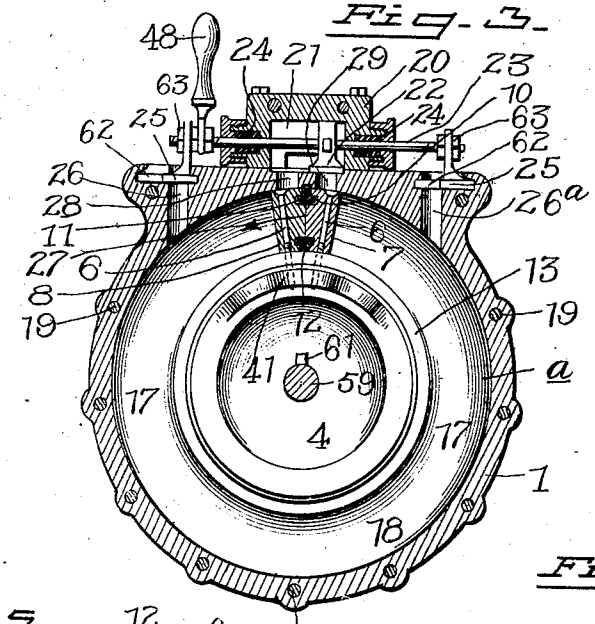
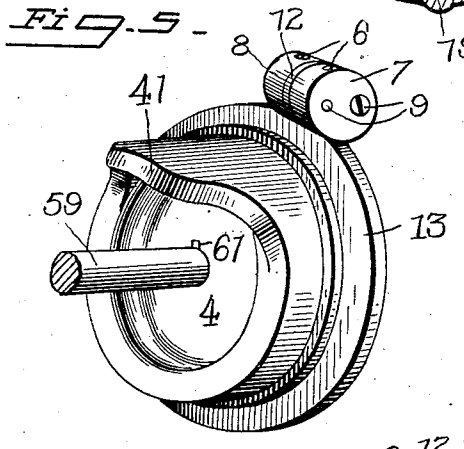


Fig. 4.

Fig. 5.



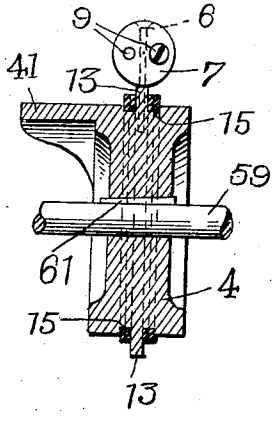
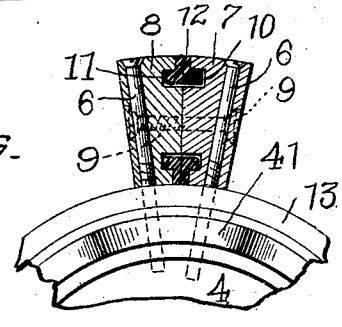


Fig. 6.



Witnesses

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ROTARY ENGINE.

No. 880,333. Specification of Letters Patent. Patented Feb. 25, 1908.

Application filed December 5, 1907. Serial No. 405,255.

To all whom it may concern:

Be it known that I, WILLIAM SEIBERT, a citizen of the United States, residing at Erie, in the county of Neosho and State of Kansas, have invented a new and useful Rotary Engine; 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.

This invention pertains to a new and useful rotary engine and the invention in its broadest aspect aims as its primary and essential object to provide a device of this character by which the inlet for the steam is controllable by a sliding valve, which is controlled by a rotatable head.

The invention aims as a further object to provide a steam gate which opens and closes, in front and the rear of the piston carried by the rotatable head; this steam gate and sliding valve are simultaneously operated and controllable by the rotatable head, so as the steam will be admitted in the rear of the piston, at the time when the steam gate is nearing a closed position, in the rear of the said piston.

A further object of the invention is to provide a device of this type, having reversible means for changing the entrance of steam, whereby the rotatable head is reversed in its movement, as will be clearly manifest.

This invention is provided with an exhaust port, and the invention directs as a further object to provide a device of this character, which is simple and efficient in construction, as well as being inexpensive to manufacture.

This invention comprises further objects and combinations of elements which will be hereinafter more fully described, shown in the accompanying drawings, and the novel features thereof will be pointed out by the appended claims.

The features and elements and arrangement thereof, for accomplishing the object of the invention, may be changed and varied, that is to say, in a practical application of the device, with an understanding that the changes and variations accruing from said application are limited to the scope of the appended claims.

To obtain a full and correct understanding of the details of construction, combinations of features, elements and advantages, reference is to be had to the hereinafter set forth description and the accompanying drawings in connection therewith, wherein

Figure 1 is an elevation of the improved rotary engine. Fig. 2 is a sectional view upon line 2—2 of Fig. 1, looking in the direction of the arrow, illustrating the steam gate, the steam chamber, and the steam inlet and its sliding valve. Fig. 3 is a sectional view on line 3—3 of Fig. 2. Fig. 4 is an enlarged detail of the rotary head and its piston. Fig. 5 is a perspective view of the said rotary head and its piston. Fig. 6 is an enlarged sectional view of the piston, showing the manner of fastening the same to the rotary head.

Like reference characters are used for indicating similar features and elements throughout the several illustrations.

In regard to the accompanying drawings wherein similar reference characters indicate corresponding parts in the several illustrations, by figures, *a* designates the casing of the rotary engine, which comprises two disk sections 1 and 2, which are centrally bored, as at 3, so as when placed in registration, the said bored portion will provide a cylindrical space in which the rotary head 4 rotates, with which is carried the piston 5, which piston is fastened to said rotary head by means of screws 6, as clearly shown in Fig. 6. This piston comprises two members 7 and 8, which are held together by means of the screw 9, as clearly shown in Fig. 6. These two members are provided with annular recesses 10 and 11, upon the adjacent faces thereof, and when placed in registration, said recesses receive and hold a suitable packing 12, as also clearly shown in Fig. 6. The said rotary head is held in said space by means of the annular rib 13, which rotates in a contracted portion 14 of said casing, as clearly shown in Fig. 2. Adjacent to this contracted portion 14, the said sections 1 and 2 are provided with annular recesses 15, in which the packing 16 carried by the rotary head moves; this packing is also seated in annular recesses formed in the said head adjacent to the annular rib 13, as shown clearly in Figs. 4 and 5.

At a diameter greater than the diameter of the centrally bored portions of the sections 1 and 2, the said sections upon their adjacent faces, are provided with concentric recesses 17, which are semicircular in cross section, and when the sections are placed

against one another, the said recesses 17 form a steam chamber 18, in which the piston carried by the rotatable head travels, as will be clearly manifest. The said sections 1 and 2 are held adjacent to one another by any suitable means, preferably bolts 19, as shown in the drawings. Fixed upon the upper portion of the said casing is a casing 20, which forms a chamber 21, in which the reversible valve 22 is operated; this valve is movable with the shaft 23, which reciprocates through packing boxes 24, as clearly shown in Fig. 3. Carried at each end of the shaft 23 are sliding valves 25, which are adapted to close the exhaust ports 26 and 26^a, which communicate with the said steam chamber. When the piston is moving in the direction indicated by the arrow 27, the port 26^a will act as the exhaust for the steam, and to reverse the movement of said piston, the said shaft 23 is reciprocated, thus closing port 26^a and opening port 26, which will allow the steam to exhaust through said port 26. In changing the exhaust, the said valve 22 closes port 28, and opens port 29, which changes the admission of steam upon the opposite side of the steam gate 30, which will reverse the movement of said piston.

The steam gate 30 is of a sliding type, and is movable within the chamber 31 provided upon the section 1 of the casing; this chamber is formed by a casing, which laterally projects from the said section 1, and is held thereto by several bolts 32, as clearly shown in Figs. 1, 2 and 3. The said casing in which the steam gate operates, is provided with a stuffing box 33, through which the rod 34 reciprocates, which rod 34 is integral with the said steam gate; fixed at the end 35 of said rod, by means of a shoulder 36 and the nut 37, is an angled portion 38 of a member 39, at the inner end of which an anti-frictional roller 40 is provided, which coöperates with the cam projection 41 carried integrally with the said rotatable head, as clearly shown in Figs. 1 and 2. The journal upon which the said anti-frictional roller is mounted is slightly extended, and is guided in an elongated recess 42, formed upon the lower portion of the chamber in which the said steam gate reciprocates, for the purpose of insuring an even movement for the steam gate, as indicated at 42 in Figs 1 and 2 of the drawings; this elongated recess is simply rectangular in cross section, as further shown in Fig. 1. From the above description in connection with the annexed drawings, it will be plainly seen how the said sliding gate is opened and closed, in front and rear of the said piston, as it rotates in the steam chamber. The said cam projection operates the said gate, so as to open the same against the tension of the spring 43, one end 44 of which is fastened to the angled portion of the member 39, while the end 45 is fastened to the side of the casing, in which the said gate operates. By the use of the said spring, it will be understood how the steam gate is closed, after being opened by the said cam projection. The sections 1 and 2 are provided with ears or lugs 47, by which the entire casing formed by said sections, are secured to any suitable support, such as for instance the framing or running gear of an automobile, as will be manifest. The shaft 23 is provided with a handle or grip 48, by the use of which, the said shaft is reciprocated.

Secured to the side, and adjacent to the upper part of the section 2, is a casing 49, forming a steam chest 50, which communicates with the chamber 21, by means of the passage 51, which is alternately opened and closed by the sliding valve 52, which reciprocates within said steam chest, as clearly shown. This valve 52 is connected to a reciprocatory rod 53, which moves through a stuffing box 54, and is operated by a cam 55, as clearly shown. The said rod 53 is provided at its lower end with an anti-frictional roller 56, which engages said cam 55. The said rod 53 moves through suitable bearings 57, between one of which and a shoulder 58 of said rod, a spring is disposed, so as to continually hold said anti-frictional roller 56 in contact with said cam. The said cam 55 is keyed to the shaft 59, as is also the rotatable head, as at 60 and 61, so as to cause the said head, shaft and cam to rotate as one body.

The valves 25 are mounted to reciprocate in recesses or guides 62 of the said casing, as clearly shown in Fig. 3. The said handle or grip 48 and the valves 25 are fastened to the shaft 23 by means of nuts 63, as clearly shown in Fig. 3.

From the foregoing, the essential features, elements and the operation of the device, together with the simplicity thereof, will be clearly apparent.

Having thus fully described the invention, what is claimed as new and useful by the protection of Letters Patent, is:—

1. In a rotary engine; a casing having a steam chamber; a head rotatable within the casing and provided with a piston designed to travel within the steam chamber; an inlet; an exhaust for the steam; said inlet being controlled by a sliding valve; a reciprocatory steam gate adapted to open and close in front and in rear of the said piston and provided with an angled portion and a member; said gate and sliding valve being controllable by the rotatable head, said casing being formed with means to guide said member as the steam gate operates.

2. In a rotary engine; a casing having a steam chamber; a head rotatable within the casing and provided with a piston designed to travel within the steam chamber; an inlet; an exhaust for the steam; said inlet being controlled by a sliding valve; a reciprocatory

steam gate adapted to open and close in front and in rear of the said piston and provided with an angled portion and a member; said gate and sliding valve being controllable by the rotatable head; said casing having an elongated recess to guide said member as the steam gate operates and reversible means for the engine.

3. In a rotary engine; a casing having a steam chamber; a head rotatable within the casing and provided with a piston designed to travel within the steam chamber; an inlet; an exhaust for the steam; said inlet being controlled by a sliding valve; a reciprocatory steam gate adapted to open and close in front and in rear of the said piston and provided with an angled portion and a member; said gate and sliding valve being controllable by the rotatable head; said casing having an elongated recess to guide said member as the steam gate operates and a reversible valve for the engine.

4. In a rotary engine; a casing comprising a pair of disks centrally bored, whereby when placed adjacent to and engaging one another a cylindrical open ended space is formed; said casing having a steam chamber; a rotatable head which is visible from the exterior thereof and movable within the space and provided with a piston designed to travel in said steam chamber; an inlet; reversible means therefor; reciprocating means to open and close in front and in rear of the said piston said casing having formed therein an elongated recess to assist in guiding said reciprocating means; a sliding valve for the inlet; said reciprocating means and the sliding valve being simultaneously controllable by the rotatable head.

5. In a rotary engine; a casing comprising a pair of disks centrally bored whereby when placed adjacent to one another a cylindrical open ended space is formed; said casing having a steam chamber; a rotatable head mounted in said space and provided with a piston; an inlet; reversible means therefor; reciprocating means to open and close in front and rear of said piston; said casing having means to coöperate with the reciprocating means to insure and guide said reciprocating means so as to cause the same to have an even movement; a sliding valve for the inlet; said reciprocating means and the sliding valve being simultaneously controllable by the rotatable head.

6. In a rotary engine; a casing having a steam chamber and provided with a space; a rotatable head mounted in the space and provided with a piston; an inlet; an exhaust; reversible means for the inlet and the exhaust; reciprocating means adapted to open and close in front and in rear of said piston; said casing having means to insure an even movement for the reciprocating means by cooperating therewith; said reciprocating means and the sliding valve being controllable by the rotatable head.

7. In a rotary engine; a casing having a steam chamber; a rotatable head mounted therein and provided with a piston; an inlet and an exhaust for the steam; reversible means therefor; said inlet being controlled by a sliding valve; a reciprocatory steam gate having an angled member provided with an antifrictional roller; said rotatable head having a cam projection to coöperate with the roller and the angled member to operate said gate; a sliding valve for the inlet controllable by the rotatable head.

8. In a rotary engine; a casing having a steam chamber; a rotatable head mounted therein and provided with a piston; an inlet and exhaust for the steam; reversible means therefor; said inlet being controlled by a sliding valve; a reciprocatory steam gate having an angled member provided with an anti-frictional roller; said rotatable head having a cam projection to coöperate with the roller and the angled member to operate said gate; said casing having means to coöperate with the inner portion of said angled member so as to insure an even movement of the said gate and a sliding valve for the inlet controllable by the rotatable head.

9. In a rotary engine; a casing having a steam chamber; a rotatable head mounted therein and provided with a piston; an inlet and exhaust for the steam; reversible means therefor; said inlet being controlled by a sliding valve; a reciprocatory steam gate having an angled member provided with an antifrictional roller; said rotatable head having a cam projection to coöperate with the roller and the angled member to operate said gate; said casing having means to coöperate with the inner portion of said angled member so as to insure an even movement to the said gate and a sliding valve for the inlet; said rotatable head having a shaft; a cam keyed thereto; said sliding valve having a rod provided with a roller to co-act with said cam.

10. In a rotary engine; a casing having a steam chamber and provided with an open ended cylindrical space; a rotatable head mounted in said space and provided with a piston; an inlet; an exhaust for the steam; reversible means therefor; said inlet being controlled by a sliding valve; a reciprocatory steam gate having a rod provided with an angled member; said angled member having an inner upwardly positioned extension provided with an anti-frictional roller; said gate being actuated by a spring for closing the same; said rotatable head having a cam projection to coöperate with the roller and the angled member to operate said gate; said casing having means to coöperate with the inner portion of the said angled member so as to insure an even movement to the said gate and a sliding valve for the inlet; said rotatable

head having a shaft; a cam keyed thereto; said sliding valve having a rod provided with a roller to coact with said cam.

11. In a rotary engine; a casing having a steam chamber and provided with an open ended cylindrical space; a rotatable head mounted in said space and provided with a piston; an inlet; an exhaust for the steam; reciprocatory valves for reversing the inflow and exhaust for the steam; said inlet being controlled by a sliding valve; a reciprocatory steam gate having a rod provided with an angled member; said angled member having an inner upwardly positioned extension provided with an anti-frictional roller; said gate being actuated by a spring for closing the same; said rotatable head having a cam projection to coöperate with the roller and the angled member to operate said gate; said casing having means to coöperate with the inner portion of the said angled member so as to insure an even movement to the said gate and a sliding valve for the inlet; said rotatable head having a shaft; a cam keyed thereto; said sliding valve having a rod provided with a roller to coact with said cam.

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

WILLIAM SEIBERT.

Witnesses:
F. T. CAMBERN,
R. C. JOHNSON.