No. 792,625. PATENTED JUNE 20, 1905.

K. A. A. STAAHLGREN.

ROTARY ENGINE.

APPLICATION FILED JULY 2, 1904.

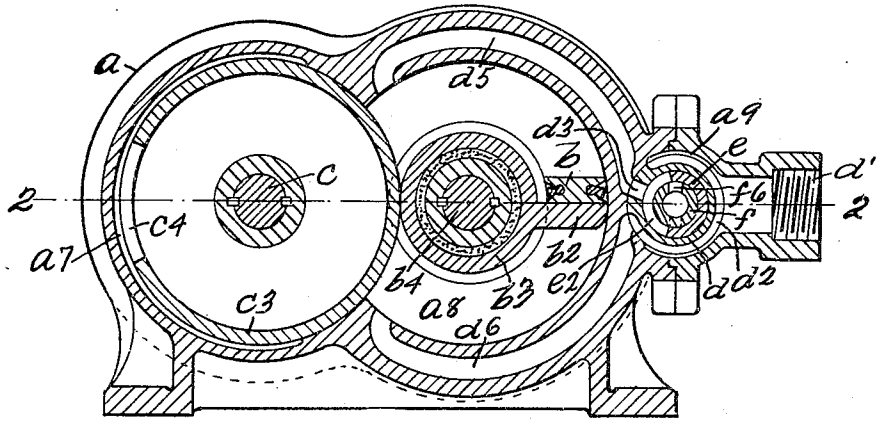
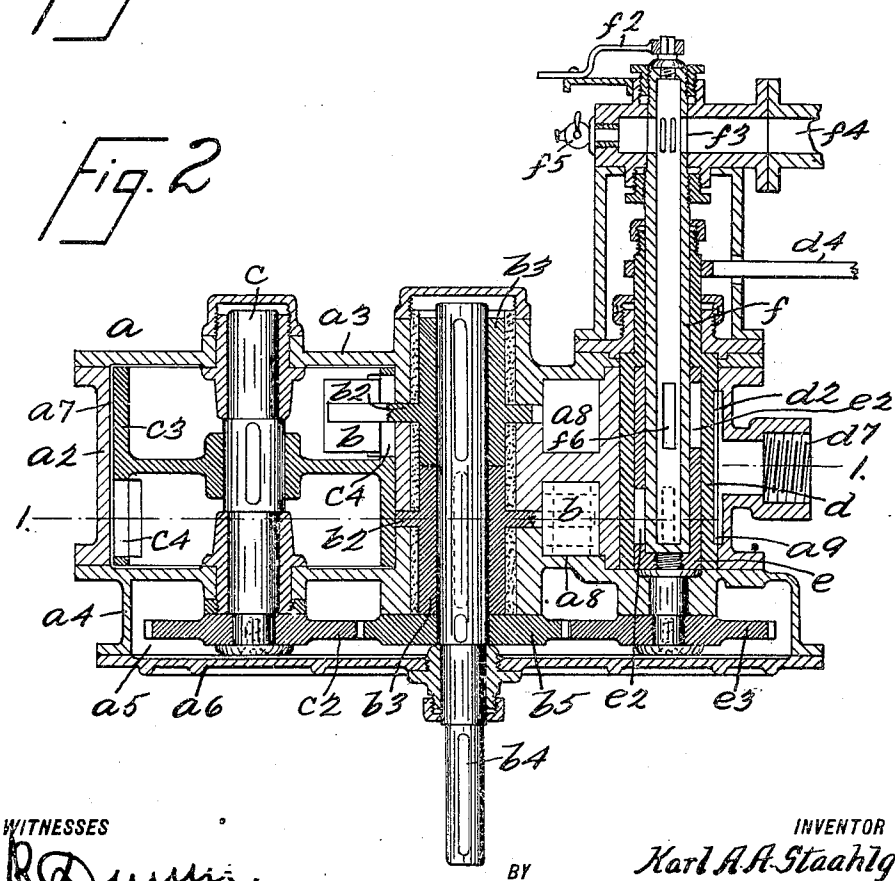


Fig. 1.

Fig. 2



WITNESSES

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No. 792,625. Patented June 20, 1905.

UNITED STATES PATENT OFFICE.

KARL A. A. STAAHLGREN, OF NEW YORK, N. Y., ASSIGNOR, BY DIRECT AND MESNE ASSIGNMENTS, TO THE ENGINEERING & DEVELOPMENT COMPANY OF NEW YORK, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 792,625, dated June 20, 1905.

Application filed July 2, 1904. Serial No. 215,089.

To all whom it may concern:

Be it known that I, KARL A. A. STAAHLGREN, a subject of the King of Denmark, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Rotary Engines, of which the following is a specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide a rotary engine which takes full advantage of the expansive force of steam or other motive fluid, a further object being to provide such an engine which may be reversed at will by simply moving a suitable lever and in which the amount of motive fluid admitted to the same may be accurately gaged, thereby obtaining the greatest power from the least amount of steam or other fluid, and a still further object being to provide such an engine which is small, compact, powerful, economical in construction and operation, and well adapted for the purpose for which it is intended.

The invention is fully described in the following specification, of which the accompanying drawings form a part, in which the separate parts thereof are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a vertical section of an engine constructed according to my invention, taken on the line 1 1 of Fig. 2; and Fig. 2, a horizontal section thereof on the line 2 2 of Fig. 1.

In the drawings forming part of this specification I have shown a casing a, comprising a body portion a^2, front member a^3, and rear member a^4, the member a^4 being in turn provided with a supplemental casing a^5 and cover a^6 therefor, and the casing a is formed into three intersecting transverse circular chambers a^7, a^8, and a^9, there preferably being a plurality of the chambers a^8, as indicated in Fig. 2, and these chambers a^8 are enlarged at their peripheries to form piston-chambers and in which the pistons b are adapted to move.

The pistons b are mounted upon disks b^2, filling the narrow portions of the chambers a^8, and are in turn mounted upon sleeves b^3, secured to a shaft b^4, to which, within the supplemental casing a^5, is also secured a gear-wheel b^5, and each of the piston-disks b^2 carries but one of the pistons b, said pistons being oppositely arranged, as clearly shown, and the pistons b may be provided with any suitable packing, as will be understood.

Passing centrally through the chamber a^7 is a shaft c, provided with a gear-wheel c^2 of the same size as the gear-wheel b^5, with which it is engaged, and secured to the shaft c is an abutment c^3, closely engaging the sides of the chamber a^7, said abutment being provided with a recess c^4 for each of the pistons b, and which are adapted to pass thereinto, and because of the gear-wheels b^5 and c^2 the pistons b always enter the corresponding recess c^4.

Rotatably mounted in the chamber a^9 is a tube d, provided with a recess d^2, passing almost around the outside thereof, and said tube d is also provided with a port d^3, adapted to communicate with the corresponding piston-chamber, said tube being provided with an external handle d^4, which upon being moved revolves the tube d until the port d^3 communicates with one of two passages passing around the piston-chamber a^8 and communicating with opposite sides thereof, and when the port d^3 is so communicated with one of the passages d^5 or d^6 the recess d^2 communicates with the other one thereof and with the exhaust-pipe d^7 and the outer air.

Within the tube d is a sleeve e, provided with ports e^2, passing partially around the same, and each of which is opposite the corresponding port d^3 and piston-chamber a^8, and to the end of the sleeve e is secured a gear-wheel e^3, similar to and engaging the gear-wheel b^5, and the sleeve e therefore rotates at the same speed as the pistons and the shaft b^4, and within the sleeve e and tube d is a pipe f, which extends outside of the casing a and to the closed outer end of which is secured a lever or other suitable device f^2, by which the pipe f may be revolved, and adjacent to the outer end of the pipe f are a

exhaust-port for communication with the opposite side of said piston, substantially as shown.

6. In a rotary engine, an abutment-chamber, an abutment rotatably mounted therein and provided with alternately oppositely arranged recesses, a plurality of piston-chambers intersecting said abutment-chamber, a piston-disk in each of said piston-chambers, a piston on each of said piston-disks and adapted to enter the corresponding recess of said abutment, a valve controlling the admission of motive fluid to each of said piston-chambers, intermittently, means for rotating said pistons, abutment and valve, correspondingly, and means for rotating said pistons, abutment and valve in opposite directions, alternately, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 30th day of June, 1904.

KARL A. A. STAAHLGREN.

Witnesses:

E. H. TUSKER,

J. R. QUINN.