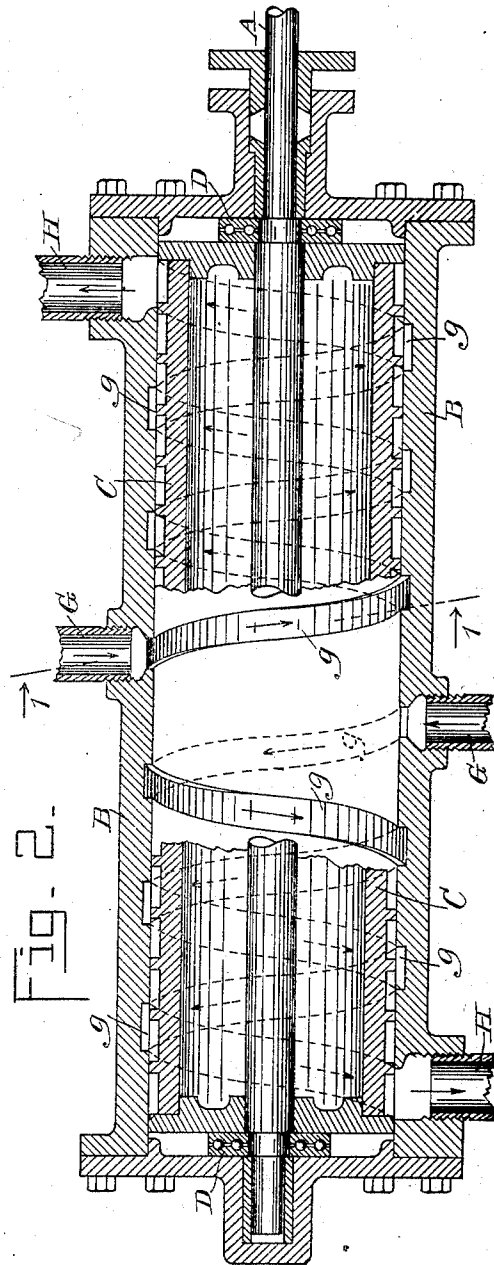
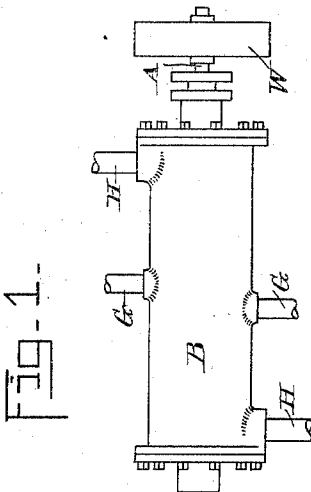
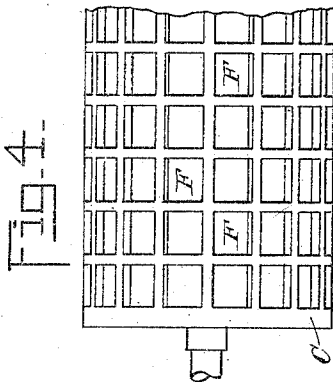
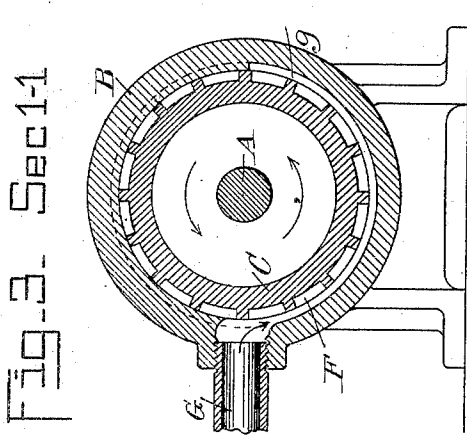


(No Model.)

J. F. McELROY.
ROTARY ENGINE.

No. 503,550.

Patented Aug. 15, 1893.



Witnesses:
John W. Fisher
John N. Mayer

Inventor,
James F. McElroy.
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Attorneys

UNITED STATES PATENT OFFICE.

JAMES F. MCELROY, OF ALBANY, NEW YORK, ASSIGNOR TO THE CONSOLIDATED CAR-HEATING COMPANY, OF WHEELING, WEST VIRGINIA.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 503,550, dated August 15, 1893.

Application filed April 17, 1893. Serial No. 470,603. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. MCELROY, a citizen of the United States, residing in the city and county of Albany, State of New York, have invented a new and useful Improvement in Rotary Engines, of which the following is a specification.

My invention relates to improvements in steam turbines or rotary engines; and the object of my invention is to provide a turbine operated by steam or compressed air in which the propelling agent is brought into contact with a movable cylinder containing a number of pits or pockets in its circumference, its passage from its entrance into the engine being a spiral one from near the center of the cylinder toward each end. I accomplish this object by means of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a plan. Fig. 2 is a horizontal section. Fig. 3 is a cross section along the lines 1—1 on Fig. 2, and Fig. 4 is a detail view of a part of the movable cylinder.

Similar letters refer to similar parts throughout the several views.

To the shaft A suitably mounted within the shell B, I key the cylinder C. Each end of the shaft A is placed within suitable bearing D provided with a double row of ball bearings resting upon a suitable support in the end of the shell B operated upon by a suitable collar *e* secured to the shaft A. The circumference of the movable cylinder C is provided with numerous pockets or pits F cut into the face of the cylinder; the portions of the cylinder separating the various pits or pockets fitting closely within the shell B. The interior surface of the shell B is provided with a spiral groove *g* extending from about midway between the ends of the shell toward each end; said spiral groove *g* communicates about midway between the ends of the shell with an inlet pipe G G and at the end of the shell with an exhaust pipe H H. At the end of the shaft A, I place the drive wheel W.

The operation of my engine is apparent. The steam or compressed air enters the shell through the pipe G passing into the spiral groove *g* and enters and strikes against the sides of the pits or pockets F in the movable cylinder C and follows around the cylinder into the groove *g* and in the pockets F tending continually to force the movable cylinder around and to work its way toward the end of the cylinder, where it escapes through the exhaust pipe H.

For the purpose of providing for the expansion of steam, I increase the size of the groove *g* as it approaches the end of the shell. Thus it is apparent that the steam or compressed air entering through each pipe G G passing toward each end, will revolve the movable cylinder C in the same direction and will tend to balance the engine.

I do not limit myself to the spiral groove extending several times around the shell, for I may construct it with but a single turn. It is also apparent that I can operate my engine by causing the propelling agent to enter at the end of the shell and exhaust at the opposite end instead of entering at about midway between the ends, but

What I do claim as my invention, and desire to secure by Letters Patent, is—

In a rotary engine, the combination of a shaft, a cylinder secured thereto, a series of pits or pockets in the circumference of said cylinder, a shell enveloping said cylinder, a spiral groove cut in the inner surface of said shell, an inlet pipe communicating with said groove about midway between the ends of the shell, an exhaust pipe communicating with said groove near the end of said shell, substantially as described and for the purpose set forth.

JAMES F. MCELROY.

Witnesses:

EDWIN A. SMITH,
WILLIAM P. EDDY.