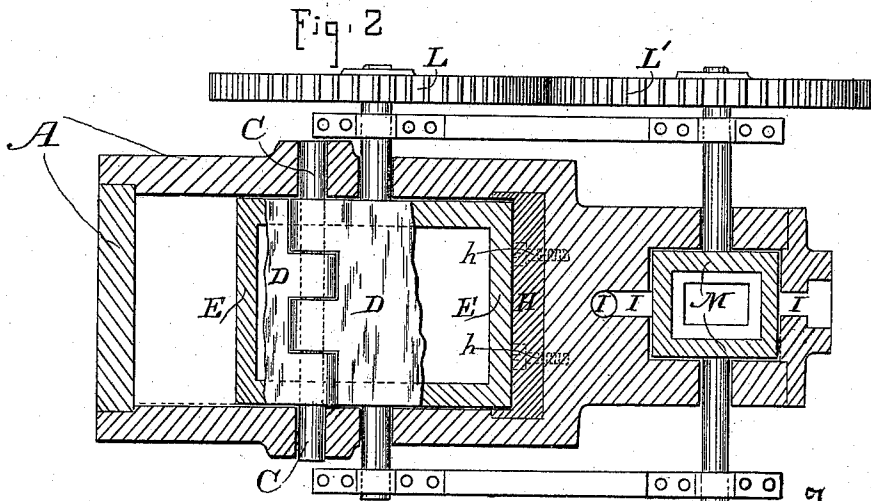
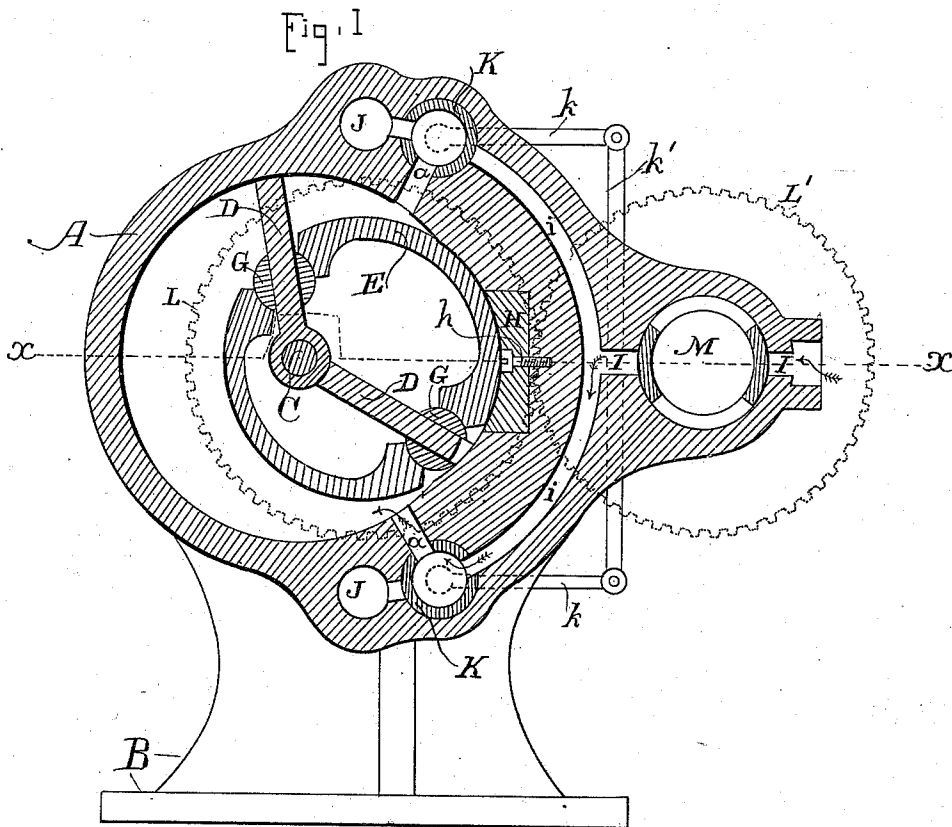


(No Model.)

J. D. KELLER.
ROTARY ENGINE.

No. 550,721.

Patented Dec. 3, 1895.



Witnesses,
R. H. Nurse
J. A. Boyless

Inventor
John D. Keller
By Dewey & Co. atty

UNITED STATES PATENT OFFICE.

JOHN D. KELLER, OF SANTA CLARA, CALIFORNIA, ASSIGNOR OF ONE-HALF
TO OTTO LEU, OF SAME PLACE.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 550,721, dated December 3, 1895.

Application filed April 4, 1895. Serial No. 544,465. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. KELLER, a citizen of the United States, residing at Santa Clara, Santa Clara county, State of California, have invented an Improvement in Rotary Engines; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of rotary engines or rotary pumps in which radially-slidable pistons revolving concentrically with the interior of the shell are operated by an eccentrically-located cylinder which forms an abutment at one side with the interior of the shell and a steam or water space on the other side.

My invention consists of the construction, arrangement, and combination of devices, which I shall hereinafter fully describe and claim.

The object of my invention is to provide a simple and effective rotary engine or rotary pump.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a vertical section of my engine. Fig. 2 is a horizontal section.

A is the shell of my engine, mounted upon or formed with a suitable base B. Through the center of this shell passes a shaft C, on which is pivotally mounted a piston D. There may be one of these pistons or a plurality of them, and for the sake of illustration I have here shown two. They extend in the radial planes of the shell and reach from the center to its interior peripheral surface.

Mounted upon an axis eccentric to the shell is a cylinder E, adapted to rotate within said shell. This cylinder encircles the shaft C, which forms the center of the shell, and at one side said cylinder forms an abutment with the interior of the shell, while at the other side it leaves a steam or water space.

The steam entering the inlet side of the shell encounters the piston and drives it around, said piston carrying the eccentric cylinder with it, which constantly forms the proper abutment behind the steam, until the piston passing the discharge or exhaust side, the steam passes out. Now in this movement of the cylinder sufficient play must be provided

between its wall and the pistons to permit it to accommodate itself to the various positions to which its turning carries it with respect to the pistons, and in order to accomplish this I seat in said wall oscillating or rocking bearings G, through which the pistons freely pass. By these means even though the pistons and the cylinder be eccentric with relation to each other they may revolve freely in connection.

The wear at the abutment between the cylinder and the shell is very great and needs to be constantly taken up and compensated for. To effect this result I form the interior of the shell with a recess or cavity, into which I insert a wearing abutment-piece H and bolt it in by a bolt h. This wearing piece, when it becomes worn, may be loosened and a suitable washer placed behind it; or, if necessary, it may be removed entirely and another substituted.

In order to reverse the engine I have the following construction: I is the inlet-passage for the steam, and J are two exhaust-passages, one on either side. The main inlet-passage has branches i, which communicate each with a passage a to the interior of the shell, one on each side. These communications are controlled each by its own valve K, and said valves also control the communications between said passages and the exhausts. The two valves are connected by cranks k and connecting-link k', and they are so arranged each to control its own communications in such a manner as to admit the steam on one side and exhaust it from the other or the reverse.

It is obvious that this engine may be used as a pump.

The cut-off mechanism consists of intermeshing gears L and L', one being on the shaft center of the cylinder E and the other adapted to actuate the cut-off valve M in the inlet-passage I, and said valve being arranged to cut the steam off when the pistons have made about two-thirds of their stroke.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a rotary engine, a shell having a main inlet passage with branches i leading therefrom and communicating at either side of the interior of the shell through passages a, the

separate exhaust passages, valves in said
branches controlling the exhaust passages
and the passages leading to the interior of the
shell, a cylinder within the shell forming an
5 abutment at one side therewith, and a steam
space on the other side, a sliding and adjust-
able connection between the piston and cyl-
inder, a main cut off valve in the steam inlet
and the intermeshing gears one operating the

cut-off valve and the other on the shaft cen- 10
ter of the rotatable cylinder.

In witness whereof I have hereunto set my
hand.

JOHN D. KELLER.

Witnesses:

CHAS. E. NAYLOR,
W. O. WATSON.