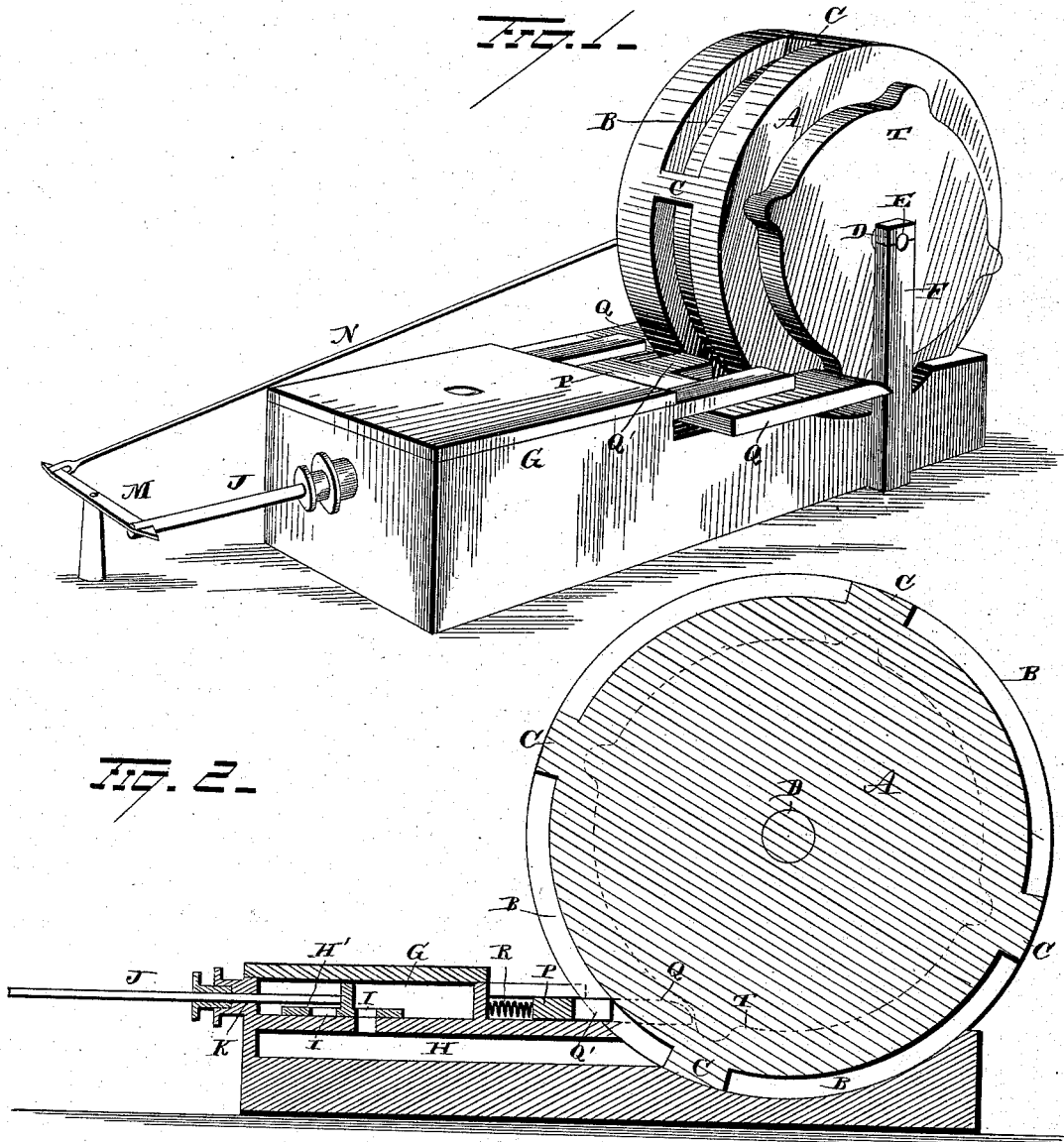


(No Model.)

C. R. HARVIN.
ROTARY ENGINE.

No. 322,179.

Patented July 14, 1885.



WITNESSES
Geo. F. Sawmings
W. A. Ruff

INVENTOR
Charles R. Harvin
By *Seymour S. Sengall*
ATTORNEY

UNITED STATES PATENT OFFICE.

CHARLES R. HARVIN, OF MANNING, SOUTH CAROLINA.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 322,179, dated July 14, 1885.

Application filed December 20, 1884. (No model.)

To all whom it may concern:

Be it known that I, CHARLES R. HARVIN, of Manning, in the county of Clarendon and State of South Carolina, have invented certain new and useful Improvements in Rotary Engines; 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.

My invention relates to an improvement in rotary engines, the object of the same being to provide a device of the above character which shall be simple and economical in construction and durable and efficient in use; and with these ends in view my invention consists in the certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of my improvement, and Fig. 2 is a vertical sectional view.

A represents a drive-wheel or motor, the periphery of which is provided with the circumferential groove B. At intervals on the face of the wheel and in the said groove B are located the heads C, which are adapted to rest flush with the sides or rim of the wheel. The wheel A is suitably keyed to the shaft D, which in turn is journaled in suitable bearings, E, on the standards F.

G is a steam-chest provided with the port H, which leads to the groove B on the wheel A, and by means of which the steam is impelled against the heads C. The chest G is also provided with the valve H', preferably constructed with the openings I I, as shown. The said valve is adapted to open and close the port H, thus regulating the flow of steam to the wheel. The valve H' is operated by means of the valve-rod J, which passes through the stuffing-box K. The rod J is connected to the lever M in any suitable manner. To the opposite end of the lever is pivoted the connecting-rod N, which is operated by means of the eccentric connected with the shaft D. The valve H is adapted to operate so that at each revolution of the wheel it will be driven from one end of the chest to the other and back again once during a single revolution of the

wheel A, thus opening the steam-port four times during each revolution. The valve is constructed to open the port just as one of the heads passes the port, thus forcing the steam against the same. The valve now closes the port, and the wheel is continued to be driven by the expansion of the steam against the head which has just passed the port, and the operation is continued as described.

For the purpose of preventing the escape of live steam from contact with the wheel, I provide the abutment P, operating in suitable guides, and provided with the arms Q and the tongue Q', the tongue of which is adapted to snugly fit within the groove B. The abutment is held in contact with the wheel A by means of the spring R, one end of which bears against the head of the steam-chest G, and the opposite end against the abutment. When the wheel revolves, it becomes necessary to have the tongue Q' withdrawn a sufficient distance to permit the passage of the heads C. This is accomplished by means of the cam-wheels T, which are secured to the wheels A, and are adapted to come in contact with the arms Q at regular intervals—viz., just before each of the heads reaches the tongue Q', and causes the spring-actuated abutment P to recede a sufficient distance to allow the tongue Q' to freely pass the same; but the cams on the plate are of such construction that they will admit of the arm Q' springing back into the groove the moment the head is passed. The wheel is incased in a suitable metallic cover, to prevent the escape of steam. One end of the casing is provided with an exhaust located at a suitable distance from the port.

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

1. The combination, with a wheel provided with a groove on its face, and heads located at intervals in said groove, and an abutment for holding the live steam on the wheel, of devices located on the side or sides of the drive-wheel, by means of which the abutment is moved away from the heads, substantially as set forth.

2. The combination, with a drive-wheel provided with a groove on its periphery, and heads located in said groove, and an abutment for

holding the live steam on the wheel, of cam-wheels operated by the drive-wheel, by means of which the abutment is moved away from the heads, substantially as set forth.

5 3. The combination, with a wheel provided with a groove on its periphery, and heads located in said groove, and a steam-chest situated conveniently near the wheel, and a port-opening on said groove, of a valve located in
10 the chest, and means for reciprocating the valve, whereby steam is admitted to the groove as one of the heads passes the port, substantially as set forth.

15 4. The combination, with a wheel provided with a groove on its periphery, and heads lo-

cated therein, a steam-chest situated near the wheel, a port-opening in said chest, of a spring-actuated abutment adapted to hold the live steam on the wheel, and cam-wheels operated
20 by the shaft, by means of which the abutment is pushed out of the way of the heads, substantially as set forth.

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

CHARLES R. HARVIN.

Witnesses:

B. S. DINKINS,

B. PRENLEY BARRON.