M. A. DOOLEY.

ROTARY ENGINE.

APPLICATION FILED NOV. 28, 1910.

981,540. Patented Jan. 10, 1911.

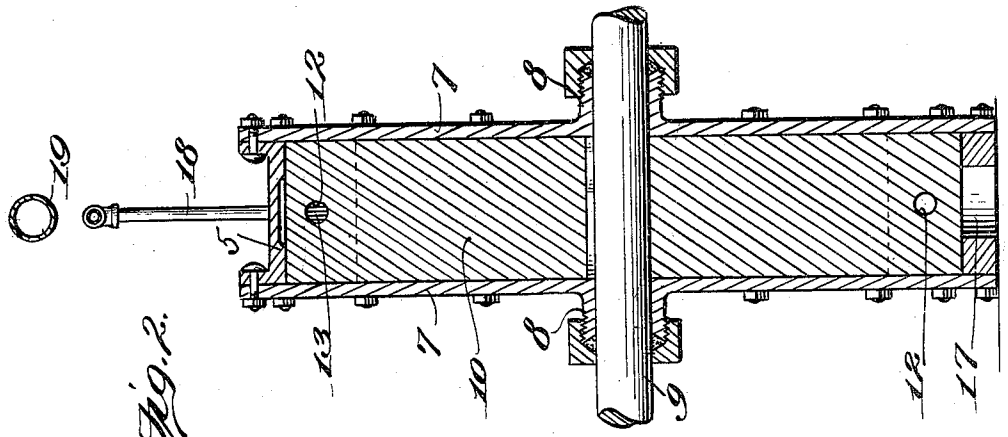

Fig. 2.

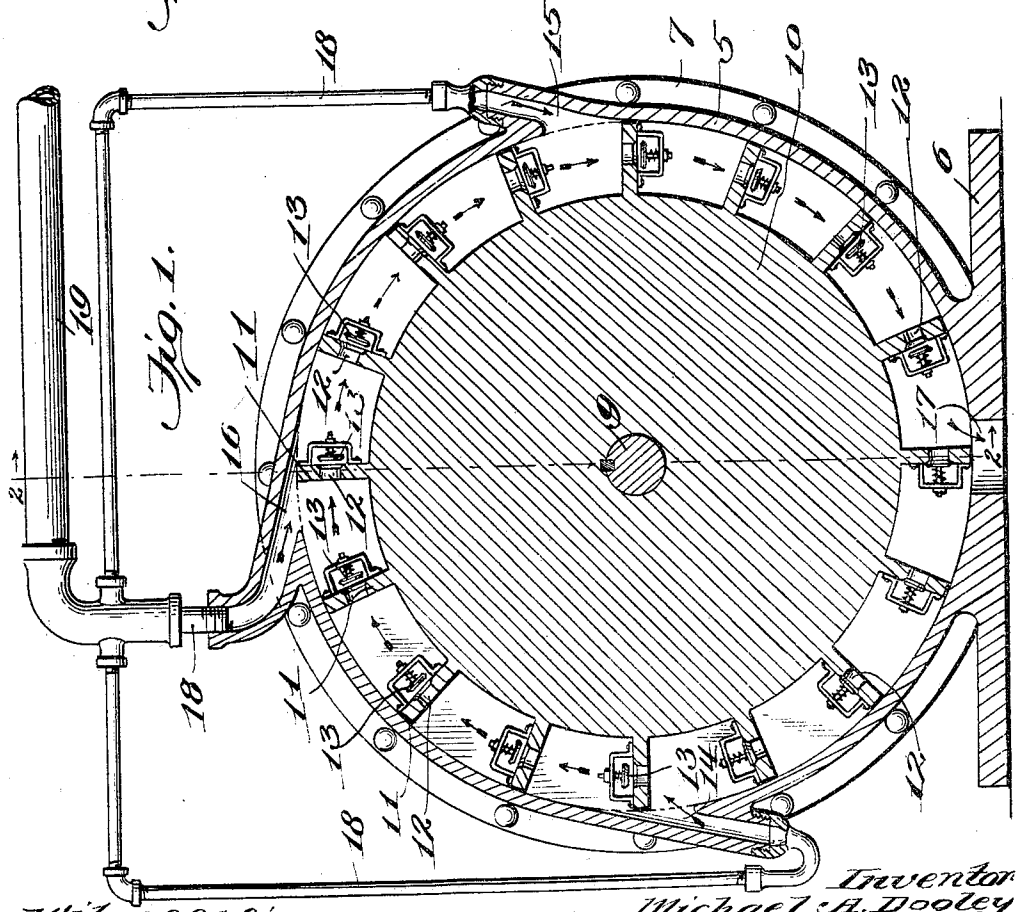

Fig. 1.

Witnesses:
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UNITED STATES PATENT OFFICE.

MICHAEL A. DOOLEY, OF CARY STATION, ILLINOIS.

ROTARY ENGINE.

981,540. Specification of Letters Patent. Patented Jan. 10, 1911.

Application filed November 28, 1910. Serial No. 594,533.

To all whom it may concern:

Be it known that I, MICHAEL A. DOOLEY, a citizen of the United States, residing at Cary Station, in the county of McHenry and State of Illinois, have invented certain new and useful Improvements in Rotary Engines, of which the following is a specification.

This invention relates to rotary engines of the impact type, characterized by a rotor having radial wings against which the force of the motive fluid is expended; and it is the object of this invention to provide in an engine of this kind a novel and improved rotor structure, whereby a feed of live steam is maintained during the entire working stroke.

In order that the invention may be better understood, reference is had to the accompanying drawing, forming a part of this specification, in which drawing—

Figure 1 is a cross section of the engine taken on the line 1—1 of Fig. 2, and Fig. 2 is a vertical section taken on the line 2—2 of Fig. 1.

In the drawing, 5 denotes the cylinder of the engine, the same having a suitable base 6, and being closed at its ends by heads 7 having bearings 8 for the engine shaft 9, the latter passing centrally through the cylinder.

Within the cylinder, the shaft 9 carries a rotor comprising a hub 10 which is keyed or otherwise made fast to the shaft, and has radially extending wings 11 which are spaced equal distances apart, and have their outer ends in sliding contact with the inner wall of the cylinder. The width of the hub and wings corresponds to the width of the interior of the cylinder.

Through each of the wings 11, extends a port 12, the purpose of which is to allow a continual flow of live steam through one wing to the next, so that a feed of live steam is maintained during the entire working stroke. The ports are provided with check valves 13 which are spring-seated. These valves are so arranged that they open only in the direction in which the engine is running, by reason of which the motive fluid is prevented from traveling in the opposite direction, and thus producing a back pressure tending to neutralize the propelling force upon the rotor.

The steam or other motive fluid enters the cylinder tangentially through ports 14, 15 and 16, and escapes through an exhaust port 17. The inlet ports are connected by branch pipes 18 to a main supply pipe 19. The ports 14 and 15 are diametrically opposite each other, and the port 16 is midway therebetween. The exhaust port is diametrically opposite the inlet port 16. The port 16 and its supply pipe are larger than the ports 14 and 15 and their supply pipes, in view of which a greater volume of steam is discharged into the cylinder through the port 16. As the velocity of the steam entering through the port 16 is greater than the velocity of the wings 11, this steam joins the steam entering through the port 15 and mingles therewith before reaching the exhaust port. The steam entering through the port 14 also mingles with the steam entering through the ports 15 and 16 before its escape through the exhaust port.

I claim:

1. A rotary engine comprising a cylinder having inlet and exhaust ports, a rotor working in the cylinder, said rotor having radial wings, said wings having ports, and check valves over said ports, said check valves opening in the direction of rotation of the rotor.

2. A rotary engine comprising a cylinder having a plurality of inlet ports and an exhaust port, a rotor working in the cylinder, said rotor having radial wings, said wings having ports, and check valves over said ports, said check valves opening in the direction of rotation of the rotor.

In testimony whereof I affix my signature in presence of two witnesses.

MICHAEL A. DOOLEY.

Witnesses:
EDWIN KERNS,
JAMES MCNETT.