

J. PROSSEDA.
 ROTARY STEAM ENGINE.
 APPLICATION FILED SEPT. 13, 1912.

1,054,612.

Patented Feb. 25, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

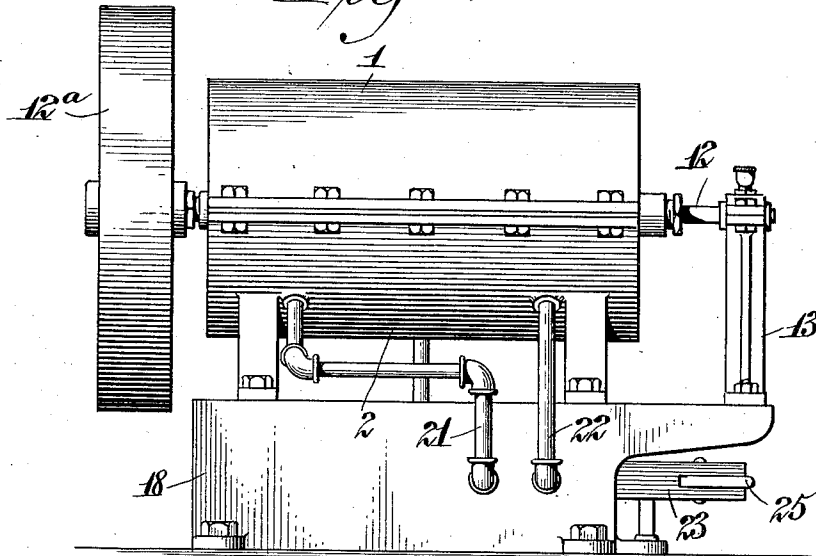
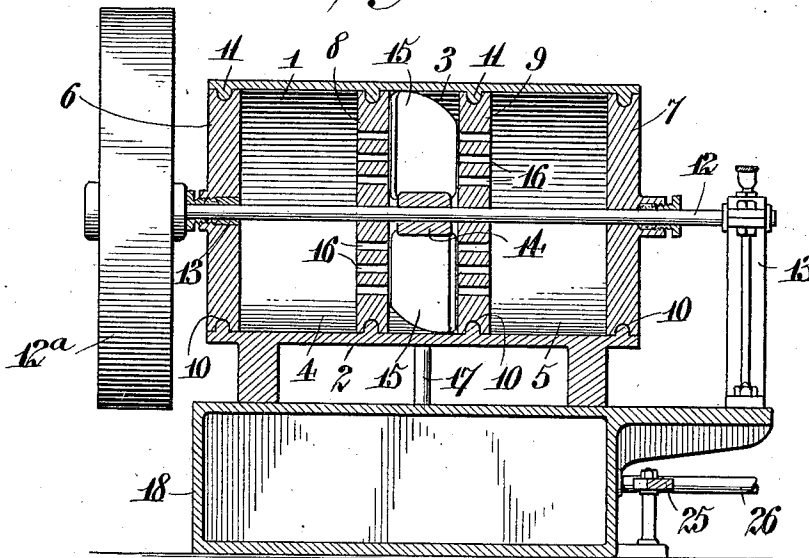


Fig. 2.



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Fig. 3.

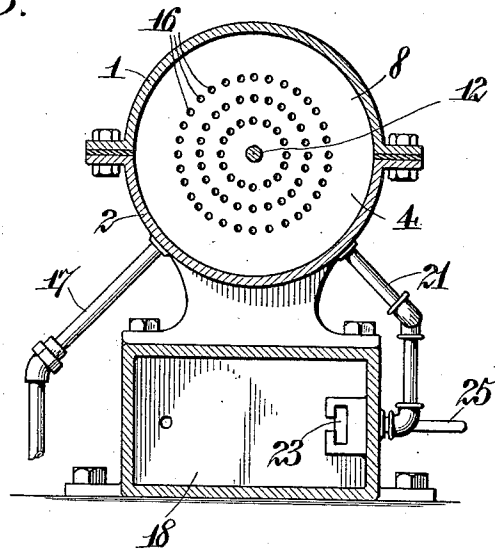
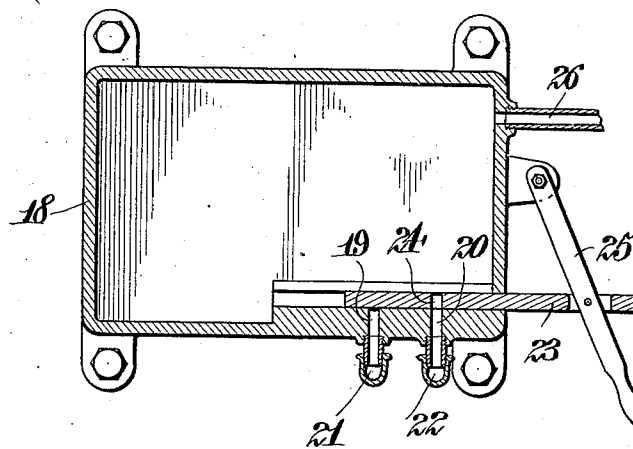


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ROTARY STEAM-ENGINE.

1,054,612.

Specification of Letters Patent.

Patented Feb. 25, 1913.

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To all whom it may concern:

Be it known that I, JOHN PROSEDA, a citizen of the United States, residing at Fredonia, in the county of Chautauqua and State of New York, have invented new and useful Improvements in Rotary Steam-Engines, of which the following is a specification.

This invention relates to reversible and rotary steam engines, the object in view being to provide an engine of the class described, embodying a very simple construction and arrangement of parts, whereby rotary motion is imparted to the engine shaft in either direction, according to the desire of the operator.

One of the main objects of the present invention is to provide in connection with a suitable rotor and casing, distributing chambers arranged at opposite sides thereof and adapted to deliver the steam under full pressure to one side or the other of the rotor, for the purpose of causing the same to revolve in either direction desired.

A further object of the invention is to provide a simple form of casing, by means of which the rotor and distributing compartments are rendered steam tight with respect to each other, thereby economizing in the consumption of steam.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts, as will be hereinafter more fully described, illustrated in the accompanying drawings, and pointed out in the claims hereunto appended.

In the drawings: Figure 1 is a side elevation of a rotary steam engine, embodying the present invention. Fig. 2 is a longitudinal section through the same, taken in line with the engine shaft. Fig. 3 is a cross section through the engine taken through one of the distributing chambers, and showing the ports leading into the rotor chamber. Fig. 4 is a sectional view of the steam chest and slide valve arrangement.

The rotary engine contemplated in this invention comprises a cylindrical casing, embodying two sections 1 and 2, each semi-cylindrical in shape and adapted to be bolted together at opposite sides, as indicated in the drawings. The cylindrical casing is made of suitable length to comprise within the same a centrally arranged rotor chamber 3, and distribution chambers 4 and 5 ar-

ranged at opposite sides of said rotor chamber. The chambers 3, 4 and 5 are formed by the two disk shaped heads 6 and 7 of the cylinder, and the two intermediate disk shaped partitions 8 and 9. It will be observed that each of said partitions and heads is provided with a groove 10 extending entirely around the periphery thereof, while the casing sections are provided with internal ribs 11, so that when the two parts of the casing are brought together and bolted, the ribs 10 will occupy and fill the grooves 9, thereby forming an absolutely steam tight joint between each of the heads, partitions and casing, which has the effect of greatly economizing in the consumption of steam.

12 designates the engine shaft which extends axially of the cylinder, and is mounted in properly lubricated bearings 13 at or near the opposite ends thereof, said bearings being shown as supported by the cylinder heads.

12^a designates a fly wheel on one end of said shaft. Mounted about centrally of the shaft and fast thereon is a rotor 14, embodying a circular series of blades or vanes 15 radiating from the center or hub of the rotor, and being of a width, so as to bring the opposite side edges thereof into close proximity to the oppositely located partitions 8 and 9. Each of the partitions 8 and 9 is provided with a circular series of steam ports or orifices 16, so that the steam entering either one of the distribution chambers is divided up and passes simultaneously through all of the openings in the adjacent partition, acting against the blades or vanes of the rotor, after which the steam passes outward through an exhaust pipe 17.

18 designates a steam chest provided with two ports 19 and 20, from which pipes 21 and 22 lead into the distribution chambers of the casing. The ports 19 and 20 are controlled by a slide valve 23 provided with a single port 24 adapted to be brought into line with either of the ports 19 and 20 for causing the engine to operate in one direction or the other. The slide valve 23 has connected thereto an operating lever 25, by means of which it may be shifted, so as to open either one of the ports 19 or 20, or by swinging said lever to an intermediate position both ports 19 and 20 may be closed, thereby stopping the engine.

26 designates a steam supply pipe leading

from the boiler, not shown, into the steam chest.

The exhaust pipe 17 will be provided with a regulating valve, by the adjustment of which the rapidity of the exhaust steam may be regulated, and the speed of rotation of the engine governed accordingly.

What is claimed is:

1. In a rotary steam engine, a cylinder embodying a rotor chamber and distribution chambers at opposite sides of the rotor chamber, partitions separating the rotor chamber from the distribution chambers and provided with inlet orifices, cylinder heads forming the outer walls of the distribution chambers, the cylindrical wall being diametrically divided into sections and having a tongue and groove engagement with the partitions and cylinder heads, a rotary shaft extending axially through the cylinder, a rotor fast on said shaft and embodying obliquely pitched blades, the side edges of which work in close proximity to said partitions, a reversing inlet valve and connections for admitting steam to one or the other of the distribution chambers, and an exhaust pipe communicating with the rotor chamber.

2. In a rotary steam engine, a cylinder, embodying a rotor chamber and distribution chambers at opposite sides of the rotor chamber, partitions separating the rotor chamber from the distribution chambers and provided with inlet orifices, cylinder heads forming the outer walls of the distribution chambers, the cylindrical wall being diametrically divided into two sections and provided with internal ribs fitting into grooves in the peripheries of said partitions and cylinder heads, a rotary shaft extending axially of the cylinder, a rotor fast on said shaft and embodying obliquely pitched blades, the side edges of which work in close proximity to said partitions, a reversing inlet valve and connections for admitting steam to one or the other of the distribution chambers, and an exhaust pipe communicating with the rotor chamber.

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

JOHN PROSEDA.

Witnesses:

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