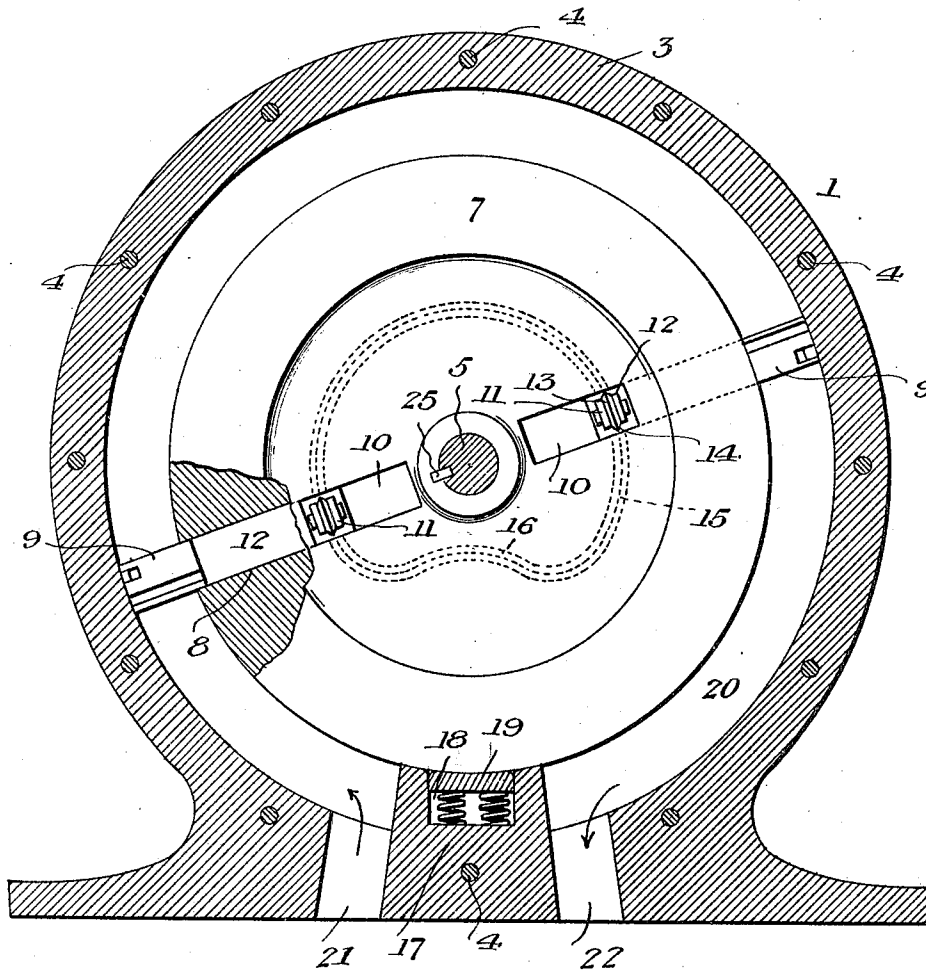


E. L. MUNN.
 ROTARY ENGINE.
 APPLICATION FILED JUNE 29, 1918.

1,320,892.

Patented Nov. 4, 1919.
 2 SHEETS—SHEET 1.

Fig. 1.



Witnesses
R. A. Thomas

Inventor
E. L. Munn
 By *Victor J. Evans*
 Attorney

E. L. MUNN.
 ROTARY ENGINE.
 APPLICATION FILED JUNE 29, 1918.

1,320,892.

Patented Nov. 4, 1919.

2 SHEETS—SHEET 2.

Fig. 2.

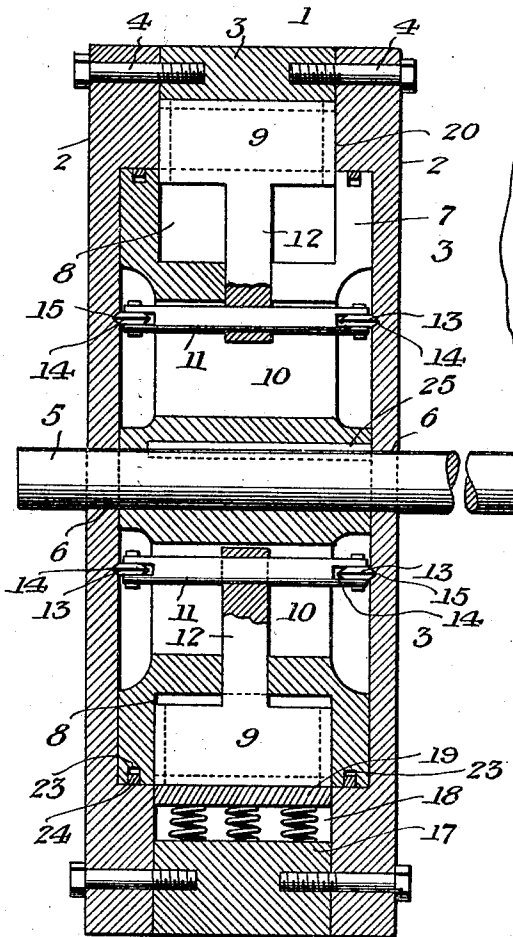


Fig. 3.

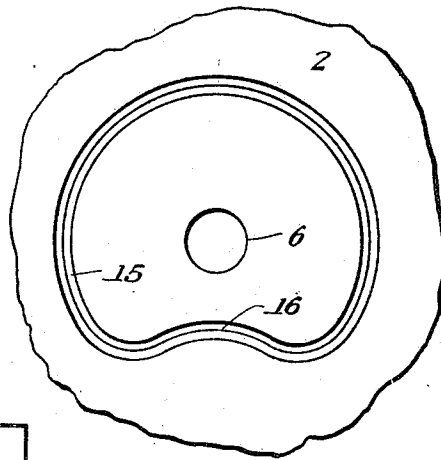
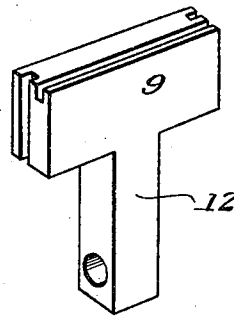


Fig. 4.



Witnesses
R. A. Thomas

Inventor
E. L. Munn
 By *Victor J. Evans* Attorney

UNITED STATES PATENT OFFICE.

EUGENE L. MUNN, OF ALTOONA, PENNSYLVANIA.

ROTARY ENGINE.

1,320,892.

Specification of Letters Patent.

Patented Nov. 4, 1919.

Application filed June 29, 1918. Serial No. 242,573.

To all whom it may concern:

Be it known that I, EUGENE L. MUNN, a citizen of the United States, residing at Altoona, in the county of Blair and State of Pennsylvania, have invented new and useful Improvements in Rotary Engines, of which the following is a specification.

This invention relates to rotary engines adapted to be driven either by steam gas or other fluid or liquid, the construction being also adapted to operate as a pump in connection with any liquid or fluid.

The main object of the present invention is to produce an engine of the class described embodying in connection with a stationary casing, a rotor embodying diametrically opposite radially movable blades or wings, and novel means for automatically sliding said wings to cause them to pass by a single abutment at the proper time; also means for preventing leakage of fluid between the working faces of the rotor and casing.

With the above and other objects in view, the invention consists in the construction, combination and arrangement of parts, as herein described, illustrated and claimed.

In the accompanying drawings:

Figure 1 is a vertical longitudinal section through the improved engine.

Fig. 2 is a diametrical section through the same, taken in line with the shaft and the diametrically opposite wings or blades.

Fig. 3 is a fragmentary elevation of one of the sides or heads of the casing looking toward the inner face thereof.

Fig. 4 is a detail perspective view of one of the blades or wings.

The improved engine comprises a stationary casing 1 which is generally cylindrical in formation. The casing is preferably made up of the oppositely located disk shaped heads 2 arranged in spaced relation to each other and located at opposite sides of a central generally annular peripheral wall 3 to which the heads 2 are fastened by cap screws 4 or the equivalent thereof. Mounted upon a central rotary shaft 5 extending through bearing openings 6 in the heads 2 is a rotor 7 comprising a cylindrical

body having diametrically opposite pockets 50 or guide-ways 8 in which are mounted diametrically opposite radially slidable wings or blades 9. In line with the guideways 8, are other radial guideways or slots 10, and in each slot 10 there is mounted a cross head 55 11 which is journaled in the inner end of the stem 12 of the respective wing or blade 9 as shown for example in Fig. 2. Each cross head 11 has journaled in the opposite extremities thereof rollers 13 having V-shaped 60 peripheries 14 which travel in correspondingly shaped grooves or guideways 15 in the inner face of the heads 2 of the casing. The grooves 15 are inwardly offset at the points 16 so that when the rollers 13 traverse 65 the portions 16 of the grooves 15, the blades or wings 9 will be retracted or drawn inwardly so as to pass by a stationary abutment 17 having a pocket 18 in the inner face thereof in which is placed a packing 19 70 which contacts with the periphery of the body of the rotor 7 as shown in Fig. 1, thus preventing leakage of fluid past the abutment 17. The annular space 20 between the periphery of the rotor and the inner periph- 75 ery of the casing forms an expansion chamber which has two ports 21 and 22 intersecting the same at opposite sides of the abutment 17, the ports 21 and 22 being adapted to serve either as inlet or outlet ports ac- 80 cording to the direction of rotation of the rotor. It being apparent that steam or other fluid may be admitted either at 21 or 22 and exhausted through the other port, suitable valve mechanism, (not shown), be- 85 ing used to control the admission of the motive fluid to the engine.

The rotor 17 is provided adjacent to the opposite sides thereof and in its periphery with annular grooves 23 to receive packing 90 rings 24 thereby preventing leakage at such points. The rotor 7 is shown as fastened to the shaft 5 by means of a key or spline 25. The cross heads 11 in conjunction with the rollers 13 not only serve to retract the wings 95 or blades 9 and return the same into contact with the inner periphery of the casing, but they also serve to center said wings or

blades and the stems 12 thereof and thus prevent any binding action between said parts and the rotor.

I claim:

5 A rotary engine comprising a casing including heads having cam grooves formed in their inner surface, V shape in cross section, a rotor having transversely extending through slots, abutments slidable in the ro-

tor, and each having a stem extending into 10 one of said slots, a cross head passing through the stem, and a roller mounted in each end of the cross head and having a V shape periphery moving into one of said grooves. 15

In testimony whereof I affix my signature.

EUGENE L. MUNN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."