

954,609.

E. A. BOHM.
 ROTARY ENGINE.
 APPLICATION FILED AUG. 13, 1909.

Patented Apr. 12, 1910.
 2 SHEETS—SHEET 1.

Fig. 1.

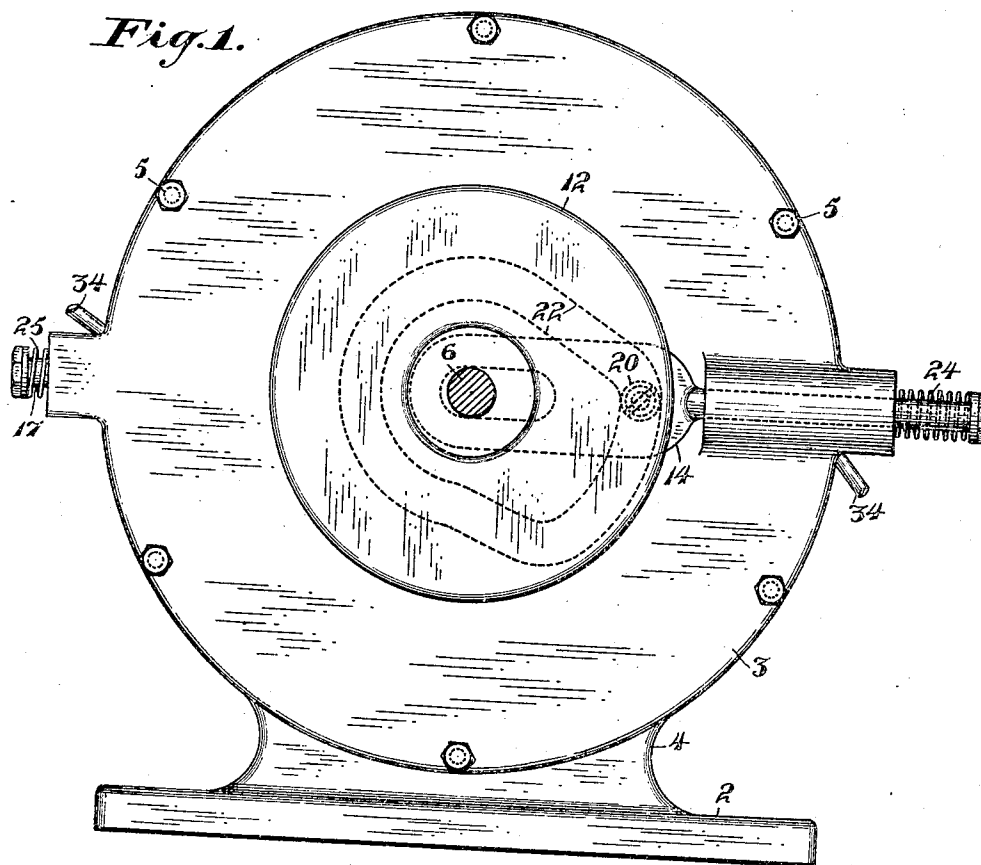
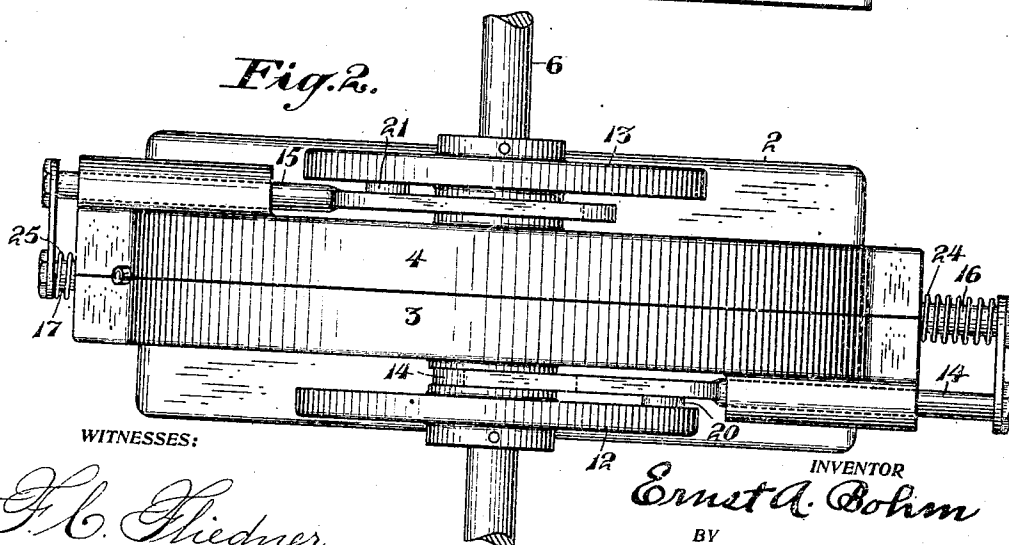


Fig. 2.



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Fig. 3.

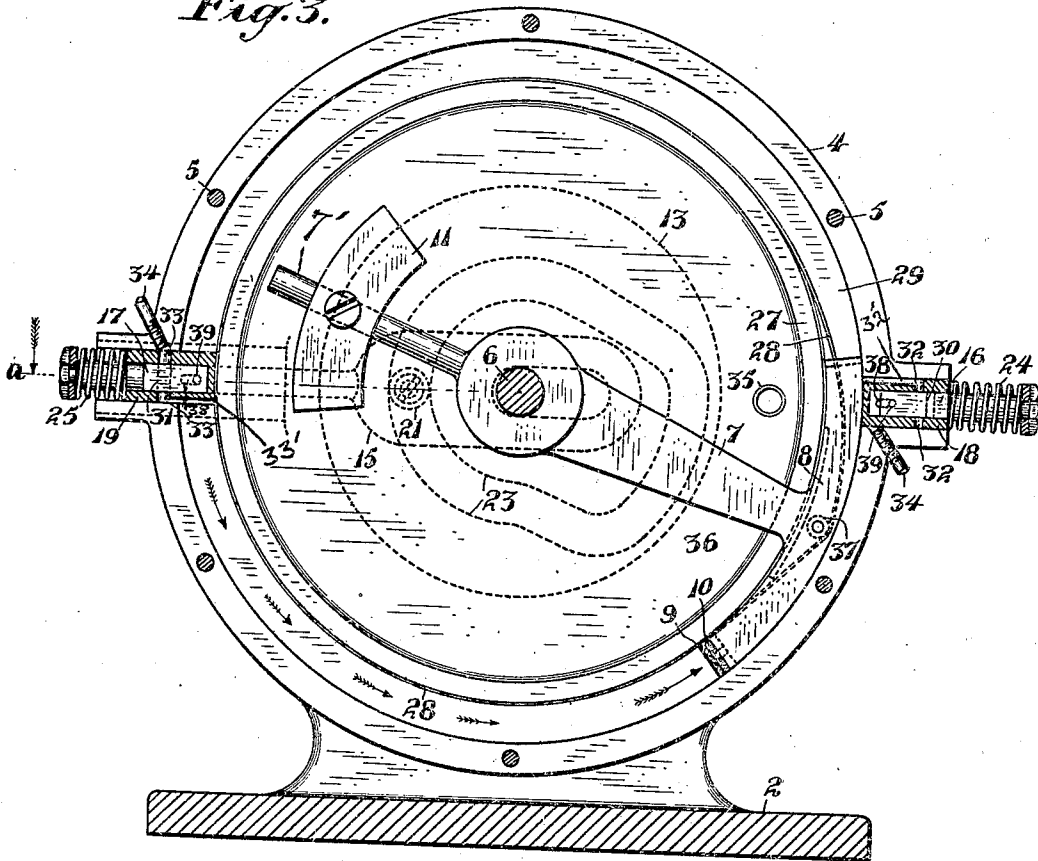
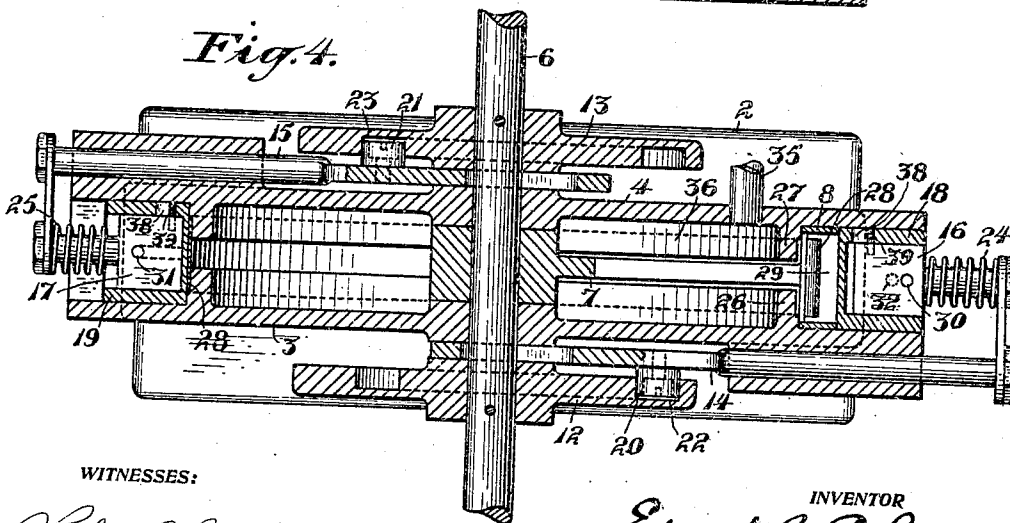


Fig. 4.



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UNITED STATES PATENT OFFICE.

ERNST A. BOHM, OF SAN BRUNO, CALIFORNIA.

ROTARY ENGINE.

954,609.

Specification of Letters Patent.

Patented Apr. 12, 1910.

Application filed August 13, 1909. Serial No. 512,676.

To all whom it may concern:

Be it known that I, ERNST A. BOHM, a citizen of the United States, residing at San Bruno, in the county of San Mateo and State of California, have invented certain new and useful Improvements in Rotary Engines, of which the following is a specification.

My invention relates to improvements in rotary engines.

The object of my invention is to provide a novel rotary engine whereby power is saved, back pressure eliminated, and friction minimized, and to said end my invention consists in the novel arrangement and combination of parts shown in the accompanying drawings, described in the following specification and claimed in the appended claims.

Referring to the said drawings, Figure 1 is a side elevation of my said rotary engine; Fig. 2 is a plan view of the same; Fig. 3 is a transverse vertical section of the said engine, and Fig. 4 is a section of the said engine on line *a* of Fig. 3.

In the figures 2 indicates a base and 3 and 4 are respectively sections of the engine secured together by bolts 5. Within the casing formed by uniting the sections is a shaft 6 which rotates and carries an arm or member 7. At the end of said member is a piston 8, and which piston is provided with a wearing plate 9 and packing 10. Secured to the extension 7' of member 7 is a weight 11, which acts as a counter-balance to the piston 8. Cams 12 and 13 are secured to shaft 6, the same operating slide rods 14 and 15, and said rods are connected to slides 16 and 17, which slide within gates 18 and 19. Rollers 20 and 21 on rods 14 and 15 respectively penetrate grooves 22 and 23 as shown, the said grooves being contained in cams 12 and 13.

24 and 25 are springs, the same operating the gates 18 and 19 respectively by pressure thereon until the gates reach the outer surfaces of the flanges 26 and 27. The said flanges guide the flexible steel band 28, the gates resting on the flanges, and thereby close the path 29 in which the piston 8 rotates. When the gates reach the flanges further movement of the slides 16 and 17

brings ways 30 and 31 respectively in the path of the steam ports 32 and 33 in the gates aforesaid.

34 are inlet pipes, and 35 are outlet pipes leading from the exhaust chamber 36.

37 is a roller mounted on the piston and riding beneath the flexible band 28. Pins 39 secured to slides 16 and 17 operate in slots 38 in gates 18 and 19 so as to return the gates when necessary. Although in the construction of the band 28 steel is preferably used other material suitable for the purpose may be used.

32' and 33' indicate passages running longitudinally with the gates and contained therein.

In the operation of said engine, steam or such other fluid as may be used enters one of the inlets 34, then passes through port 32 or 33 in gate 18 or 19, and passage 30 or 31 in slide 16 or 17, then continues through canal 32' or 33' into path or cylinder 29, and then contacts with and drives piston 8. When gates 18 and 19 contact with flanges 26 and 27 respectively, further movement thereof is prevented, although the slides continue movement upon such contact as specified. The steam or other fluid in exhausting passes through the open rear part of the piston 8; thence around the sides of the endless band 28; through the slot between flanges 26 and 27, then into exhaust chamber 36, and thereupon escapes through exhaust pipe 35. The inner section of each slide rod and which is illustrated in Fig. 3, being slide rods 14 or 15 larger than the outer section as shown in said figure in dotted lines, is provided with a slot whereby it is adapted for reciprocating motion upon shaft 6 which is contained therein. Roller 20 or 21 being contained in groove 22 or 23 of cams 12 or 13 by the movement of said cam during the operation of the engine causes such reciprocating motion whereby entrance of the steam or other fluid in cylinder 29 is successively permitted. Each side of the engine having inlet 34 as shown in Fig. 3 and Fig. 4 has identical parts hereinbefore described whereby power is successively applied to the piston for the operation of the engine, finding entrance through one of the inlets 34 and impelling the pis-

ton to the other side, where fresh impulsion is given such piston by entrance of power through the opposite inlet, the impulsion being in such manner continued as long as desired.

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

1. In a rotary-engine the combination of
 10 a casing having an annular path, and an orifice for the escape of power therefrom; a central revoluble shaft contained in said casing, a pair of oppositely positioned cams secured to said shaft, a piston in said path
 15 secured to said shaft; slide rods operatively connected to said cams and guided by said shaft; gates having transverse apertures extending therethrough, slides connected to said slide rods and having apertures extending therethrough arranged to register with said transverse apertures and contained in said gates, means for exerting
 20 pressure on said gates, flanges extending inwardly from said casing positioned for engagement with said gates, an endless flexible band projecting into said path and guided by said flanges, and means extending into said engine for permitting the entrance of power therein.

2. In a rotary-engine the combination of
 30 a casing having an annular path and an orifice for the escape of power therefrom, a central revoluble shaft contained in said casing, a pair of oppositely positioned cams secured to said shaft, a piston in said path
 35 secured to said shaft, slide rods operatively connected to said cams and guided by said shaft, gates having transverse apertures extending therethrough and longitudinal
 40 canals leading from said apertures; slides connected to said slide rods and having apertures extending therethrough arranged to register with said transverse apertures and contained in said gates, means for exerting
 45 pressure on said gates, flanges extending inwardly from said casing positioned for engagement with said gates, a roller mounted on said piston, an endless flexible band projecting in said path and
 50 therein engaging said roller, and means extending into said engine for permitting the entrance of power therein.

3. In a rotary-engine the combination of
 55 a casing having an annular path and an orifice for the escape of power therefrom, a central revoluble shaft contained in said casing, a pair of oppositely positioned cams secured to said shaft, a piston in said path having a main shaft supporting the same
 60 and an extension shaft leading from said main shaft and in alinement therewith, a counter-weight secured to said extension shaft, slide rods operatively connected to said cams and guided by said shaft, gates

having transverse apertures extending there- 65
 through and longitudinal canals leading from said apertures; slides connected to said slide rods and having apertures extending therethrough arranged to register with said transverse apertures and contained in 70
 said gates, means bearing against said gates for exerting pressure thereon; flanges extending inwardly from said casing positioned for engagement with said gates, a roller mounted on said piston, an endless 75
 flexible band projecting into said path and therein engaging said roller, and means leading into said engine for permitting the entrance of power therein.

4. In a rotary-engine the combination of a 80
 casing having an annular path and an orifice for the escape of power therefrom, a central revoluble shaft contained in said casing, a pair of oppositely positioned cams secured to said shaft, a piston in said path having a 85
 main shaft supporting the same and an extension shaft extending from the main shaft, a counter-weight secured to said extension shaft, slide rods operatively connected to said cams and guided by said shaft, 90
 gates having transverse apertures extending therethrough, slots, and longitudinal canals leading from said apertures, slides contained in said gates and provided with pins engaging said slots, said slides being connected to said slide rods and having apertures extend- 95
 ing therethrough arranged to register with said transverse apertures, means bearing against said gates for exerting pressure thereon, flanges extending inwardly from 100
 said casing positioned for engagement with said gates, an endless band movably mounted and projecting into said path, and means leading into said engine for permitting the entrance of power therein. 105

5. In a rotary-engine the combination of a casing having an annular path, ducts for the entrance of power therein and an orifice for the escape of power therefrom, a central revoluble shaft contained in said 110
 casing, a pair of oppositely positioned cams secured to said shaft, a piston in said path provided with a wearing plate porting the same and an extension shaft connected to said main shaft, a counter-weight 115
 secured to said extension shaft, slide rods operatively connected to said cams and guided by said shaft, gates having transverse apertures extending therethrough, longitudinal canals leading from said apertures, and slots, slides contained in said gates and provided with pins engaging said slots, said slides being connected to said slide rods and having apertures extending therethrough, arranged to register with said transverse 125
 apertures, means bearing against said gates for exerting pressure thereon, flanges extending inwardly from said casing posi-

tioned for engagement with said gates and an endless band movably mounted and projecting into said path.

5 6. In a rotary-engine having inlets and an outlet for power, a centrally-mounted piston in connection with a shaft carrying a counter-weight, a casing for said engine having a longitudinally annular cylinder for said piston, a movably mounted endless band

projecting into said cylinder, and means 10 contained in said casing for successively imparting motion to said piston.

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

ERNST A. BOHM.

Witnesses:

A. K. DAGGETT,
JOSEPH HAMPTON.