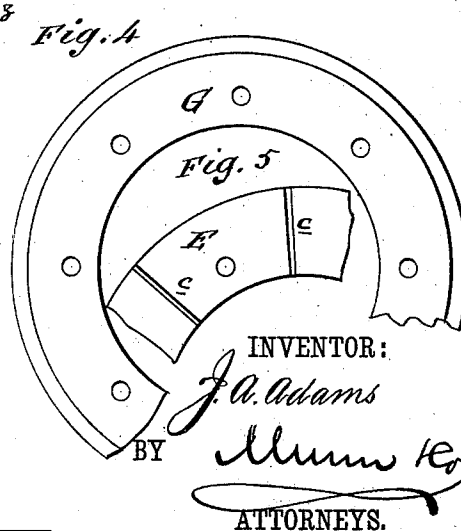
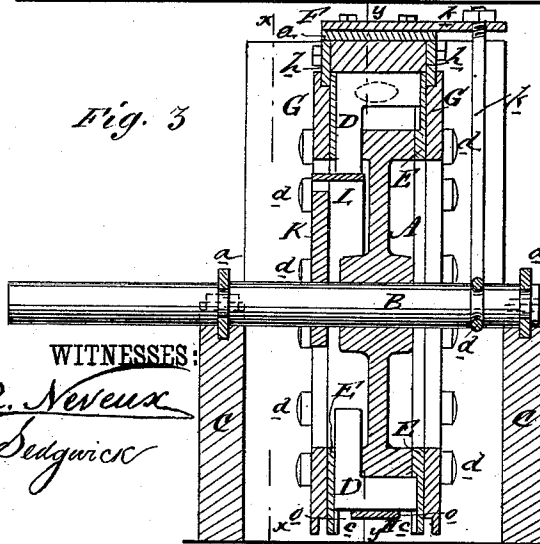
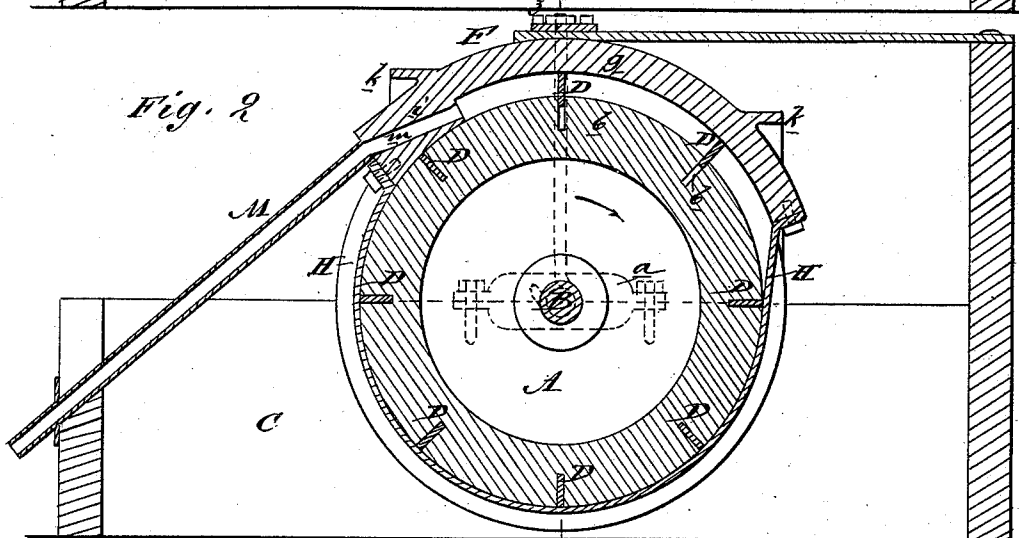
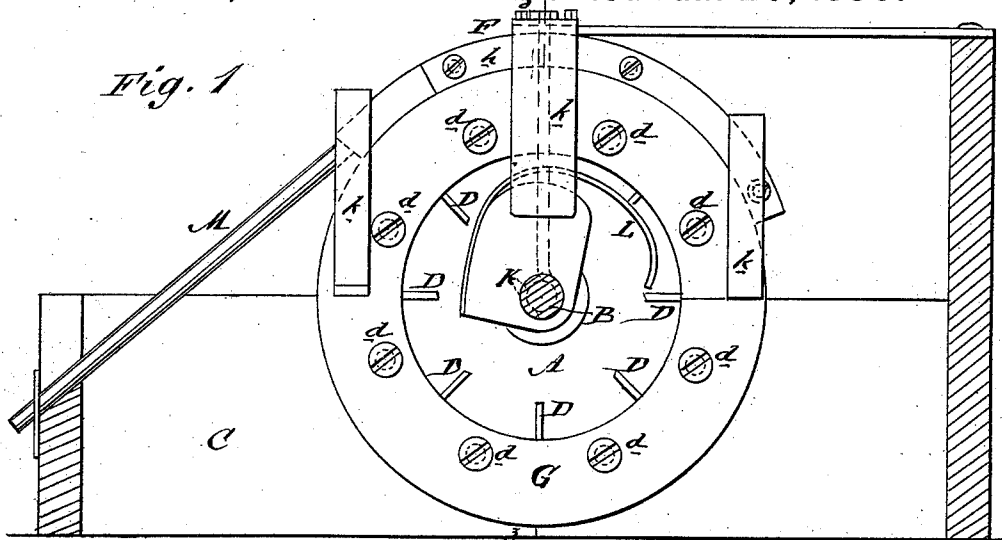


J. A. ADAMS.  
Rotary-Engine.

No. 223,688.

Patented Jan. 20, 1880.



WITNESSES:  
*C. Neveux*  
*C. Sedgwick*

INVENTOR:

*J. A. Adams*

BY

*Almon H. Co.*  
ATTORNEYS.

# UNITED STATES PATENT OFFICE.

JAMES A. ADAMS, OF LAMPASAS, TEXAS, ASSIGNOR TO HIMSELF AND ISAAC  
N. HAMAN, OF SAME PLACE.

## ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 223,688, dated January 20, 1880.

Application filed November 14, 1879.

To all whom it may concern :

Be it known that I, JAMES A. ADAMS, of Lampasas, in the county of Lampasas and State of Texas, have invented a new and Improved Rotary Engine, of which the following is a specification.

Figure 1 is a side elevation of the engine. Fig. 2 is a vertical longitudinal section on line *yy*, Fig. 3. Fig. 3 is a vertical sectional elevation on line *zz*, Fig. 1. Fig. 4 is an elevation of a section of the inner face of the outer flange. Fig. 5 is an elevation of a section of the inner ring, showing the radial grooves.

Similar letters of reference indicate corresponding parts.

This invention relates to that class of rotary engines that can be operated with steam or water.

The invention consists, essentially, of a wheel provided with radially-sliding pistons and revolving within a fixed circumferential steam-chest, and having fixed on its axle an eccentric and spring, that operate to throw the pistons or floats outward to receive the pressure of the steam or other motor that is to drive the engine.

In the drawings, A represents the wheel, keyed to the horizontal axle B, that is journaled in boxes *a*, which rest on the frame C.

D D are the sliding pistons or floats, that are set in the radial grooves *b*, which extend across the face of the wheel A.

E E are the inner rings, that are secured to the sides of the wheel A, and extend beyond its periphery sufficiently to slightly overlap the sides of the steam-chest F, and these rings E E are provided with radial grooves or slots *c*, for the accommodation and guidance of the edges of the pistons or floats D D.

G G are the circumferentially-recessed ring-flanges, that are placed outside of the rings E E, and are held thereto and to the sides of the wheel A by the bolts or screws *d*, so that the grooves *f* will be formed between the rings and flanges E G.

The steam-chest F is formed of a plate, *g*, curved to correspond with the face of the wheel A and made to extend over about one-third of the circumference thereof, of the curved side pieces, *h h*, that are bolted on the edges of the

plate *g* of the block *i*, that forms the steam-ingress end of the steam-chest, and of the face of the wheel A itself.

In order to make steam-tight joints between the upper part of the steam-chest F and the wheel A the side pieces, *h h*, are made to extend downward, so that their convex edges shall enter the groove *f* between the rings and flanges E G. This steam-chest F or its fixed parts are secured in place by the yokes or stays and bolts *k k*, or any convenient device.

The narrow slightly eccentric band H, placed between the rings E E, and about that portion of the circumference of the wheel A that is not covered by the steam-chest F, is held in place by having its ends fastened to the ends of the steam-chest F, and through the space *o* between the edges of this band H and the rings E E the steam exhausts from the steam-chest F.

An eccentric block, K, set over the axle B and held in place by one of the stays *k*, or other convenient device, has attached to its edge and curving over its upper portion a spring, L, with which spring L the inner projecting ends of the sliding pistons or floats D D come in contact as the wheel A revolves, and are thereby forced radially outward, so that their outer ends shall successively come in steam-tight contact with the top and sides of the steam-chest F, and so that they (the said pistons or floats D D) shall each in turn, as the wheel A revolves, serve as a piston to receive the pressure of the incoming steam.

To operate this engine, steam is admitted into the ingress-pipe M, and passing through the port *m* it impinges with full force against the pistons D, that are successively thrust vertically outward by spring L, thus causing the wheel A to revolve in the direction of the arrow shown in Fig. 2, and as the said pistons D successively move beyond the steam-chest F the steam that has moved them exhausts through the open spaces *o*, between the band H and the rings E E, while at the same time the said pistons D are forced and held inward by contact with the band H until the revolution of the wheel A has carried them past the block *i*, when in succession they are again operated upon by the spring L, as before de-

scribed. By reversing the position of this  
wheel and weighting the inner ends of the pis-  
tons or floats D, and dispensing with the ec-  
centric block K and spring L, this engine can  
5 be used as a water-motor, the water being  
made to enter and exhaust from the device in  
the same manner as the steam, as herein set  
forth.

10 Having thus described my invention, I claim  
as new and desire to secure by Letters Pat-  
ent—

The combination, in a rotary engine, with a  
wheel provided with sliding radial pistons  
and revolving in a circumferential steam-chest,  
of an eccentric and spring arranged on the 15  
axle, as and for the purpose specified.

JAMES ANSLEY ADAMS.

Witnesses:

T. H. HAYNIE,  
D. C. THOMAS.