(2 Sheets) Sheet No. 1.

Jas. M. Conkle
Rotary Engine

117153

PATENTED JUL 18 1871

Fig. 1.

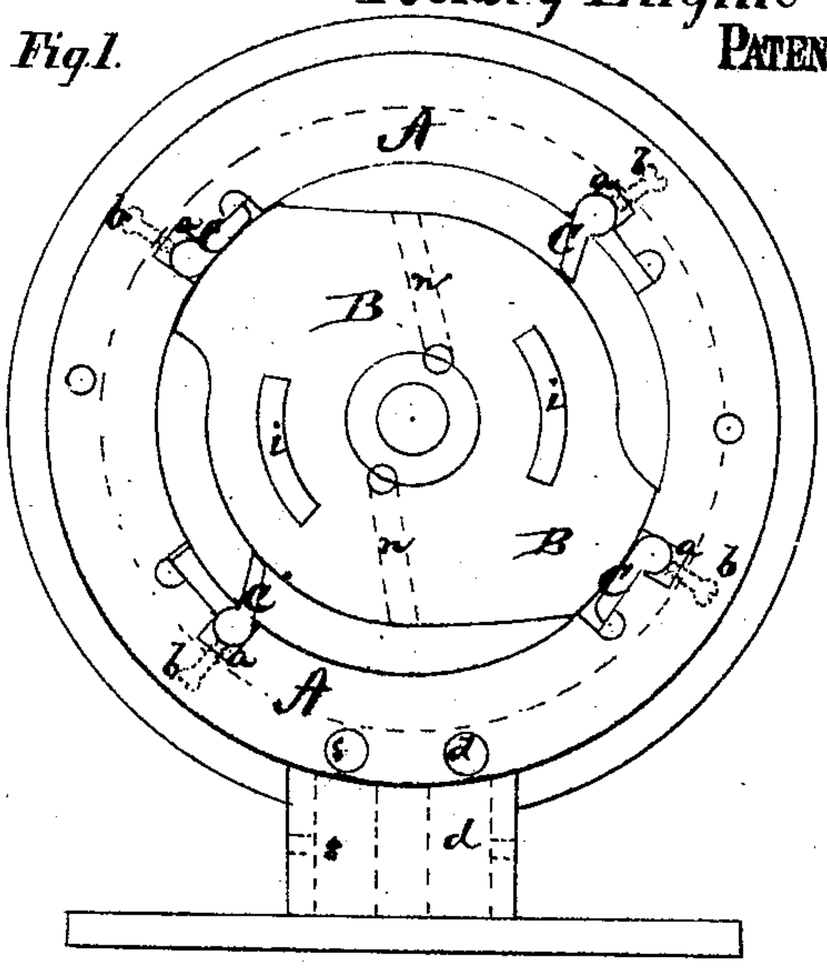
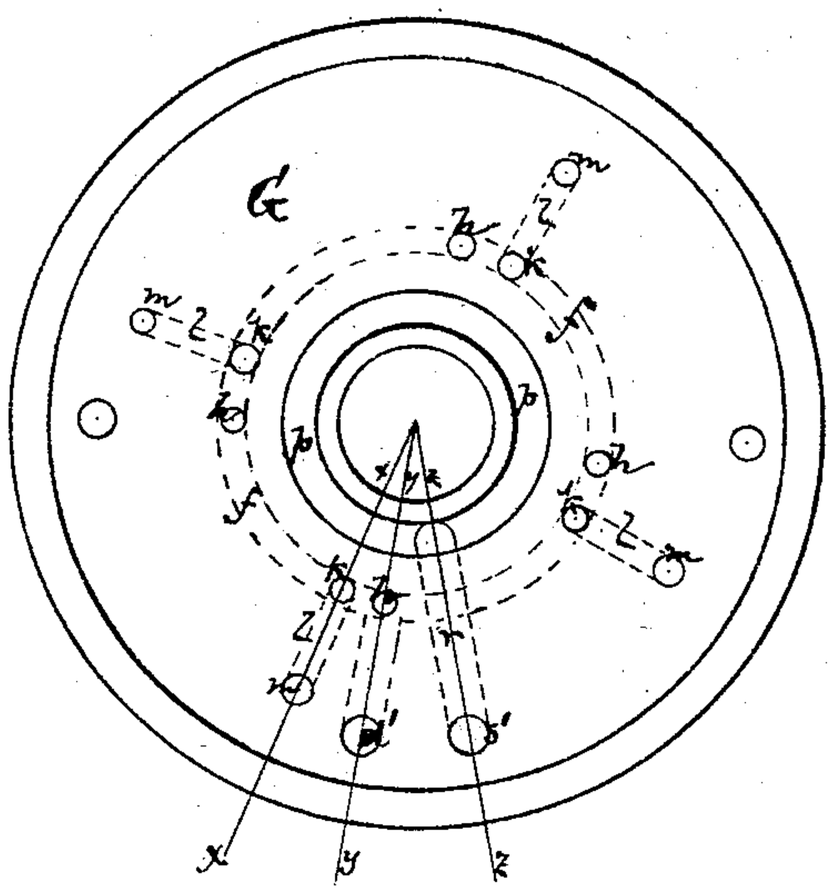


Fig. 2.



Witnesses.
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C. L. Ewert.

Inventor.
James M. Conkle
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(2 Sheets) Sheet No 2

Rotary Engine

117153

Fig. 3.

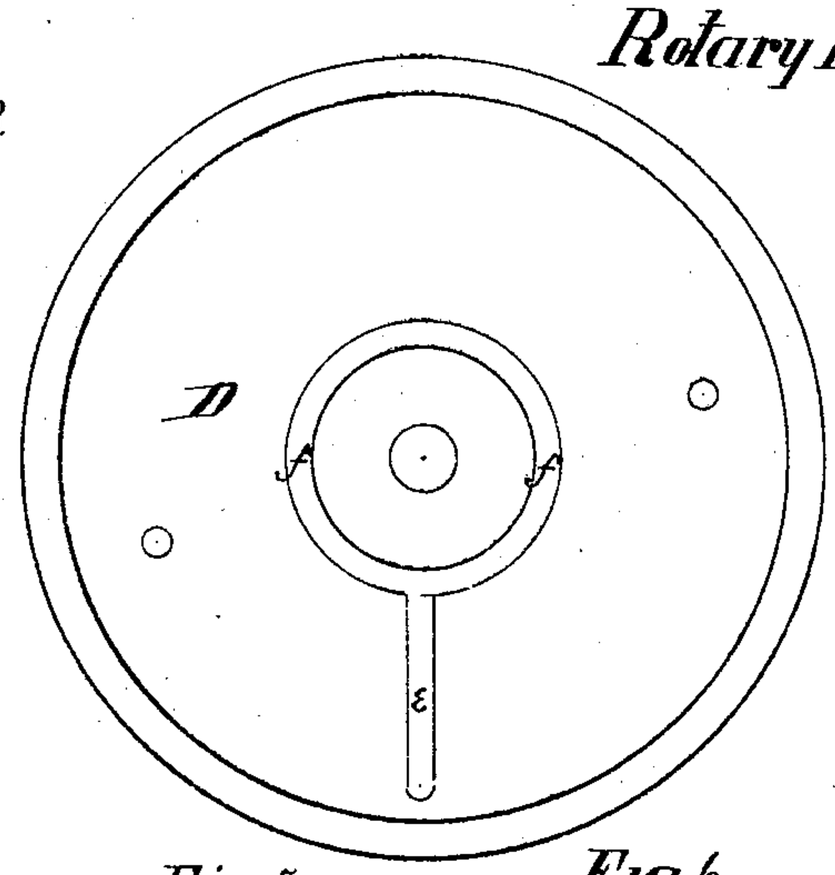


Fig. 4.

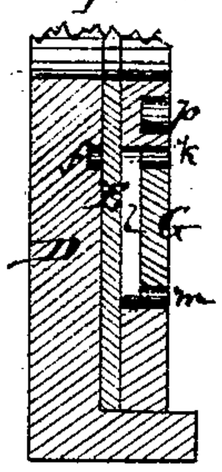


Fig. 5.

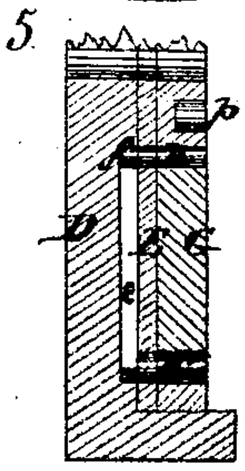


Fig. 6.

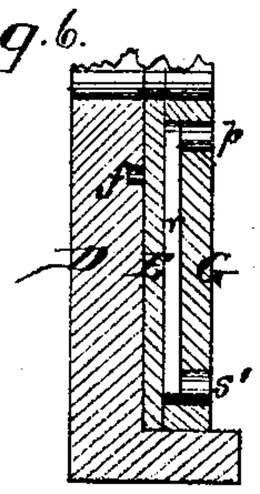
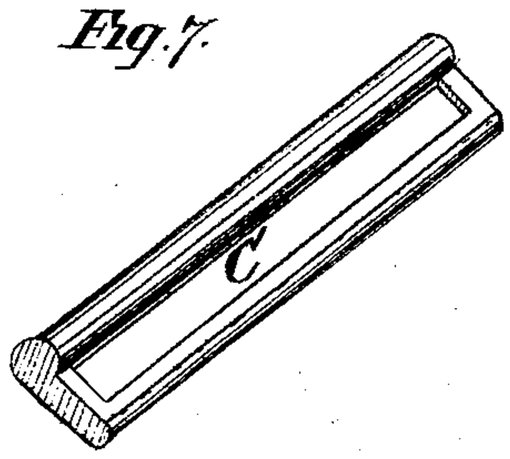


Fig. 7.



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UNITED STATES PATENT OFFICE.

JAMES M. CONKLE, OF BEAVER FALLS, PENNSYLVANIA.

IMPROVEMENT IN ROTARY ENGINES.

Specification forming part of Letters Patent No. 117,153, dated July 18, 1871.

To all whom it may concern:

Be it known that I, JAMES M. CONKLE, of Beaver Falls, in the county of Beaver and in the State of Pennsylvania, have invented certain new and useful Improvements in Rotary-Engine; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon making a part of this specification.

The nature of my invention consists in the construction and arrangement of a rotary-engine, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view of the engine, the front head being removed. Fig. 2 is an inside view of the head. Fig. 3 is an inside view of the outer part of the head. Figs. 4, 5, and 6 are transverse sections through lines *x x*, *y y*, and *z z* of Fig. 2, respectively. Fig. 7 is a perspective view of one of the valves.

A represents a cylinder of any suitable dimensions, within which the piston B rotates, this piston being constructed, as shown in Fig. 1, with two driving points. In the inside of the cylinder A, at equal distances apart, are set four valves, C C, extending the entire length of the cylinder, and constructed, as shown in Fig. 7, with a recess on the under or inner side of each, so as to catch air or exhaust steam in closing, thereby preventing noise or rattle. The side or portion upon which each valve turns is rounded and inserted in a rounded groove in the cylinder against a follower, *a*, the pressure of which against the valve is regulated by set-screws *b*, thus regulating the friction. Each head to the cylinder A is composed of an outer part, D, a middle part, E, and an inner part, G, all of which, together with the cylinder and piston, are provided with ports and grooves for the passage of the steam, as will be presently described. The steam is received from the pipe below through the passage *d* in the cylinder or shell A. This passage connects, by a port, *d'*, through the parts G E, with a groove, *e*, leading to a circular groove, *f*, on the inside of the outer part D of the head. From said groove *f* containing the steam, through the parts E and G, are four holes or issues, *h h*, connecting with recesses *i i* in the revolving piston or head B, which recesses receive and cut off the steam. The steam then passes through openings *k*, grooves *l* in the outside of the inner part G, and through openings *m*, and is let into and against the rotary piston B by the valves C. After the steam acts on the piston it exhausts or escapes through the issues *n* in said piston extending toward the center, connecting with the small circular groove *p* on the inside of the inner part G, then passing through the groove *r* and opening *s'* in said part G to and through the exhaust-pipe *s*. These various passages are the same in each end or each head of the cylinder, as well as in each end of the piston.

For a large cylinder the piston may have four driving points, in which case six valves should be used; but I do not confine myself to any specific number, as they may be varied to suit circumstances.

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

1. The openings *k m* and grooves *l* for conducting the steam from the cut-offs *i* to the rotary head or piston through the valves C, substantially as herein set forth.

2. The passages *n* through the rotary piston B, circular groove *p*, and passage *r*, for conducting the steam from the inside of the cylinder to the escape-pipe, substantially as herein set forth.

3. The piston or rotating head B, provided with recesses *i* and passages *n*, substantially as and for the purposes herein set forth.

4. The cylinder-head, composed of the three parts D, E, and G, with the various passages, arranged substantially as shown and described, and for the purposes herein set forth.

5. The combination of the valves C, recessed as described, followers *a*, and set-screws *b*, substantially as and for the purposes herein set forth.

6. The combination of the cylinder A, piston B, valves C, followers *a*, and heads D E G, all constructed as shown and described, and provided with the various passages, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 7th day of April, 1871.

JAMES M. CONKLE.

Witnesses:

C. W. TAYLER,

JAMES KEYS.