JAMES COX.

Improvement in Rotary-Engines.

No. 115,171. Patented May 23, 1871.

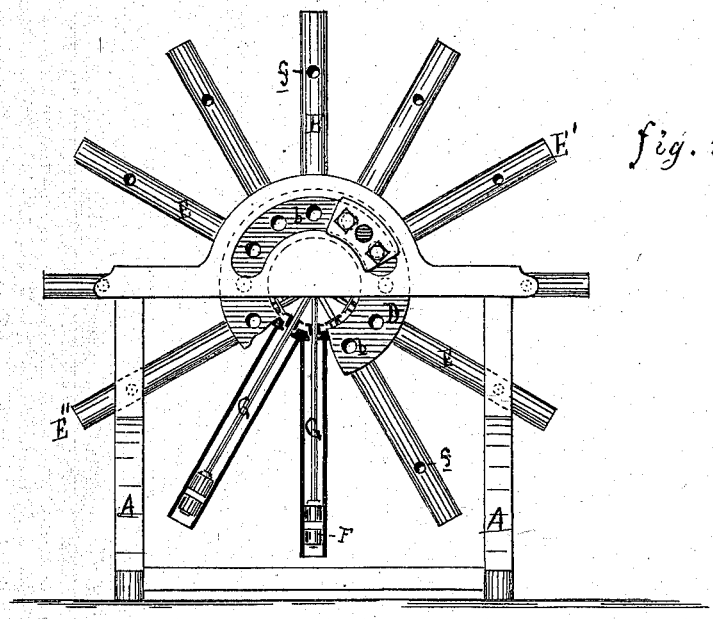

fig. 1

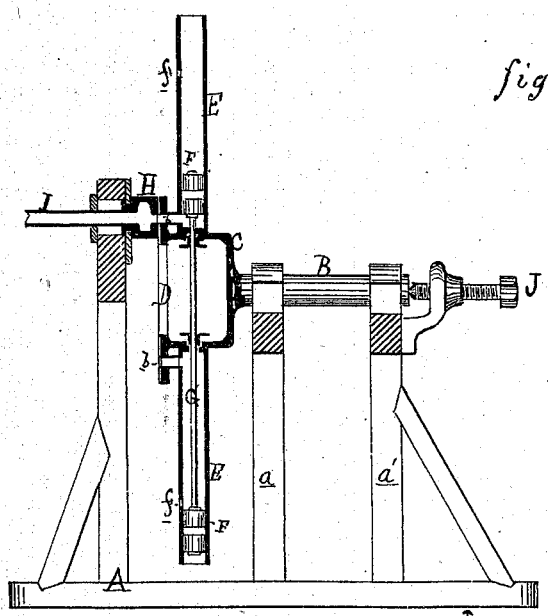

fig. 2

Witnesses:
C. A. Haskell
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UNITED STATES PATENT OFFICE.

JAMES COX, OF BELLE PLAINE, IOWA.

IMPROVEMENT IN ROTARY ENGINES.

Specification forming part of Letters Patent No. 115,171, dated May 23, 1871.

To whom it may concern:

Be it known that I, JAMES COX, of Belle Plaine, in the county of Benton and State of Iowa, have invented a new and useful Improvement in Rotary Engines; and I do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon and being a part of this specification, in which—

Figure 1 is a front elevation of my engine, partially in section. Fig. 2 is a vertical section of the same through a pair of the cylinders.

Like letters refer to like parts in each figure.

The nature of this invention relates to an improved construction of rotary engines; and it consists in certain cylinders radiating from a common hub, in piston-weights arranged within these cylinders, and the peculiar manner in which these weights are used as a motive power actuated by steam, as is more fully herhinafter set forth.

In the drawing, A represents a frame, the uprights *a a'* of which support the shaft B of my engine. This shaft B is provided with a hub, C, which, in turn, is provided with a face-plate, D. Radiating from this hub C is a series of cylinders, E, with suitable stuffing-boxes at their inner ends. F are piston-weights, placed in each cylinder respectively, always two of the weights in opposite cylinders being connected by a piston-rod, G; thus as one weight is forced to the outer end of its cylinder the other, or its mate, will be drawn toward the center. In the face-plate D are inlet-ports *b*, connected to the lower end of each cylinder. The steam there entering forces the piston-weight to the outer end of the respective cylinder E', and thereby draws in the piston-weight of its mate cylinder E'' directly opposite, thus producing a leverage. By this leverage in favor of cylinder E' said cylinder is partially caused to revolve or fall, thus bringing the inlet of the cylinder next following opposite the steam-port, whereby the same effect is produced, and so on, throwing out the weights on one side and drawing them in on the opposite side, a continuous revolving motion being produced. Each of the cylinders is provided with an escape-hole, *f*, so as to prevent the "pounding" of the weights upon the inner ends of the cylinders as much as possible by allowing the steam to escape through the holes *f* as soon as the weights have passed them. H is a steam-chest adjustably secured in a central slot, *e*, in the frame, facing the face-plate and its steam-inlet ports. I is a steam-pipe, connecting the steam-chest with the boiler. To secure a tight fitting between the steam-chest and face-plate a set-screw, J, is employed, operating on the shaft B, as shown in the drawing.

It will be seen that by moving the steam-chest to the opposite end of the slot from the one shown in the drawing, the engine will be caused to revolve in an opposite direction.

I do not wish to confine myself to the use of steam as a motive power upon the piston-weights, as compressed air or other gases will answer the same purpose.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The arrangement of a series of cylinders, E, radiating from a common hub, C, and provided with the piston-weights F and piston-rods G, as and for the purpose set forth.

2. The combination of the adjustable steam-chest H, for conveying steam to the cylinder, with the face-plate D, provided with its inlets *b*, constructed and arranged substantially as described, for the purposes set forth.

3. The combination of the shaft B, face-plate D, cylinders E, piston-weights F, piston-rods G, steam-chest H, and set-screw J, arranged and operating substantially as and for the purpose herein set forth and shown.

JAMES COX.

Witnesses:

HARRY S. SPRAGUE,

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