N. & A. W. Jackson,

Rotary Steam Engine.

No. 80,630. Patented Aug. 4, 1868.

Fig. 1

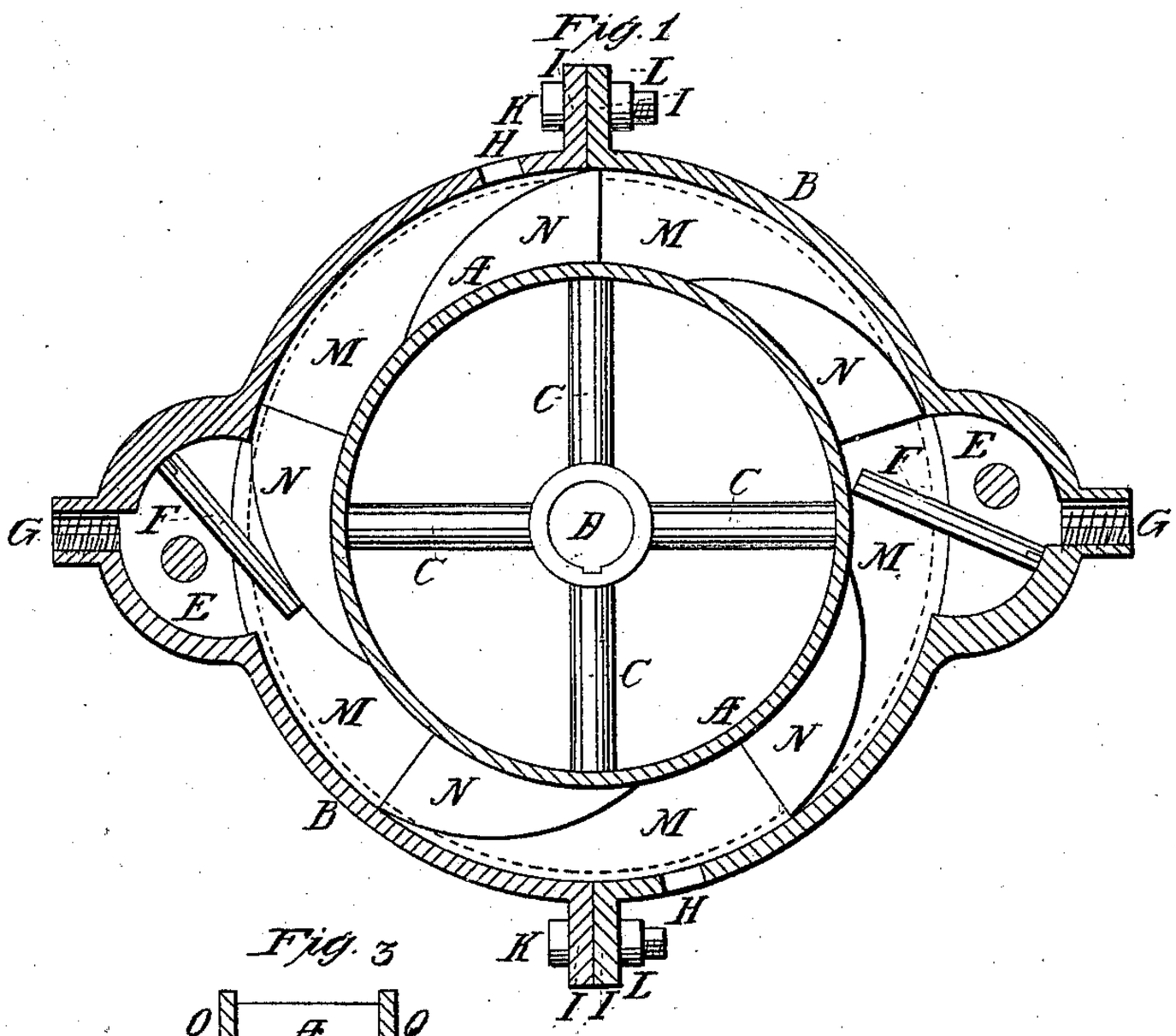


Fig. 3

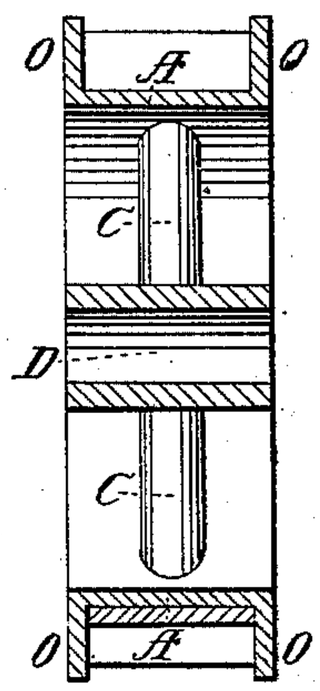
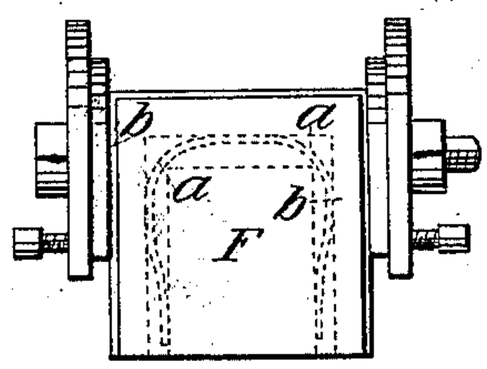


Fig. 2



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NOAH JACKSON AND A. W. JACKSON, OF NAPOLEON, OHIO.

Letters Patent No. 80,630, *dated August* 4, 1868.

IMPROVEMENT IN ROTARY STEAM-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that we, NOAH JACKSON and A. W. JACKSON, of Napoleon, in the county of Henry, and in the State of Ohio, have invented certain new and useful Improvements in Rotary Engines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of our invention consists—

First, in the construction of a rim-wheel, provided with flanges on each side, and with metal partitions put on the rim between these flanges, in such a manner as to form, in conjunction with the outside covering or casing, steam-tight chambers.

Second, in the construction of the outside covering or casing which fits tightly inside and around the flanges of the rim-wheel, to confine the steam thereto, and is provided with ports for the ingress and egress of the steam.

Third, in the construction of pivoted valves, on the inside of the casing, opening or closing the inductive ports, to admit or shut off the steam from the chambers in the rim-wheel.

Fourth, in the manner of packing said valves by steam-pressure, so that when closed they will fit tightly in their places, and prevent steam from entering the chambers.

In order to enable others skilled in the art to make and use our invention, we will now proceed to describe its construction and operation, referring to the annexed drawings which form a part of this specification, and in which—

Figure 1 is a longitudinal section,

Figure 2 a side view of the valve, and

Figure 3 a vertical section.

A represents a skeleton-rim wheel, with its spokes C C, and hub D, and which is provided with flanges, O O, projecting one on each side of and around the rim.

On the rim, and between the flanges of said wheel A, one or more partitions, N N, are secured, which partitions are square on one side, and rounded off on the other, and the outside edges thereof so cut off or bevelled as to close tightly to the outside covering when the same is put on, thus forming several distinct and separate steam-tight chambers M M, as shown in fig. 1.

B is the outside covering or casing, enclosing the said wheel, the edges of which casing are grooved in such a manner that they fit in between the flanges, and at the same time extend around and outside of the edges thereof.

The said casing is made in two parts, which are secured together by means of the screws K K passing through the ears I I, of the ends of these parts, and by the nuts L L, tightening the same; and in the centre of the said parts of the casing are steam-chests E E, which are provided with a collar, G, to put the steam-pipe into.

The entrance of the steam from the steam-chests E into the chambers M, is regulated by means of the valves F F, which are pivoted near their centre, and so arranged that when the steam enters the steam-chest, it presses the valve open, and strikes against the square end of the partition N, turning the wheel, and the valve remains open and admitting steam until the rounded side of the next partition strikes the valve, when the same is closed, and remains closed until the outside edge of this second partition has passed the edge of the valve, when the steam again presses it down, and is allowed to enter the next chamber, and strike against the square end of the said new partition, continuing in this manner opening and closing, admitting and shutting off the steam, which is at last discharged through the exhaust-ports H H; the partitions, however, being so arranged that the valves will not be closed at the same time, but when one is closed the other is always open, so that there will be a steady stream of steam turning the wheel.

For the purpose of closing the steam-chests tightly, by means of the valves, these are constructed in the following manner.

They consist of two pieces of metal, riveted together, but so arranged as to form a groove on three sides between them, in which groove the curved spring *a* is placed. Two L-shaped pieces of metal, C C, are then placed in these grooves, on the outside of the spring *a*, and the inner plate being provided with small holes, the steam enters into said groove and presses the L-shaped pieces of metal outward against the sides of the steam-chest, closing it perfectly. The valves are so pivoted in the steam-chests, that, when closed, they form a part of the inside periphery of the casing B.

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

1. The curved spring *a*, in combination with the L-shaped metal pieces *b b*, arranged in the valves F F, substantially as herein set forth.

2. The arrangement of the flanges O O, partitions N N, casing B, valves F F, induction-spouts G G, and exhaust-pipes H H, substantially as herein set forth.

In testimony that we claim the foregoing, we have hereunto set our hands, this 23d day of May, 1868.

NOAH JACKSON,
A. W. JACKSON.

Witnesses:
B. E. SHELDON,
S. M. HAGUE.