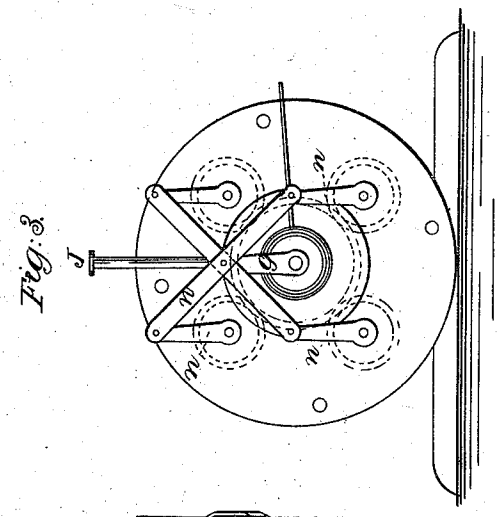
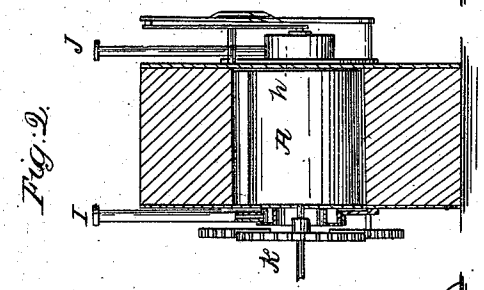
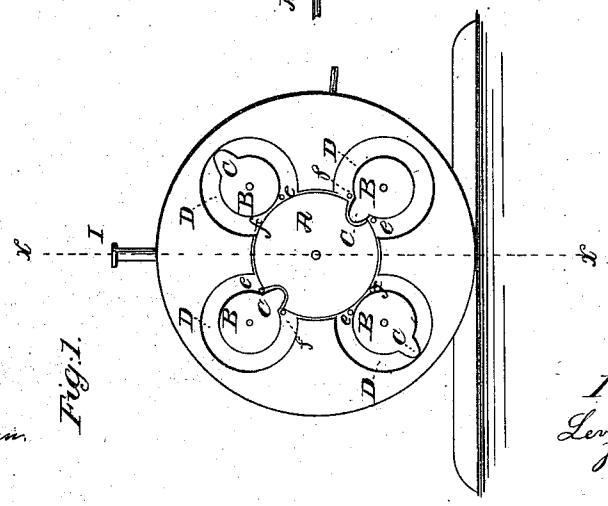
L. F. Goben,

Rotary Steam Engine.

No. 83,483. Patented Oct. 27, 1868.







Witnesses:
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LEVI F. GOBEN, OF SPRING HILL, MISSOURI.

Letters Patent No. 83,483, *dated October* 27, 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 I, LEVI F. GOBEN, of Spring Hill, in the county of Livingston, and State of Missouri, have invented a new and useful Improvement in Rotary Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to certain improvements in what are known as rotary engines, and it consists in the construction and arrangement of parts as hereinafter described.

Figure 1 is a sectional end elevation of the engine, showing the operating parts.

Figure 2 is a vertical section of fig. 1, through the line *x x*.

Figure 3 is an outside view of the engine.

Similar letters of reference indicate corresponding parts.

A is a central cylinder, which passes directly through the centre of the engine. This cylinder has two longitudinal cavities or channels in its outer surface, into which the pistons on other revolving cylinders enter as they revolve.

B represents four piston-cylinders, which revolve in contact with the cylinder A, the surface of which cylinder A forms a point of resistance to the steam when the engine is in motion.

C represents the pistons on the cylinder B.

Each of the cylinders B operates in a steam-chamber, D, as seen in the drawing. The steam is admitted into these cylinders through the ports *e*, and exhausted after the cylinder has made its revolution through the ports *f*, and out through the side of the engine.

The steam-ports *e* are in communication with a hollow cut-off valve, which is operated by a crank, *g*. *h* is the casing of the valve. The revolution of the valve corresponds with that of the cylinders B, so that the ports *e* receive steam at the right time to act upon the pistons.

I is the steam-pipe, and J is the exhaust-pipe.

The cylinders B, and the central cylinder A, are connected together by gearing on the side of the engine, as seen at K, so that the power of the steam on the cylinders B is imparted to the central cylinder thereby. They are also connected at the other side of the engine by arms *n* and the crank *g*, as seen in the drawing.

It will be seen that the steam acts continuously on the pistons, and that there is no loss of power from dead-centres.

Having thus described my invention,

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

1. The construction of the central cylinder, A, with longitudinal channels adapted to receive the pistons C of the cylinders B, substantially as herein shown and described.

2. The steam-chambers D, having ports *e f*, and adapted to receive the cylinders B, provided with pistons C, substantially as herein shown and described.

3. The combination of the central cylinder, having longitudinal grooves, the cylinders B, provided with pistons C, and the steam-chambers D, with ports *e f*, all arranged within the case A, to operate substantially as described.

4. The means for operating the cut-off valve, consisting of the arms *n n* and crank *g*, all arranged to operate substantially as herein shown and described.

The above specification of my invention signed by me, this 20th day of April, 1868.

LEVI F. GOBEN.

Witnesses:

JAMES S. MOSELEY,
JOHN K. CLARK.