

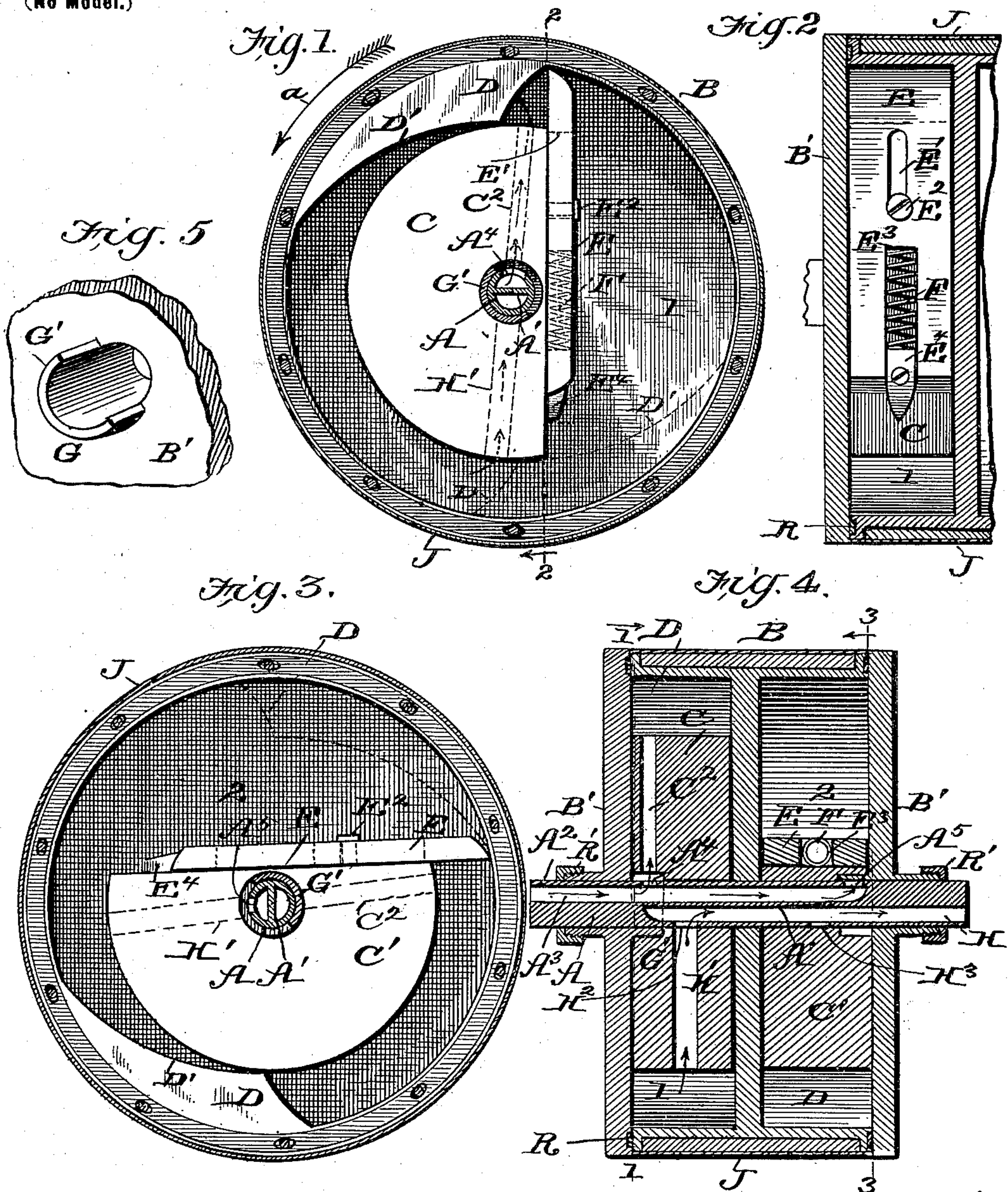
No. 662,467.

Patented Nov. 27, 1900.

G. O. SANDERSON.
ROTARY CYLINDER STEAM ENGINE.

(Application filed Mar. 16, 1900.)

(No Model.)



WITNESSES:

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UNITED STATES PATENT OFFICE.

GEORGE OLIVER SANDERSON, OF GRANT, IOWA.

ROTARY-CYLINDER STEAM-ENGINE.

SPECIFICATION forming part of Letters Patent No. 662,467, dated November 27, 1900.

Application filed March 16, 1900. Serial No. 8,975. (No model.)

To all whom it may concern:

Be it known that I, GEORGE OLIVER SANDERSON, of Grant township, county of Cerro Gordo, State of Iowa, have invented a new and useful Improvement in Steam - Pulleys, of which the following is a specification.

My invention relates to rotary engines, and particularly to that class in which the cylinders rotate about a stationary shaft, so as to act as a pulley for transmitting power; and it has for its object an engine or pulley of the character which will utilize the force of the steam to the best advantage and which will be of simple construction.

The invention consists in certain details of construction and arrangement of the parts, which I shall hereinafter specifically describe and claim.

Reference is to be had to the accompanying drawings, forming part of this specification, in which like characters of reference indicate corresponding parts in all the views.

Figure 1 is a sectional view of my improved pulley, taken on the line 1 1 of Fig. 4. Fig. 2 is a vertical section on the line 2 2 of Fig. 1. Fig. 3 is a section on the line 3 3 of Fig. 4. Fig. 4 is a central vertical section, and Fig. 5 is a detail perspective view, of a portion of a cylinder-head.

Referring to the drawings, A designates the stationary shaft on which the cylinder B is rotatably mounted, said shaft being partially tubular to form passages for the admission and exhaust therethrough of the steam to and from the cylinder. For this purpose the shaft A is divided longitudinally by a partition A', joined solidly to diametrically opposite portions of the shaft where the latter extends through the cylinder-heads B'. The end A² of the shaft is the feed or admission end, the steam passing through the admission-passage A³ and out into the compartment 1 of the cylinder through the port A⁴ and the passage C² in the steam-chest C and out into the compartment 2 of the cylinder through the port A⁵ and a similar passage in the chest C'. Upon admission to the compartment 1 and afterward to the compartment 2 the steam acts between the abutments D and the pistons E, the latter being provided with elongated slots E', through which headed pins E² on the flat face of the chests C and C' are inserted, where-

by the pistons are mounted to slide, and the pistons are further provided with recesses E³ in their rear ends, forming guides embracing the blocks E⁴, springs F, located between the blocks and the opposite ends of the recesses, serving to press the beveled forward ends of the pistons tightly against the cylinder. Each of the cylinder-heads B' has secured thereto a collar G, which surrounds the shaft, and has a semicircular flange G' at its inner side, forming a cut-off for the ports A⁴ and A⁵. The two flanges are placed diametrically opposite, so that it is understood steam is admitted alternately and not simultaneously to the two compartments 1 and 2 of the cylinder B.

The steam alternately admitted between the abutments and the pistons of each compartment will drive the cylinder in the direction of the arrow a in Fig. 1, causing the beveled ends of the pistons to ride upon the inclined faces D' of the abutments, the steam exhausting through the exhaust-passages H' in the steam-chests C and C', the ports H² and H³ in the shaft, and out of the shaft through the passage H.

Suitable packing-rings R and R' are fitted between the cylinder and its heads and between the latter and the ends of the shaft. A covering J, of asbestos or the like, surrounds the cylinder, whereby to protect a belt from the heat within the same.

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

1. In an apparatus of the character described, a stationary tubular shaft having a partition dividing it longitudinally and forming admission and exhaust passages opening at opposite ends of the shaft, the latter being further provided with admission and exhaust ports near each end communicating with said passages, chests fixedly held on said shaft and provided with opposite passages communicating with the ports in the shaft, and a cylinder rotatably mounted on said shaft, said cylinder being divided into compartments and having diametrically-arranged cut-offs, as set forth.

2. In an apparatus of the character described, a tubular shaft having a partition dividing it longitudinally into admission and exhaust passages and having ports commu-

nicating with said passages, the said passages opening at opposite ends of the shaft, a steam-chest fixedly held on said shaft near each end thereof and having passages registering with
5 said ports, spring-pressed slidable pistons mounted on said chests, a cylinder divided into compartments rotatably mounted on said shaft and having inclined abutments adapted to ride over said pistons, and a diametrically-
10 arranged cut-off secured in each head of the cylinder, as set forth.

3. In an apparatus of the character described, the shaft, the chest fixedly held thereon, means for admitting and exhausting

steam through the shaft and chest, a piston 15 provided with an elongated slot through which a headed pin, secured to the chest, extends, and also provided with a recess in its rear end, a block secured to the chest and fitted in said recess, a spring located in the 20 recess between the end wall of the same and the block, and a cylinder rotatably mounted on said shaft and having an abutment adapted to ride on said piston, as set forth.

GEORGE OLIVER SANDERSON.

Witnesses:

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