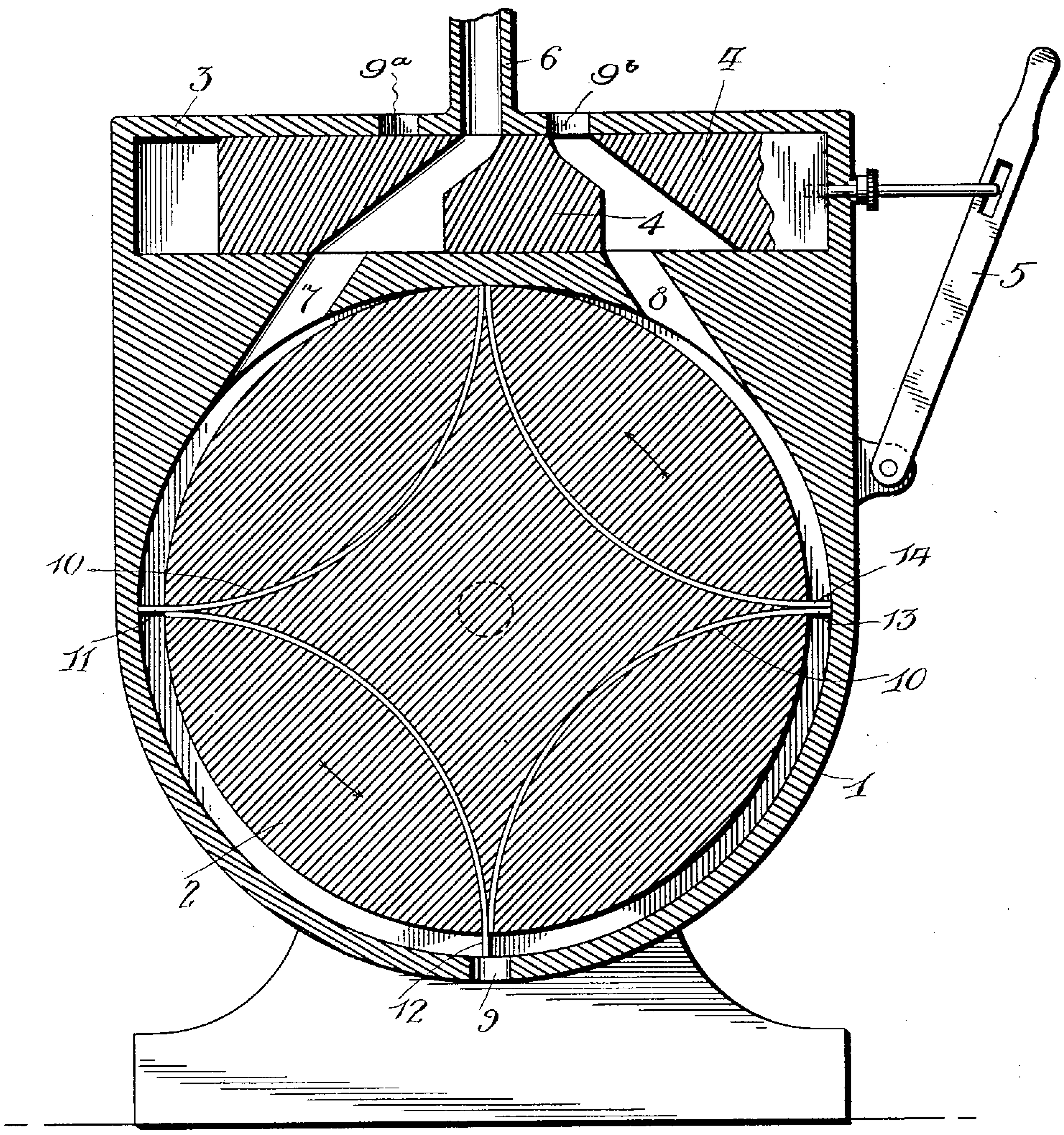
No. 710,977. Patented Oct. 14, 1902.

W. P. HOLMAN.

ROTARY STEAM ENGINE.

(Application filed May 29, 1902.)

(No Model.)



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UNITED STATES PATENT OFFICE.

WILLIAM P. HOLMAN, OF BELT, MONTANA.

ROTARY STEAM-ENGINE.

SPECIFICATION forming part of Letters Patent No. 710,977, dated October 14, 1902.

Application filed May 29, 1902. Serial No. 109,453. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM P. HOLMAN, a citizen of the United States, residing at Belt, in the county of Cascade and State of Montana, have invented certain new and useful Improvements in Rotary Steam-Engines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to rotary steam-engines of the eccentric-piston type.

The object of the invention is to provide an engine of this character which shall be simple of construction, durable in use, comparatively inexpensive of production, effective in action, and one in which the use of springs for shooting or retracting the wings is entirely overcome, thus enabling me to produce an engine which shall be positive in action and not liable to get out of order, which would not be the case were springs employed, owing to the varying temperatures to which they are subjected.

With the above and other objects in view the invention consists in certain novel features of construction and combination and arrangement of parts, which will be hereinafter fully described, defined in the appended claim, and illustrated in the accompanying drawing, in which I have illustrated in a vertical sectional view a conventional form of an engine embodying my invention.

In the drawing, 1 denotes the cylinder; 2, the rotary piston eccentrically mounted in the cylinder; 3, the valve-chest; 4, the slide-valve mounted in the said chest; 5, the lever connected to said valve for reversing the same; 6, the steam-inlet pipe; 7 and 8, ports establishing communication between the valve-chest and cylinder, and 9, 9^a, and 9^b the exhaust-ports.

10 denotes a series of slots or grooves formed in the piston and communicating with the cylinder at each end and curved on a line inverse to the circumference of the piston. Arranged to slide within these slots or grooves are wings 11, 12, 13, and 14.

The operation of the engine is as follows: Assuming steam to be entering the port 7, it will be confined between the uppermost point of the periphery of the piston and lower end of the wing 11, which extends entirely across the cylinder and closes the space between the cylinder and piston. The steam expands and drives the piston in the direction of the arrow until the next succeeding wing 14 reaches a position to be acted upon by the live steam. In the meantime the wing 11 has reached a point in its rotary movement to allow a portion of the dead steam to exhaust through the port 9, and in the further movement of the wing 11 that end which has been described as its lower end becomes its upper end, and as it approaches the highest point of the wall of the cylinder this end is forced downwardly or assumes the position of the wing 14 shown in the drawing, but not before the remaining portion of the dead steam has escaped through the port 9^b, now uncovered by the valve. The wing 11 finally reaches the position at which it was in the beginning of the description of its rotation, or the position shown in the drawing.

I am aware that it is not new to eccentrically mount a rotary piston within a cylinder and provide it with radially-disposed inlets actuated by springs for forcing the wings outwardly during certain periods of the rotation of the piston, and therefore do not claim such a construction.

What I do claim, however, and desire to secure by Letters Patent of the United States, is—

In a rotary engine, the combination with a cylinder, of an eccentric piston provided intermediate of its width with arcuate slots curving inversely to its periphery, said slots intersecting in pairs at the points where they open through the periphery of the piston, and continuous arcuate wings sliding in said slots, said wings being of a length greater than the slots and having their ends arranged in juxtaposition and projecting in pairs, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

WILLIAM P. HOLMAN.

Witnesses:

ROBERT MCCULLOUGH,

C. H. PROVIN.