

No. 854,036.

PATENTED MAY 21, 1907.

B. HANSON.
ENGINE VALVE.

APPLICATION FILED OCT. 13, 1906.

2 SHEETS—SHEET 1.

Fig-1-

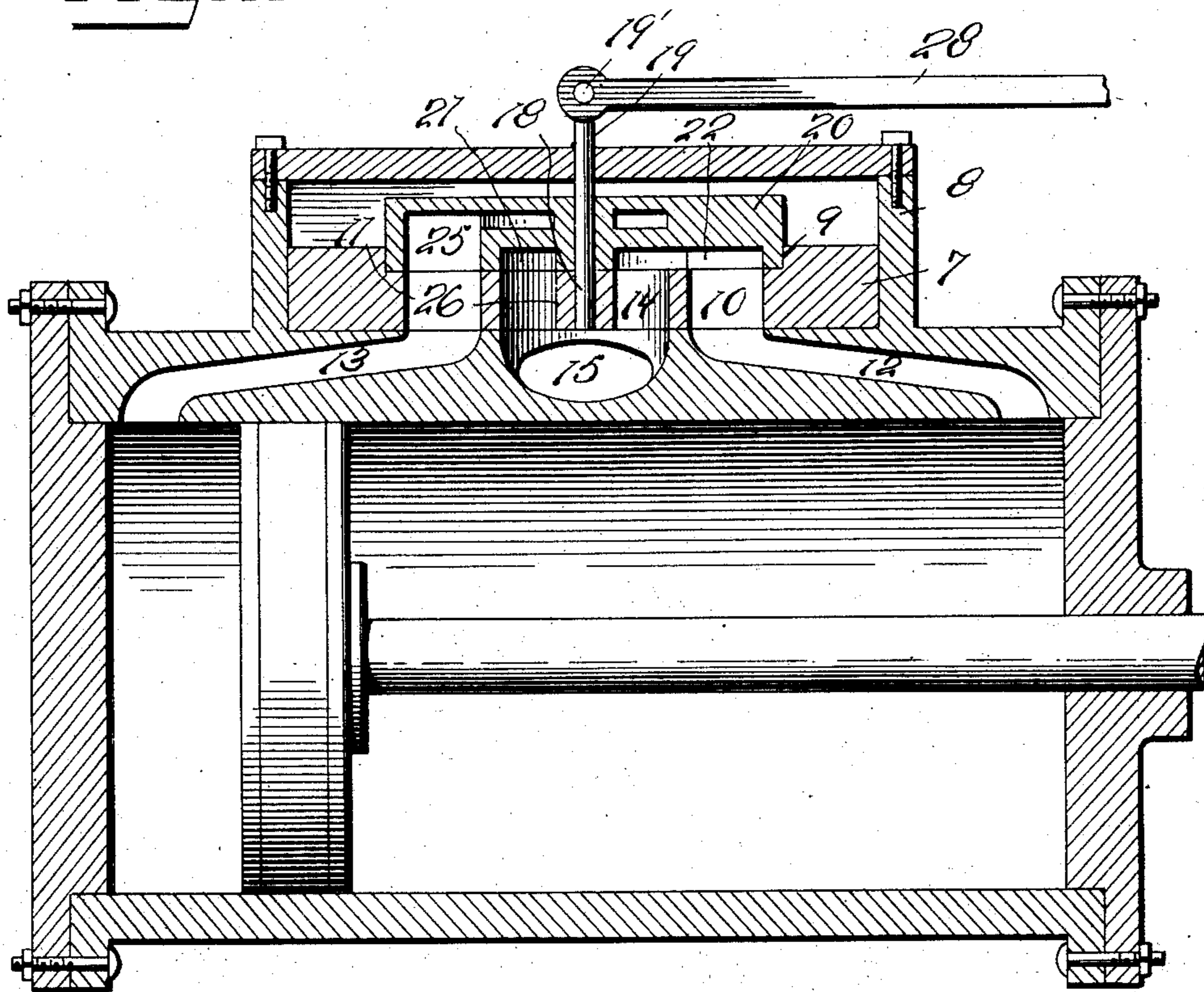
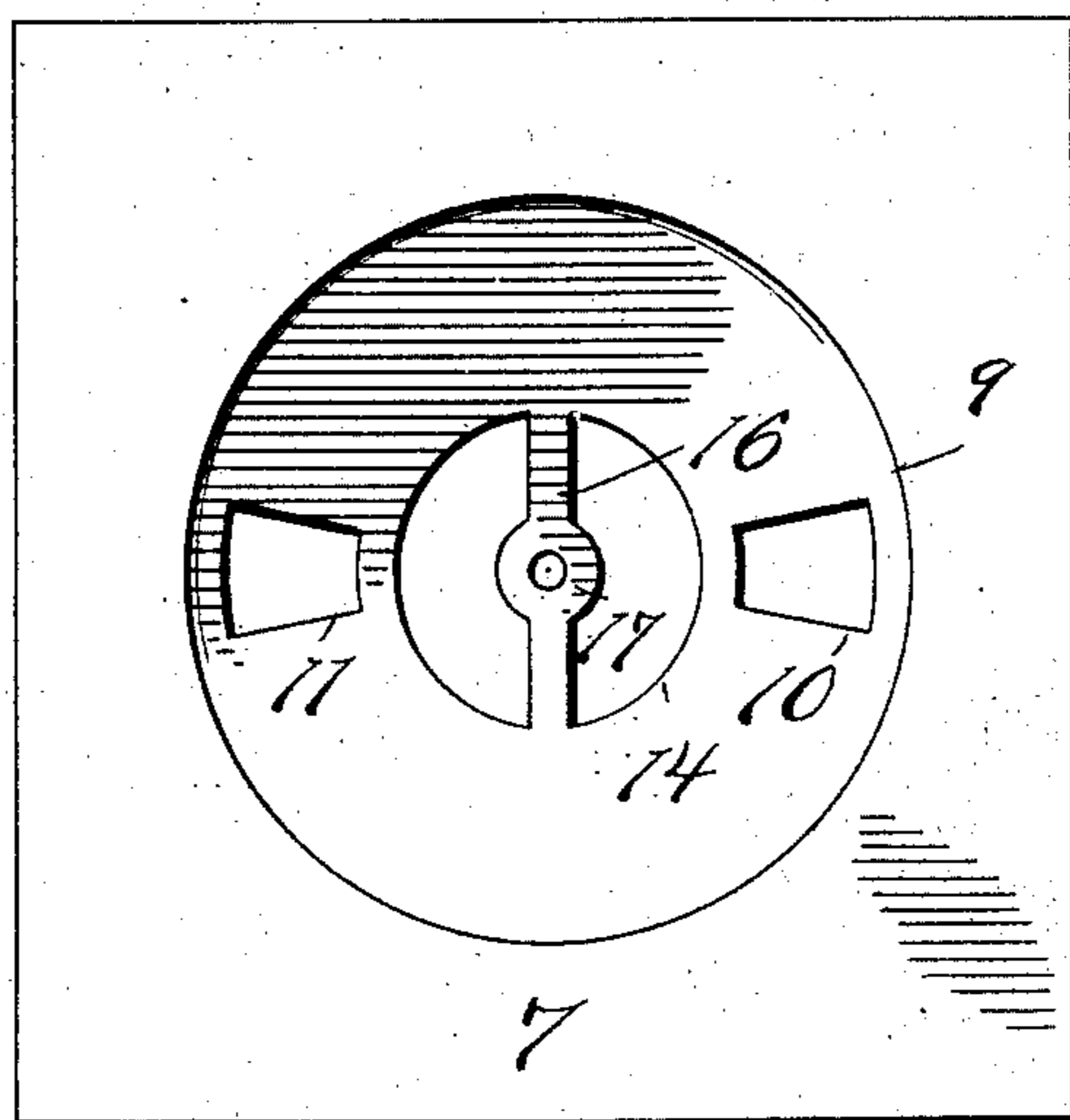


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

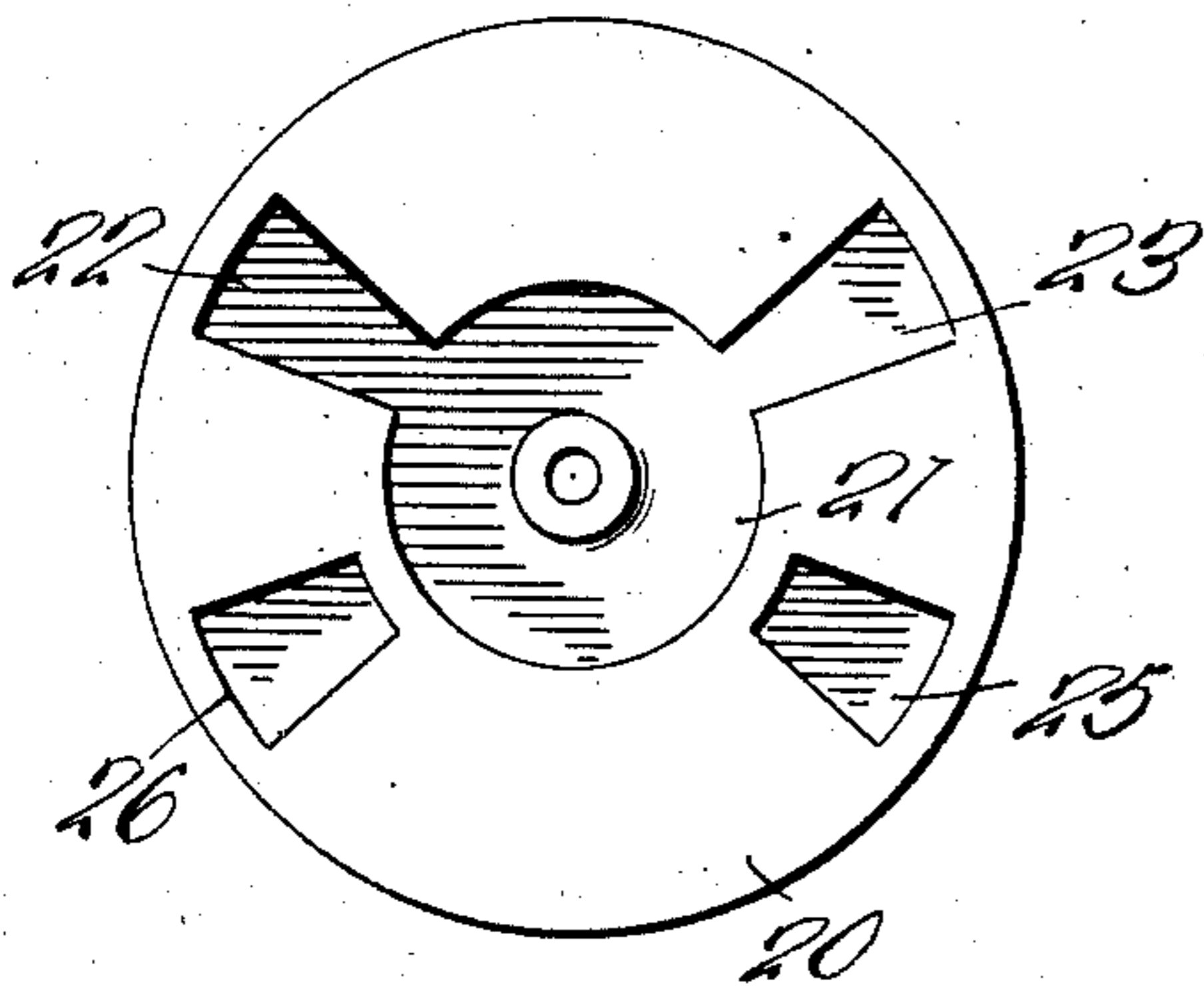


Fig. 4.

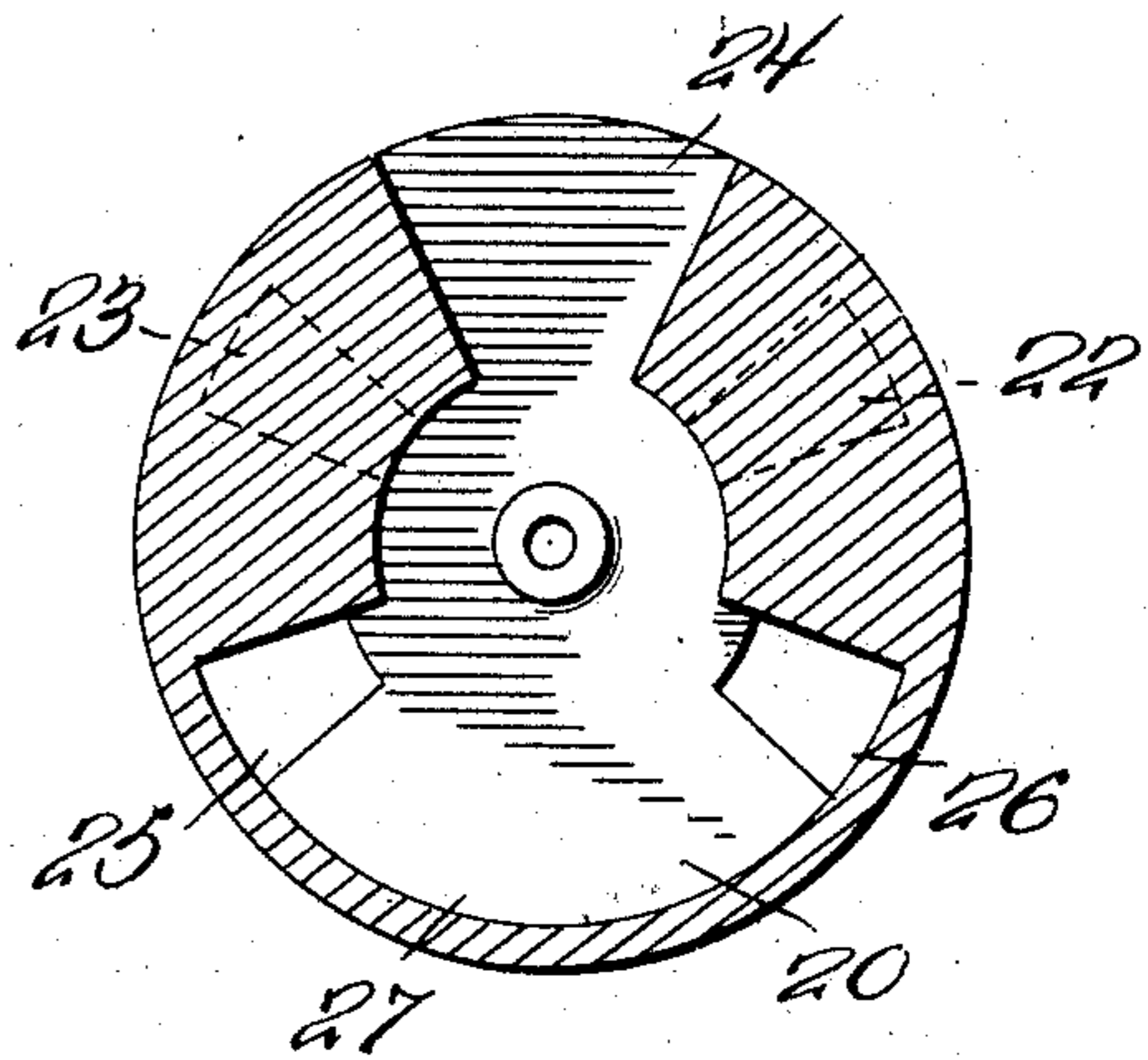
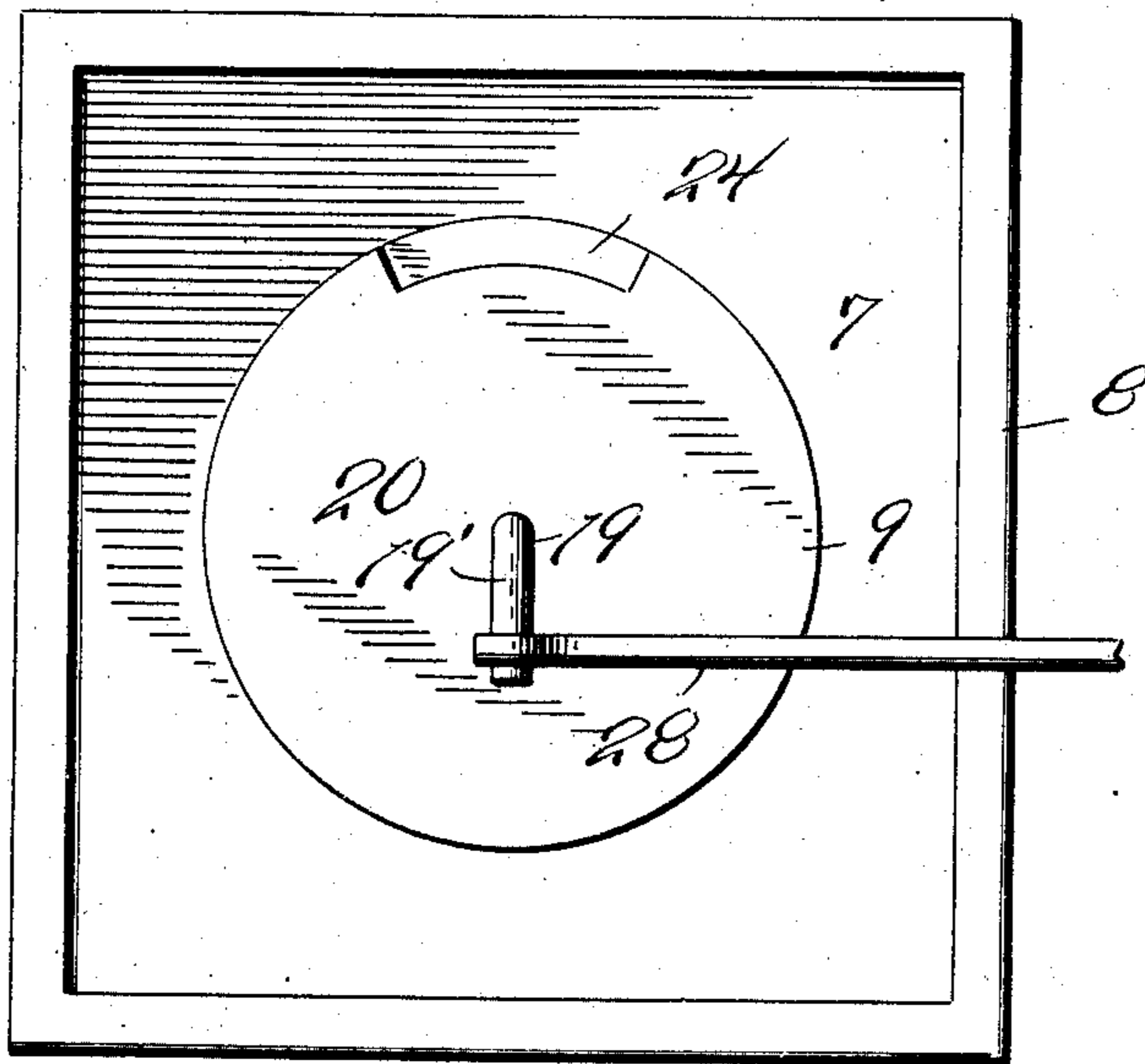


Fig. 5.



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UNITED STATES PATENT OFFICE.

BERNARD HANSON, OF SHROYER, KANSAS.

ENGINE-VALVE.

No. 854,036.

Specification of Letters Patent

Patented May 21, 1907.

Application filed October 13, 1906. Serial No. 338,733.

To all whom it may concern:

Be it known that I, BERNARD HANSON, a citizen of the United States, residing at Shroyer, in the county of Marshall, State of Kansas, have invented certain new and useful Improvements in Engine-Valves; and I do hereby 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.

This invention relates to valves, and more particularly to those for steam engines, and has for its object, to provide a valve of oscillatory type, which may be easily applied to an engine and which may be operated to admit steam to the valve ports of the cylinder alternately.

Other objects and advantages will be apparent from the following description, and it will be understood that changes in the specific structure shown and described may be made without departing from the spirit of the invention.

In the drawings forming a portion of this specification and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a longitudinal section of an engine cylinder provided with the present invention. Fig. 2 is a top plan of the block with the disk removed. Fig. 3 is a bottom plan of the disk. Fig. 4 is a horizontal section through the disk. Fig. 5 is a top plan view of the invention, showing the disk in the block, and the finger with a shift rod attached thereto.

Referring now to the drawings, the present invention comprises a rectangular block 7, which is disposed within the steam chest 8 of the engine, this block being removable, as will be readily understood, and having in its upper surface a circular recess 9, diametrically opposite ports 10 and 11, being formed through the bottom of this recess, and registering with the ports 12 and 13 respectively of the cylinder.

A central opening 14 is formed through the bottom of the recess 9, registering with the exhaust port 15 of the cylinder, and having a horizontal web 16 extending diametrically thereacross. This web has a central socket 17, which receives the lower end 18 of a vertical stem 19, this stem being revoluble in the socket, and having mounted thereupon a horizontally disposed valve disk 20, which lies within the recess 9, and which has a cen-

tral recess 21 in its under surface, registering with the opening 14. Recesses 22 and 23 are also formed in the under surface of the disk, outwardly of the recess 21, and communicating therewith, and these recesses 22 and 23 lie in circumferential alinement, but out of diametrical alinement and their relative positions are such that the disk may be rocked to bring them alternately into registration with the ports 10 and 11, the recess 22 lying in registration with the port 10, when the recess 23 is out of registration with the port 11, and vice versa.

A transverse passage 24 is formed in the disk, opening at one end through the periphery of the disk, and passages 25 and 26 respectively open through the under face of the disk, and are connected with the transverse passage 24 by circumferentially extending passage 27, communicating with the transverse passage 24 at the inner end thereof, and these passages 25 and 26 lie in transverse alinement diametrically of the disk with the recesses 22 and 23 respectively.

It will thus be apparent that when the recess 23 is in registration with the port 11, the passage 26 will be in registration with the port 10, and thus steam from the steam chest 8 will be free to pass through the passage 24, and one of the passages 27 to the passage 26, and thence through the port 10, and the port 13 into one end of the cylinder, dead steam passing out through the ports 12 and 11 to the recess 23, and thence to the recess 21, from which it passes through the opening 14 to the exhaust port 15. Oscillation of the disk will shift the registering passages, as will be readily understood, to admit steam to the opposite end of the cylinder. The stem 19 extends upwardly through the top of the chest 8, and has a lateral finger 19' to which a shift bar 28 is attached for oscillation of the bar.

What is claimed is:

1. The combination with an engine cylinder, having a steam chest thereupon, and having spaced ports communicating with the interior of the steam chest, and an intermediate exhaust port, of a block removably disposed within the steam chest and having ports registering with the steam ports of the cylinder and an intermediate opening registering with the exhaust port of the chest, a web extending across the intermediate opening, a stem journaled in the web and a passaged valve mounted upon the stem, said valve be-

ing arranged for movement to establish communication between the ports of the block and the intermediate opening and to establish communication between the ports and
5 the interior of the steam chest alternately.

2. A valve mechanism for engines, comprising a block having spaced ports therein and an intermediate opening, a web extending transversely of the opening, a stem jour-
10 naled in the web, and a disk mounted upon the stem for movement therewith, said disk having a recess in its end face communicating with the intermediate opening of the block, and having a pair of recesses in its end sur-
15 face outwardly of the central recess and communicating therewith, said disk having a pair

of passages, one diametrically opposite each of the second named recesses and having a third passage communicating with the first named passages and with a surface of the
20 disk other than the under surface thereof, said disk being movable to bring its first named passages and corresponding recesses into registration with the ports of the block alternately.

In testimony whereof, I affix my signature,
in presence of two witnesses.

BERNARD HANSON.

Witnesses:

C. J. D. KOESTER,
GEO. P. SCHMIDT.