

T. F. SCOLLARD.
 ROTARY STEAM VALVE.
 APPLICATION FILED MAY 6, 1909.

960,717.

Patented June 7, 1910.

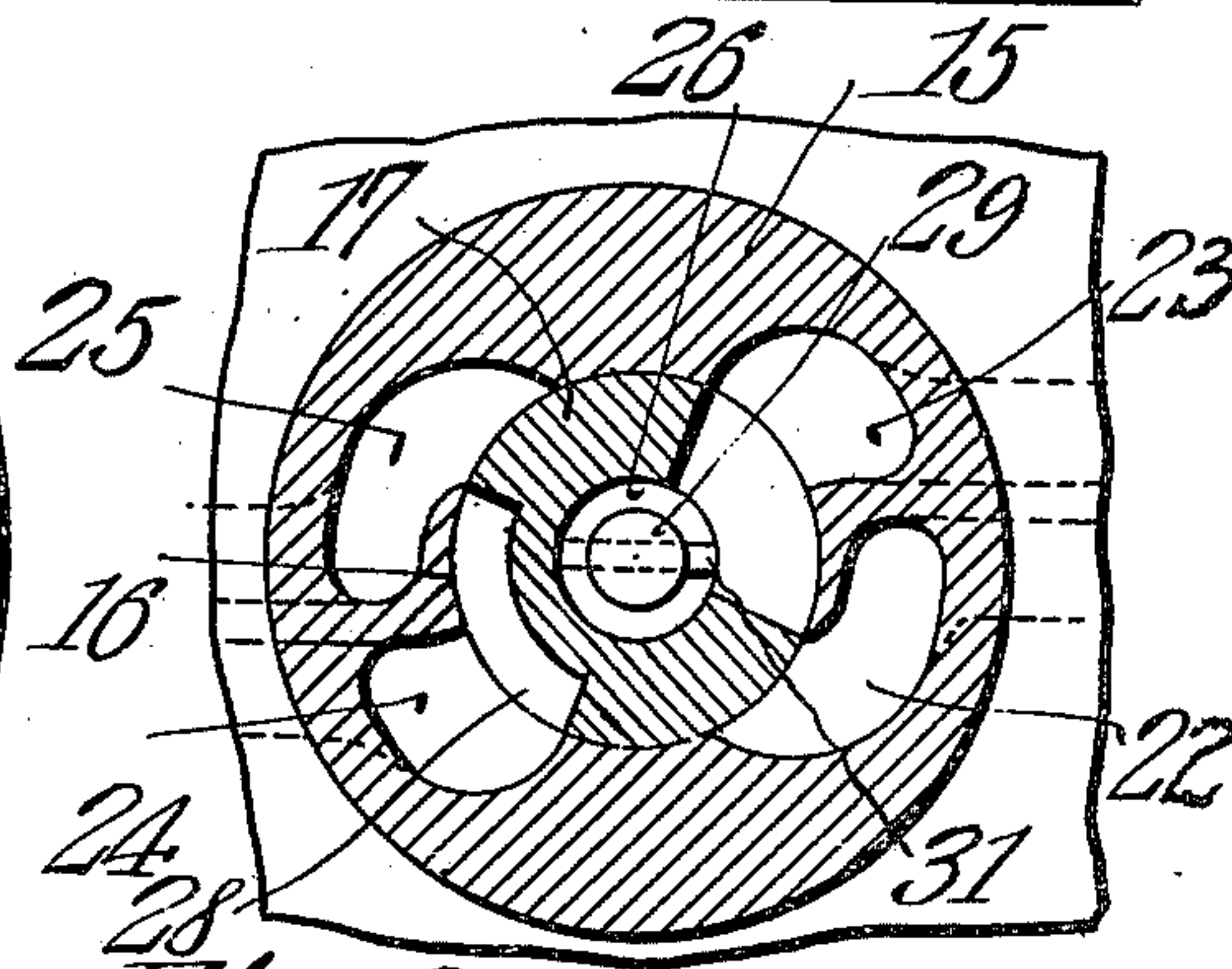
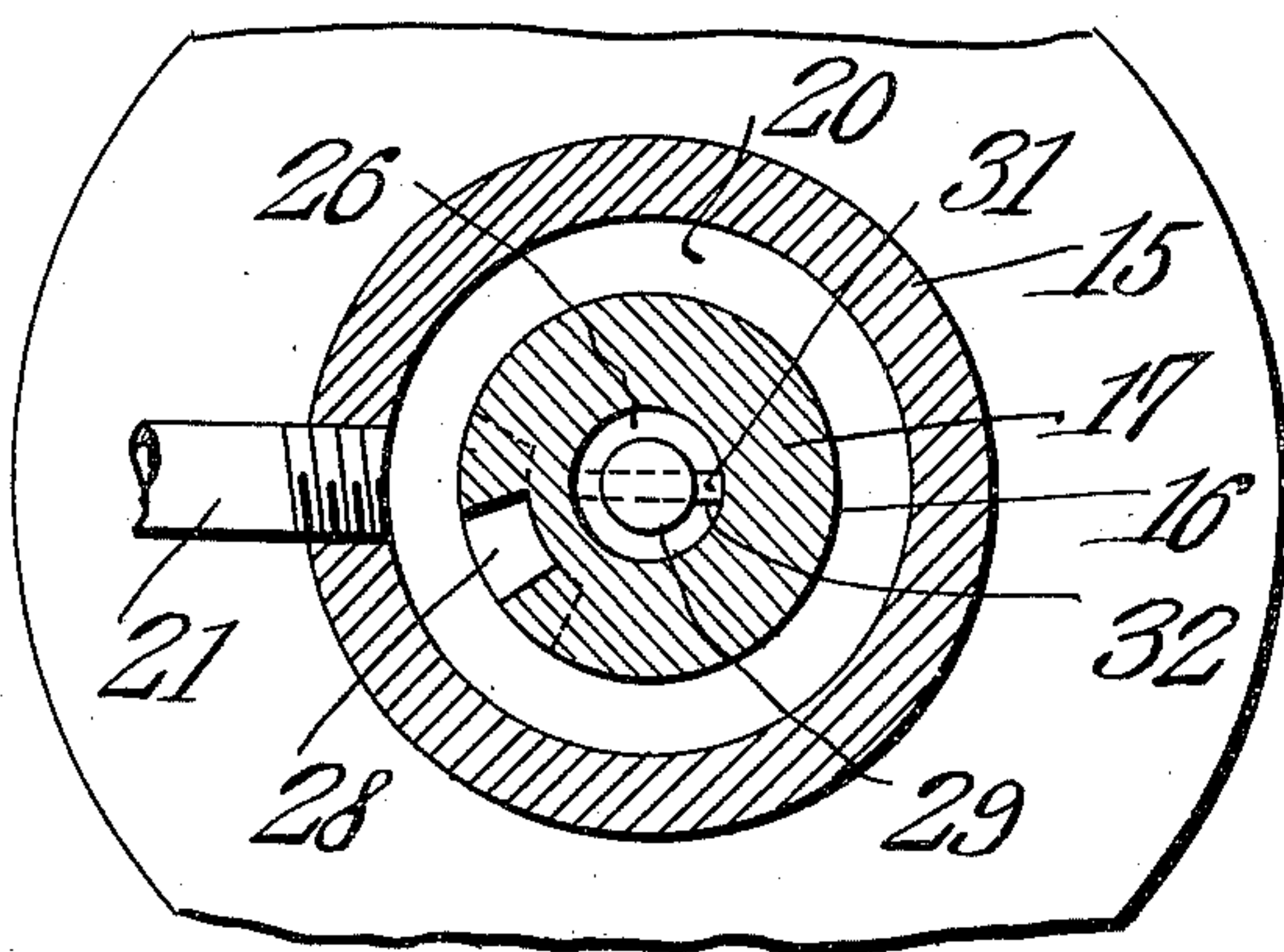
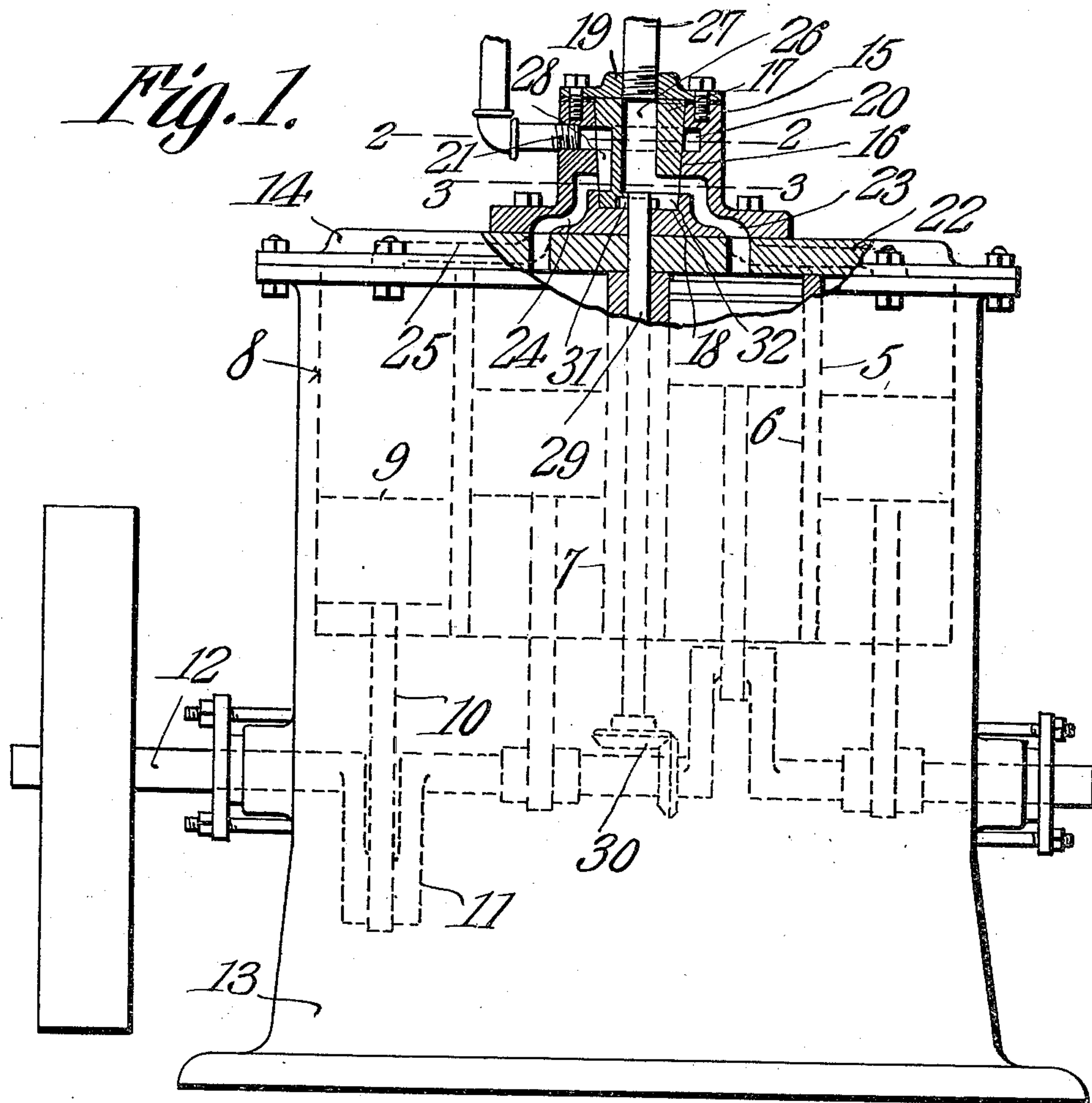


Fig. 2.
 Witnesses
E. J. Stewart
M. Schmitt

Fig. 3.
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UNITED STATES PATENT OFFICE.

THOMAS F. SCOLLARD, OF WARSAW, INDIANA.

ROTARY STEAM-VALVE.

960,717.

Specification of Letters Patent.

Patented June 7, 1910.

Application filed May 6, 1909. Serial No. 494,302.

To all whom it may concern:

Be it known that I, THOMAS F. SCOLLARD, a citizen of the United States, residing at Warsaw, in the county of Kosciusko and State of Indiana, have invented a new and useful Rotary Steam-Valve, of which the following is a specification.

This invention relates to improvements in rotary steam valves, it being designed more particularly for the engine shown in my Patent No. 912,183, dated Feb. 9, 1909.

It is the object of the present invention to provide a valve which is perfectly balanced, and also one which requires but little power for its operation under high pressure.

Another object is to provide a valve which will permit greater expansion, and which will exhaust without excessive back pressure.

The invention also has for its object to provide a valve which is adjustable to take up wear.

With the foregoing objects in view, the invention consists in a novel construction and arrangement of parts to be hereinafter described and claimed, reference being had to the drawing hereto annexed in which—

Figure 1 is a vertical sectional view showing the application of the invention. Fig. 2 is a horizontal section on the line 2—2 of Fig. 1. Fig. 3 is a horizontal section on the line 3—3 of Fig. 1.

Referring more particularly to the drawing, there is shown an engine provided with four cylinders indicated at 5, 6, 7 and 8 respectively, each of said cylinders being provided with a trunk piston 9 connected by a piston rod 10 to a crank 11 on the drive shaft 12. The several cranks are set 90° apart. The cylinders are supported by a suitable base 13. The upper open ends of the cylinders are covered by a cap plate 14 on which the valve casing 15 is mounted. This casing has a cylindrical bore 16 in which is rotatably mounted a valve plug 17. The valve plug is carefully ground into the bore of the casing in order that a smooth and steam-tight joint may be had. The bore of the casing as well as the valve plug is tapered in form. The floor of the valve casing has a circular depression 18 in which the lower end of the plug 17 fits. The upper end of the valve casing is closed by a cap plate 19 which engages the upper or wider

end of the valve plug, and thus serves to hold the same to its seat. By means of this cap plate 19, the valve plug may be adjusted to take up wear.

The bore 16 of the valve casing has a circumferential groove 20 which is in the plane of the exhaust outlet 21. The bore is also entered by cylinder ports, one of such ports extending from the bore to each cylinder. The port of the cylinder 5 is indicated at 22, the port of the cylinder 6 at 23, and the ports of the cylinders 7 and 8 at 24 and 25, respectively.

The plug 17 has an axial steam passage 26 which is in communication at one end with the steam supply pipe 27 entering through the cap 19. At its opposite end the passage opens through the side of the plug in the plane of the cylinder ports, so that when the plug is rotated, one after the other of said ports will be placed in communication with the passage 26. Diametrically opposite the point where the passage 26 opens into the side of the plug 17, said plug is formed with a groove 28, one end of which is in the plane of the cylinder ports, and the opposite end of which opens into the circumferential groove 20. It will be seen that through the groove 20 the groove 28 is at all times in communication with the exhaust outlet 21, and when the valve plug is rotated, one after the other of the cylinder ports will be placed in communication with the groove 28, and the exhaust from the cylinders takes place successively.

The valve plug 17 is operated by a stem 29 which is rotated from the drive shaft 12 by means of a bevel gearing 30. The connection between the stem and the valve plug is made by means of a key 31 passing transversely through the stem and seating in a slot 32 made in the plug.

What is claimed is:

A valve comprising a casing having a cylindrical bore provided with a circumferential groove, said casing having inlet, exhaust and cylinder ports, the exhaust port entering the groove, and the cylinder ports lying in a common plane, a rotary valve plug working in the bore of the casing, and having an axial steam passage communicating with the inlet port, and opening through the side of the plug in the plane of the cylin-

der ports, and said plug also having a longitudinal groove in its outer surface one end of which groove is in the plane of the cylinder ports, and the other end of which
5 opens into the aforesaid circumferential groove.

In testimony that I claim the foregoing

as my own, I have hereto affixed my signature in the presence of two witnesses.

THOMAS F. SCOLLARD.

Witnesses:

CHARLES B. BENTLEY,
OTIS C. BUTT.