No. 784,179. PATENTED MAR. 7, 1905.

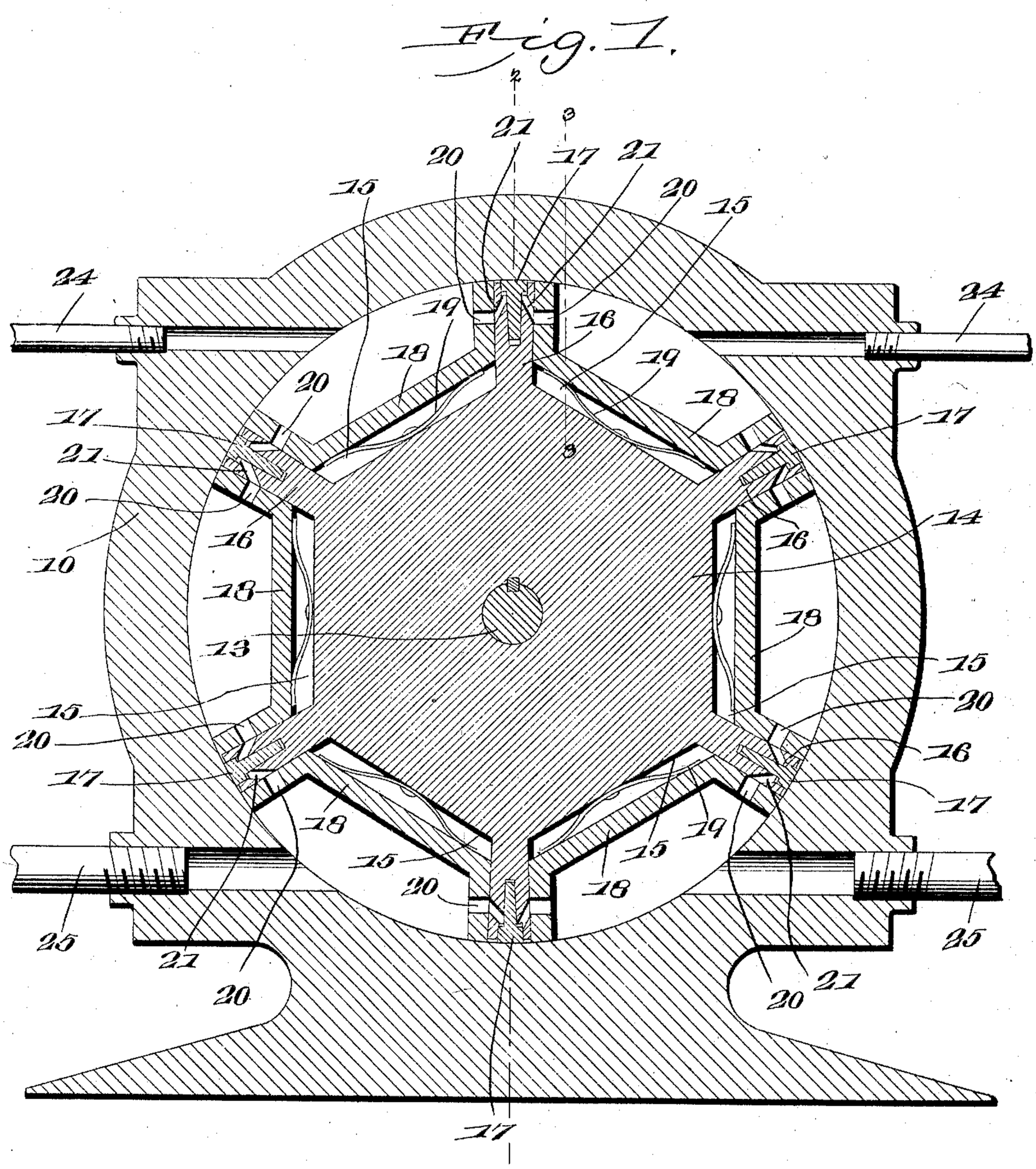
C. P. RHOY.

ROTARY ENGINE.

APPLICATION FILED DEC. 2, 1904.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

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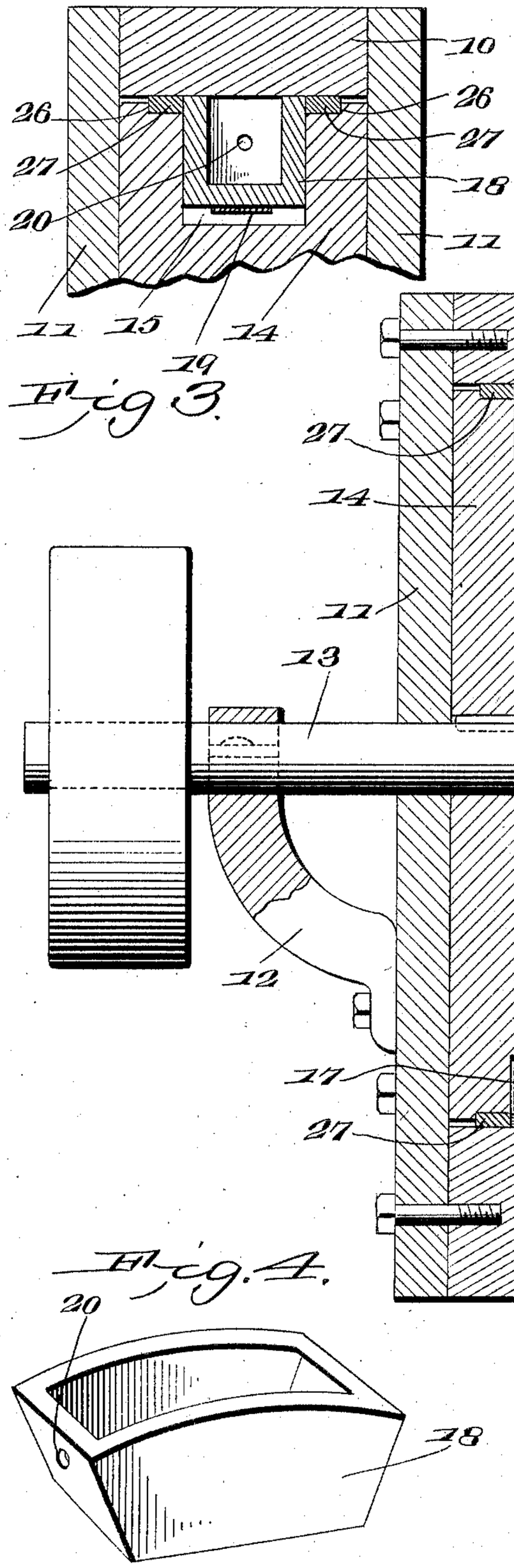

Fig 3.

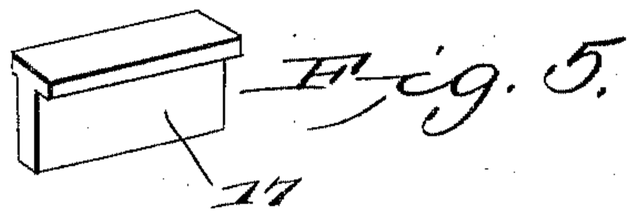

Fig. 5.

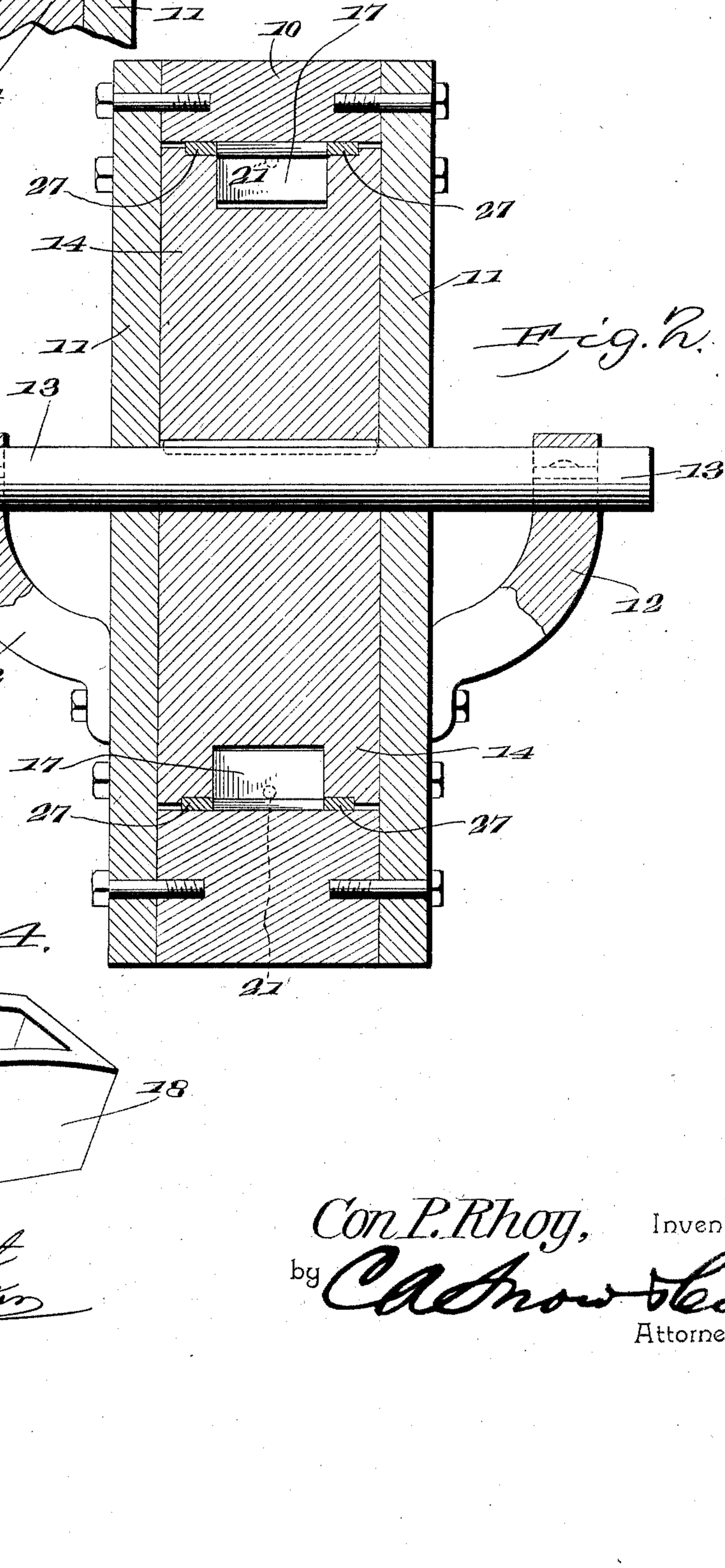

Fig. 2.

Fig. 4.

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No. 784,179. Patented March 7, 1905.

UNITED STATES PATENT OFFICE.

CON PAUL RHOY, OF STIRLING CITY, CALIFORNIA.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 784,179, dated March 7, 1905.

Application filed December 2, 1904. Serial No. 235,235.

To all whom it may concern:

Be it known that I, CON PAUL RHOY, a citizen of the United States, residing at Stirling City, in the county of Butte and State of California, have invented a new and useful Rotary Engine, of which the following is a specification.

This invention relates to rotary engines, and has for its principal object to provide a novel form of engine in which the part subjected to the greatest friction may be readily renewed when worn or broken, all of the parts being made interchangeable, so that the expense of repairs will be reduced to a minimum.

A further object of the invention is to simplify and cheapen the arrangement of the packing employed at the periphery of the revoluble piston.

With these and other objects in view, as will more fully hereinafter appear, the invention consists in certain novel features of construction and arrangement of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that various changes in the form, proportions, size, and minor details of the structure may be made without departing from the spirit or sacrificing any of the advantages of the invention.

In the accompanying drawings, Figure 1 is a longitudinal sectional elevation of a rotary engine constructed in accordance with the invention. Fig. 2 is a transverse sectional view of the same on the line 2 2 of Fig. 1. Fig. 3 is a similar view on the line 3 3 of Fig. 1. Fig. 4 is a detail perspective view of one of the removable buckets carried by the piston-drum. Fig. 5 is a similar view of one of the packing-strips.

Similar numerals of reference are employed to indicate corresponding parts throughout the several figures of the drawings.

The cylinder of the engine comprises a main ring 10, that is secured to or formed integral with a suitable base-plate, and suitable heads 11, to which are secured brackets 12 for the support of the main shaft 13.

On the shaft 13 is keyed or otherwise secured a cylindrical piston-drum 14, the periphery of which is provided with a series of pockets 15 of a width less than that of the piston, the end walls of said pockets being disposed on lines that are approximately radial of the drum. Between each two pockets is a radially-projecting rib 16, that is recessed for the reception of a T-shaped packing-strip 17, said strip being of a width approximately equal to the width of the pockets and held out in contact with the inner wall of the cylinder by the pressure of the steam, air, or other actuating fluid.

In each of the pockets is arranged a bucket 18, that corresponds in contour to the pocket, and said buckets are held outward in contact with the inner wall of the cylinder by means of suitable springs 19, so that only the outer edges of said buckets and the packing-strips will be subjected to wear, the body of the piston being protected and each of the buckets serving practically as a packing member to prevent leakage of steam around the periphery of the drum.

In the end wall of each of the buckets is a port 20, that communicates with a port 21, leading to that portion of the recess 16 immediately below the head of the packing-strip 17, and steam may enter through the ports from either side of the rib in accordance with the direction in which the piston-drum is rotated, but the shank of the packing-strip serves to prevent the direct passage of steam from bucket to bucket.

The engine is provided with two steam-inlet ports 24 and two exhaust-ports 25, and the pipes connected thereto may be provided with controlling-valves of any suitable character, so that steam will be introduced through one or other of the steam-pipes and exhaust through one or other of the exhaust-pipes, thus permitting the reversal of rotation of the engine at will.

The periphery of the piston is further provided with a pair of annular grooves 26, in which are annular packing-strips 27 to prevent leakage of steam in the direction of the width of the piston. The inner faces of these

packing-strips are arranged close to the sides of the buckets, as shown more clearly in Fig. 3.

With an engine constructed in accordance with this invention there is no wear on the piston proper, and the buckets and packing-strips being all of the same size and interchangeable may be readily renewed when worn.

Having thus described the invention, what is claimed is—

1. The combination in a rotary engine, of a cylinder, a shaft, a piston-drum mounted on the shaft and provided with a plurality of peripheral pockets, spaced by intervening radial ribs, said ribs being provided with packing-strip-receiving recesses, packing-strips disposed within the recesses, said strips being of T shape in cross-section, and ports leading from the opposite ends of the pockets to said recesses for the passage of a fluid under pressure, the radial web of the packing-strip serving to prevent communication between said ports.

2. The combination in a rotary engine, of a cylinder, a piston arranged within the cylinder and provided with a plurality of peripheral pockets, interchangeable buckets mounted within the pockets and provided with end ports for the passage of steam, means for forcing the buckets outward into engagement with the inner wall of the cylinder, recessed ribs separating the pockets and provided with ports in alinement with the end ports of the buckets, and T-shaped packing-strips disposed in said recesses.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CON PAUL RHOY.

Witnesses:
C. C. VAN LIEW,
C. A. OLIVER.