

# C. F. Roth, Rotary Engines.

Fig: 1.

PATENTED JUN 27 1871

116357

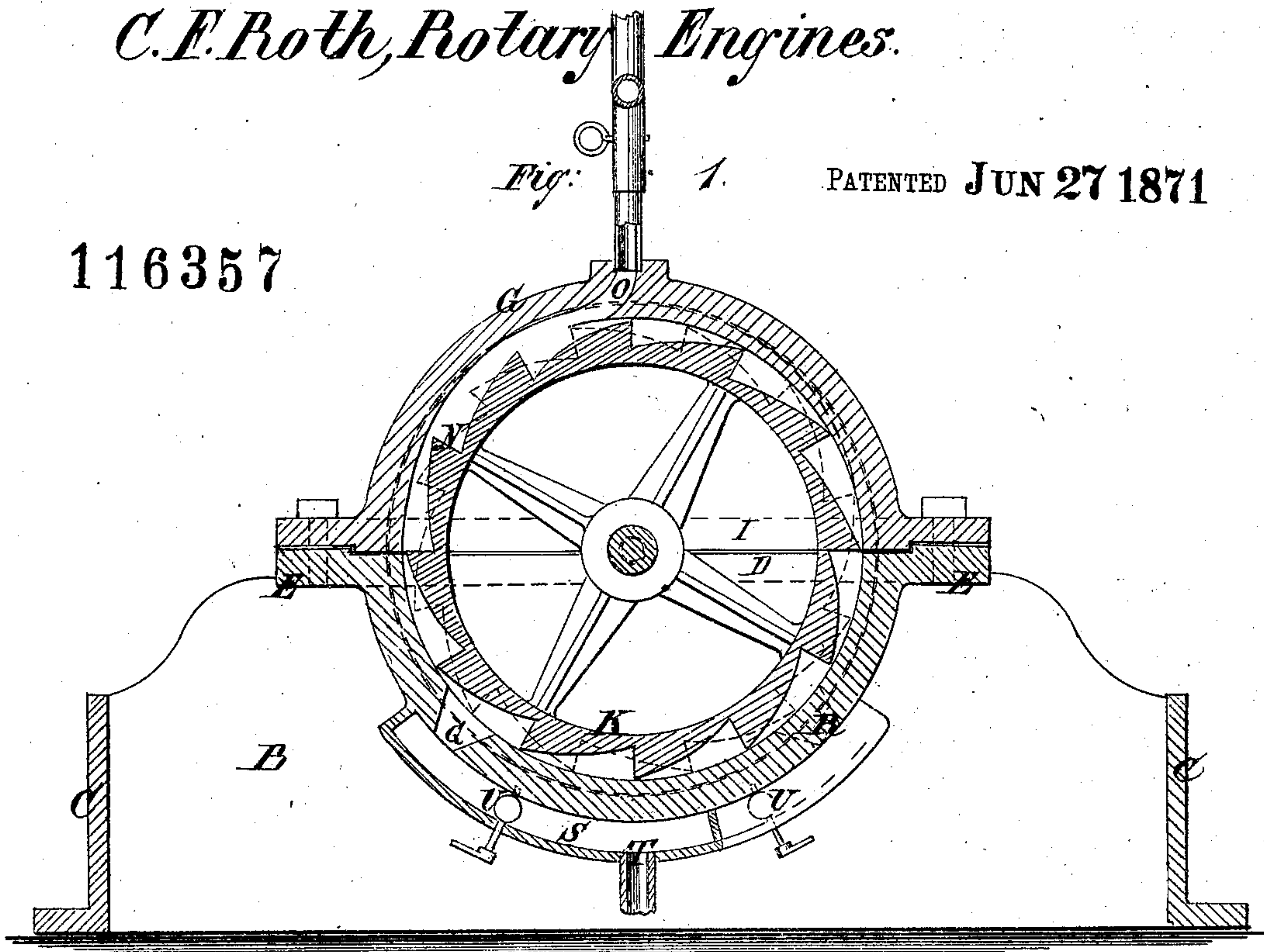
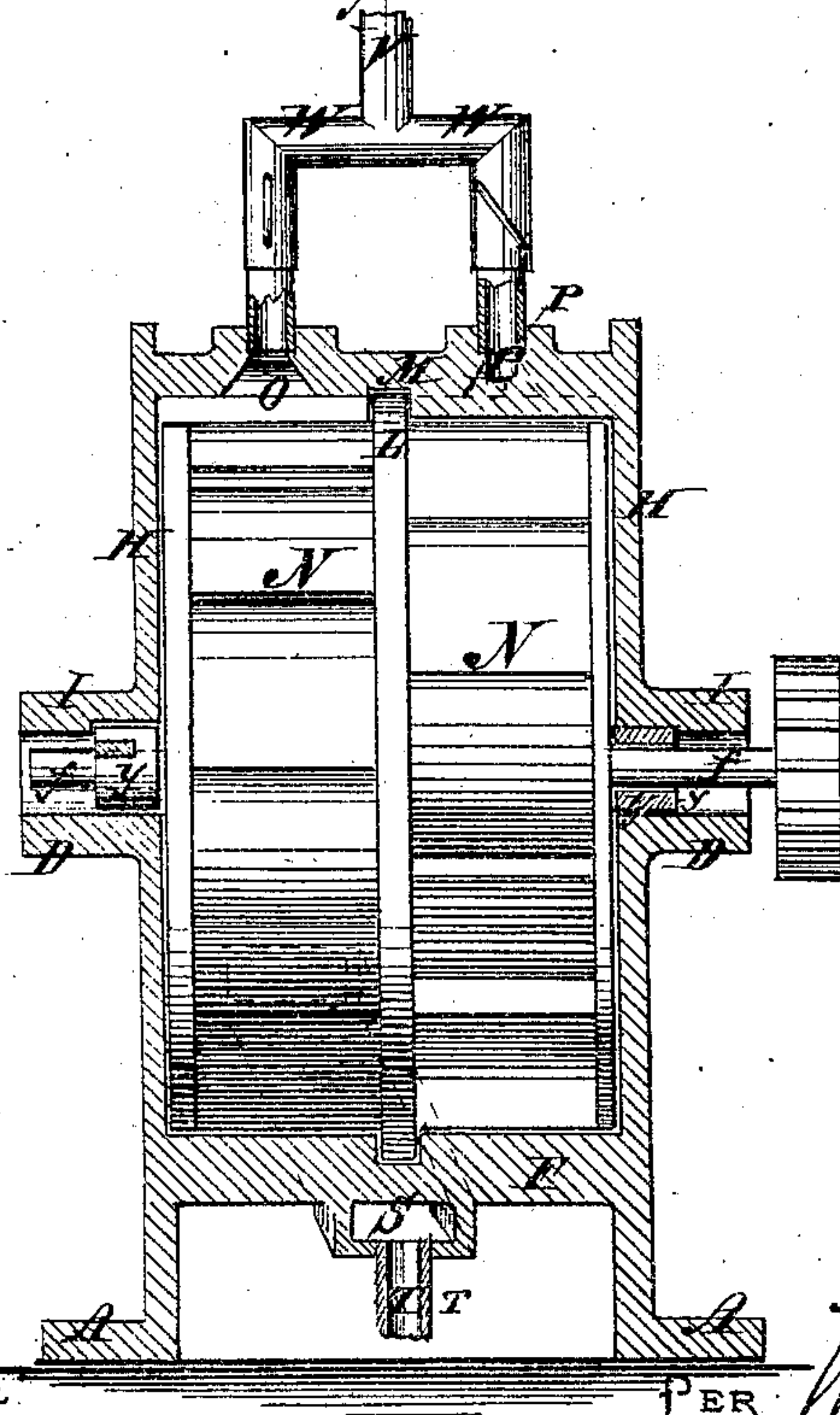
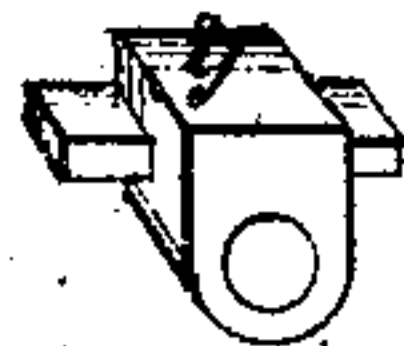


Fig: 2.

Fig: 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

CHARLES F. ROTH, OF OSCEOLA, IOWA.

## IMPROVEMENT IN ROTARY STEAM-ENGINES.

Specification forming part of Letters Patent No. 116,357, dated June 27, 1871.

*To all whom it may concern:*

Be it known that I, CHARLES F. ROTH, of Osceola, in the county of Clark and State of Iowa, have invented a new and useful Improvement in Rotary Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

My invention consists in improving rotary engines, as hereinafter fully described and subsequently pointed out in the claim.

Figure 1 is a sectional elevation perpendicular to the axis of the shaft. Fig. 2 is a section parallel with the axis, and Fig. 3 is a view of one of the boxes for the shaft.

Similar letters of reference indicate corresponding parts.

A is a bed-plate with two long vertical sides, B, and two short ones, C, rising from it and forming four sides of a case, of which the two long sides B are the highest, and have flanges D along the outer sides at the upper edges, the ends of which are joined to the ends of cross-bars E. F is the lower concave of the hollow cylinder for the wheel; it is fitted snugly between the sides B and cross-pieces E, and is intended to be detachably connected, and constitutes, together with the sides, the lower half of the case. The upper half is composed of the concave G, end pieces H, and flange I, and is suitably attached to the flanges D and end pieces E to form a steam-tight joint. The wheel or drum consists of the hollow cylinder K, fitting the case snugly, and divided into two parts by the circumferential flange L, which works steam-tight in the an-

nular groove M in the case. Each part is provided with buckets or notches N corresponding thereto, and those of one part arranged to work the wheel in the opposite direction to those of the other. O is the steam-port opening into one side, and P the port leading into the other side. Q is one exhaust, and R the other. From the induction-ports to the exhausts the inner wall of the case is made eccentric to the wheel, or scroll-shaped, being arranged at some distance therefrom at the induction-ports, and are gradually closing down to the wheel in the direction of the exhausts to allow of the direct force of the steam on two or more buckets at once. The exhausts Q and R lead into a jacketed space, S, on the exterior of the lower concave, having the exhaust-pipe T, also the stop-cocks or valves U for closing one, while the other is open to prevent the exhausting steam from flowing back into the part not having steam on. The steam-pipe V will have a branch, W, leading into each part, and a stop-valve for each. The shaft X will have suitable stuffing-boxes Y where it passes through the case.

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

The reversely-bucketed but single cylinder K having a flange, L, working in groove M of the case, the internally-eccentric case, the double ports for separately receiving the exhausting steam, and the valved channel-way U U S, all constructed and arranged together in the manner specified, and for the purpose set forth.

C. F. ROTH.

Witnesses:

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