

G. W. ROGERS.
Rotary-Pumps.

No. 129,864.

Patented July 23, 1872.

Fig. 2

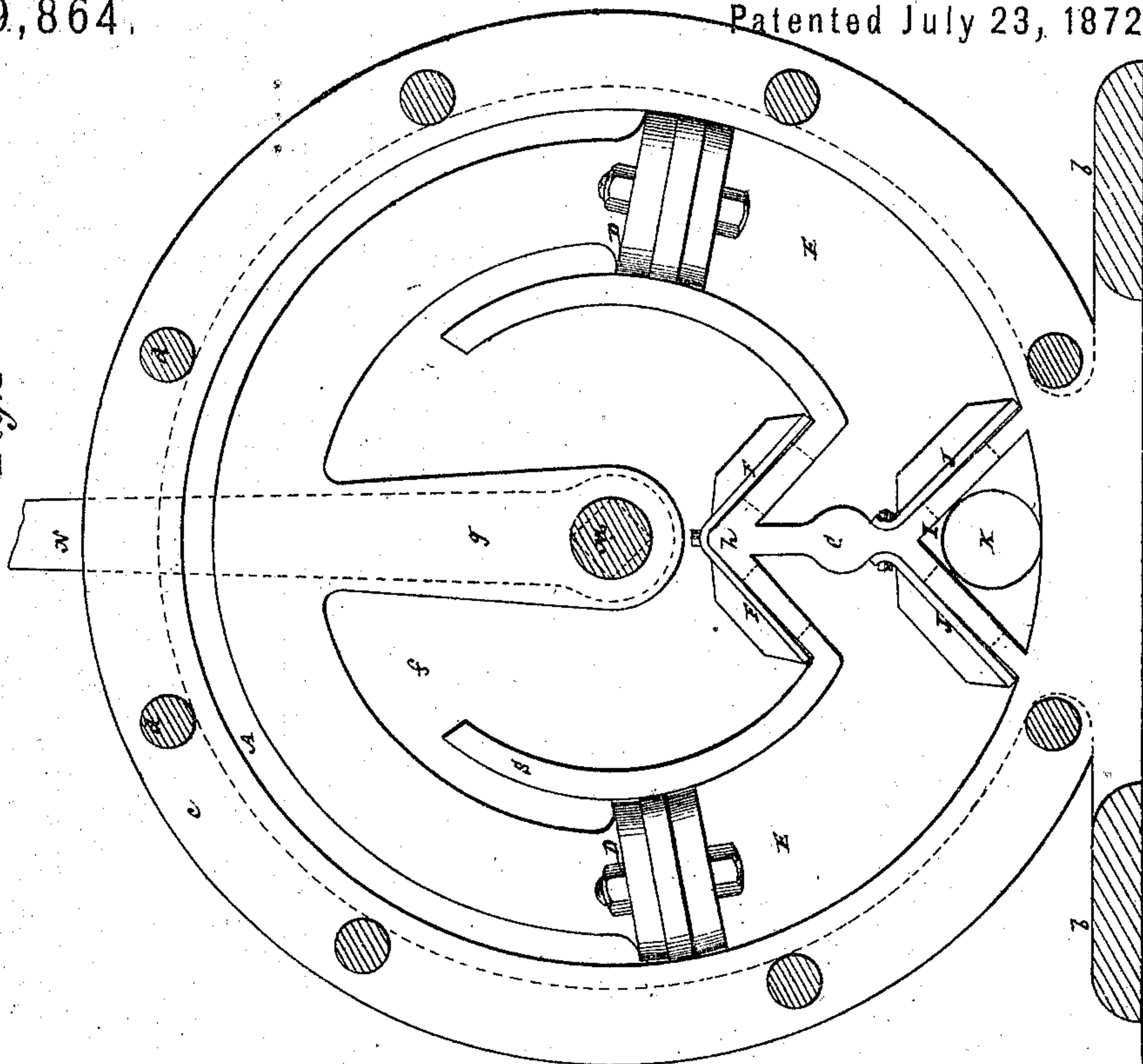
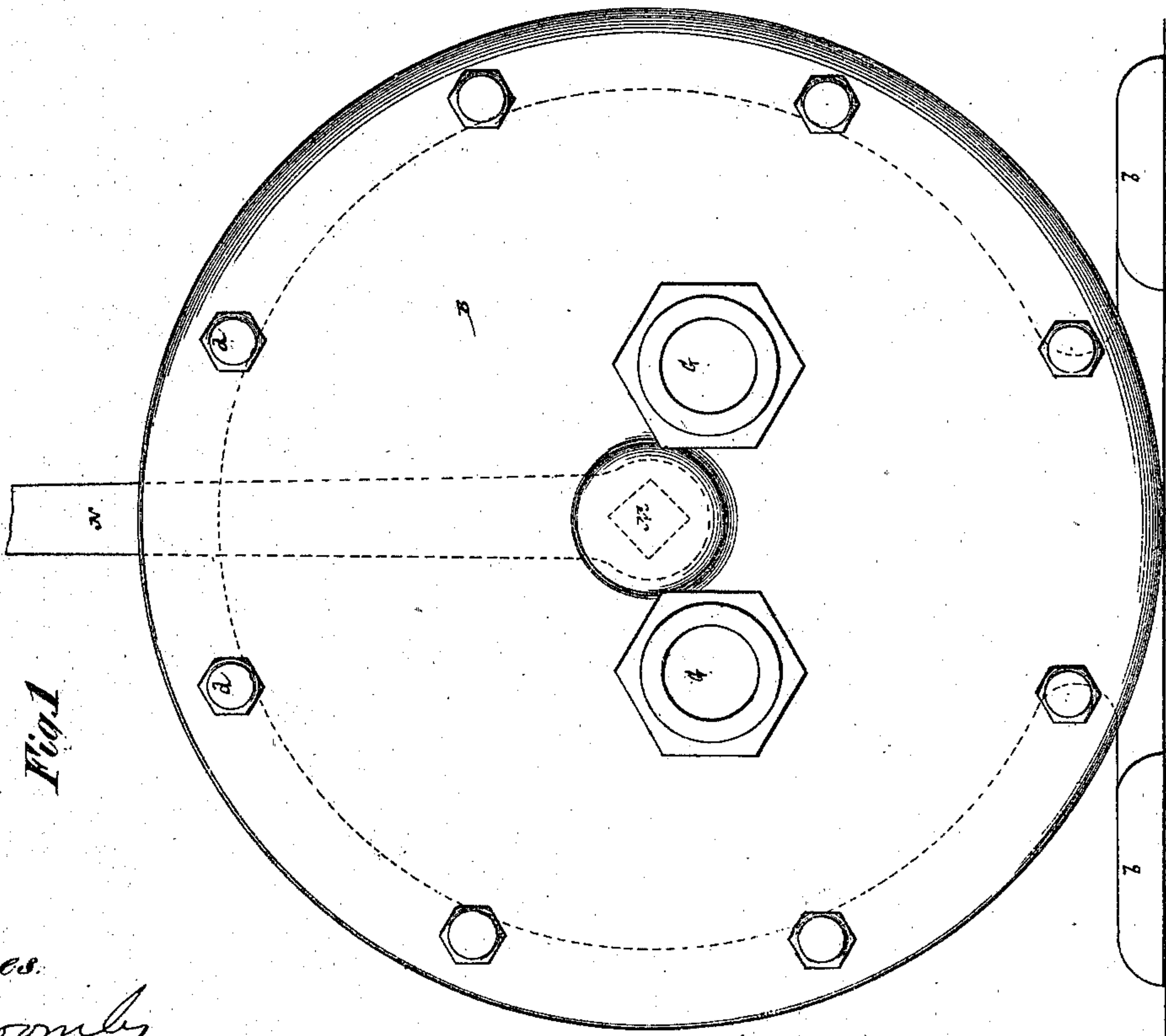


Fig. 1



Witnesses:

Wm. G. Rogers
J. W. Rogers

G. W. Rogers

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Fig. 4

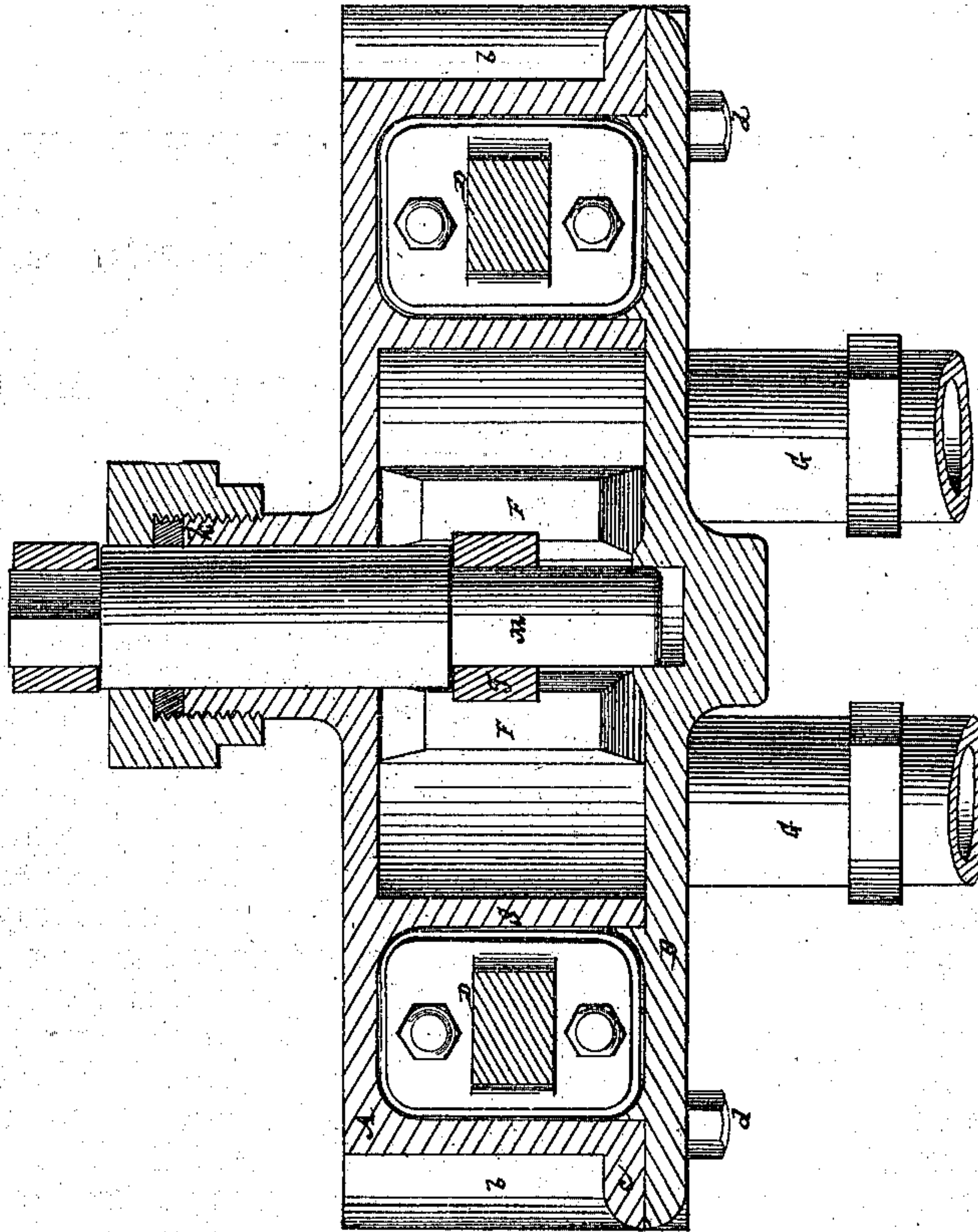
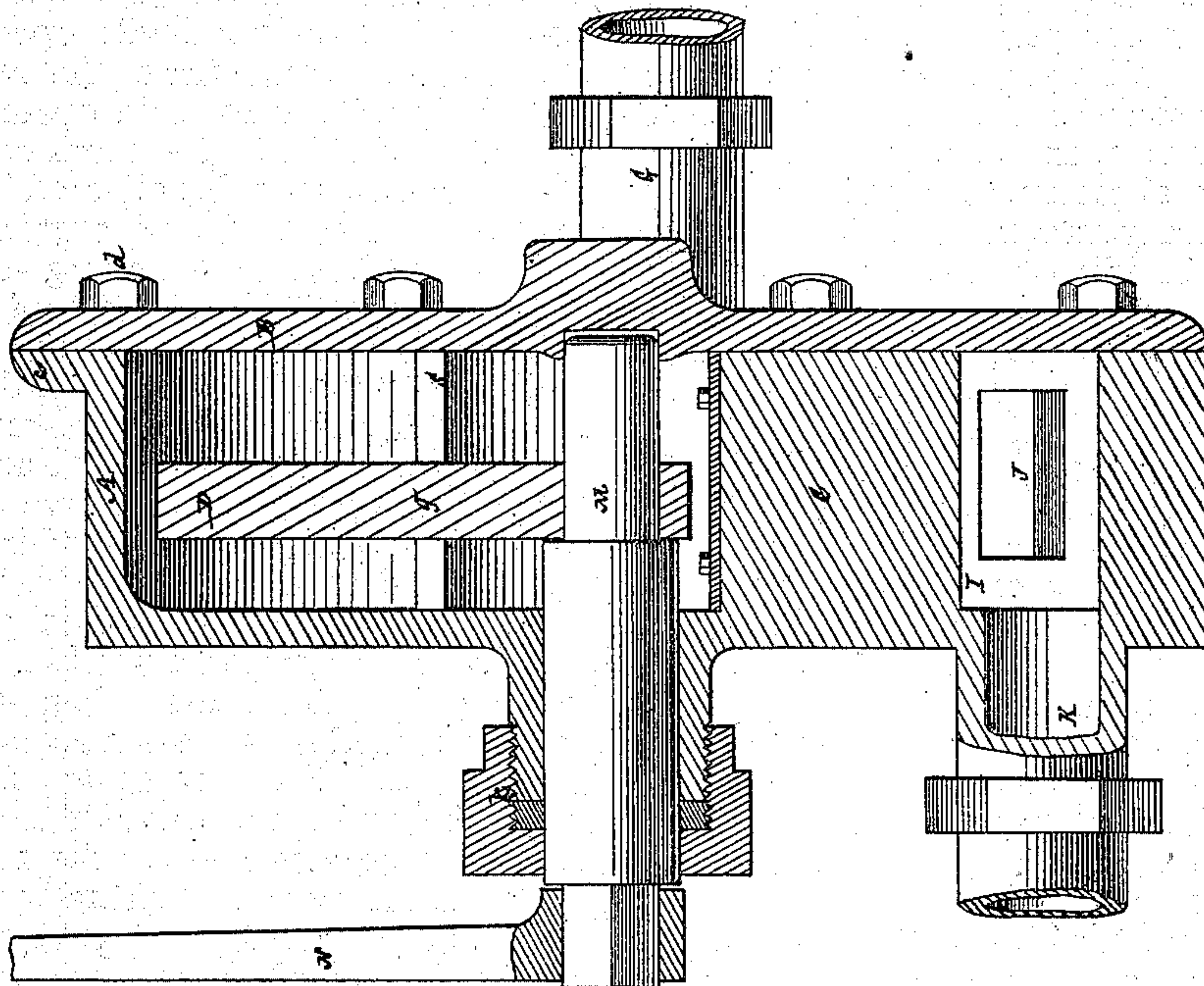


Fig. 3



Witnesses
J. M. Coombs
Edw. Trench

G. W. Rogers

UNITED STATES PATENT OFFICE.

GEORGE W. ROGERS, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN ROTARY PUMPS.

Specification forming part of Letters Patent No. 129,864, dated July 23, 1872.

To all whom it may concern:

Be it known that I, GEORGE W. ROGERS, of Brooklyn, in the county of Kings and State of New York, have invented a new and useful Improvement in Pumps, of which the following is a full, clear, and exact description, reference being had to the accompanying drawing forming part of this specification.

Figure 1 represents a face view or elevation of my improved pump as seen from its cover side; Fig. 2, a partly-sectional side view from a similar position, with the cover removed; Fig. 3, a vertical section in direction of the length of the pump's axis; and Fig. 4, a horizontal section of the pump.

Similar letters of reference indicate corresponding parts throughout the several figures.

My invention relates to pumps which employ an oscillating piston, and is an improvement upon the pump for which Letters Patent No. 89,080 were issued to me on April 20, 1869, the same being antedated April 3 of that year. In this, as in my previous pump, I use a segmental piston, arranged to oscillate within a partially-annular chamber between a partition or dividing-block, for operation in concert with or as serving to control duplicate receiving and delivering valves. The improvement consists in a novel construction of the shell provided with a cover, in combination with the segmental piston and receiving and delivering valves, the whole being arranged as hereinafter described.

By this improvement a separate bed-plate may be dispensed with, the suction or receiving chamber is located within the pump and out of the way, a most perfect action is obtained for the valves, and a simpler construction generally, with increased facility for repairs, is secured. Compactness, cheapness, and increased power are the general advantages of the pump.

The pump, which is of semi or partly rotary description, consists of three leading parts—namely, a main body, case, or shell, a face-plate or cover, and the segmental piston. A in the drawing represents the main body, case, or shell, which is of a circular form, and arranged to stand, by means of base-flanges *b b* at its circumference, in an upright position, and so that its axis lies horizontal or thereabout. Said body is formed with one close face or side, but is left open on its opposite

side, and around the edge of the latter a flange, *c*, cast for attachment by bolts and nuts *d d* of a face-plate, lid, or cover, B. The body or shell A is also provided internally with a partial ring or flange, S, which serves, in connection with the outer portion of the body, its cover, and a partition, C, to form the annular or partially-annular space and pump chamber or chambers E E, in which the segmental piston D D works. These chambers may be round, square, oval, or of any other desired shape in their transverse section. The upper portion of the partial ring or flange S is cut away, as at *f*, to receive the arm *g* of the segmental piston through it, and to limit the travel or stroke of the piston-heads up and down or within the chambers E E. The lower portion of said partial ring or flange S is connected with or made to form an inverted V-shaped projection, *h*, which is provided with openings on its opposite sides, and carries the two delivery-valves F F that control said openings for discharge of the fluid into the interior of the partial ring, from whence it is delivered by discharge pipes or nozzles G G, as required. The interior space above the discharge-nozzles and above the upper sides or faces of the piston-heads forms a capacious air-chamber to assist in the expulsion of the fluid. Both valves F F may, by this construction and arrangement of the parts, be secured by one and the same fastening at the apex of the inverted V-shaped portion *h*. Immediately under this inverted V-shaped portion *h*, on the bottom of the interior of the outer circumferential portion of the shell, is cast or formed a suction or receiving chamber, I, which is also of an inverted-V shape, and carries on its opposite sides the inlet-valves J J of the pump, that operate alternately with the valves F F at every stroke of the piston to keep up the action of the pump. This chamber I is virtually an extension, and may be said to form part of the partition C that, in conjunction with the partial ring S, separates the pump-chambers E E, said partition C extending up from the apex of the chamber I to the under side of the upper inverted-V portion *h* at its center. K is the suction pipe or nozzle that opens into the receiving-chamber I, which latter, by its construction and arrangement, lies wholly within the pump, thus dispensing with a separate bed-plate, and

being out of the way as regards any interference with the foundation on which the pump stands or rests; also, by its protrusion within the body, serving to reduce dead load or lift of the fluid, and the oblique arrangement of the valves securing for the latter an easy and most perfect action. The discharge pipes or nozzles G G may both be carried by the lid or cover B, which has its joint made tight by packing or otherwise. The segmental piston D D has its ends or heads, each of which virtually constitutes a piston, formed of plates in pairs, one of which in each pair is stationary and the other adjustable, and said plates having arranged between them a packing or packings of leather or any other suitable material, leather cups or metallic packings being used, if desired. The operating-shaft M, to which the arm *g* of the segmental piston is secured, passes out through a stuffing-box, *k*, on the one or both sides of the pump to prevent leakage around said shaft. On the outer end of this shaft, when the same is arranged to pro-

trude only through the one side of the pump, is fastened the lever or brake N, by which the segmental piston is operated. When the operating-shaft projects through both sides of the pump, as is desirable in a large pump, said brake N should be made forked so as to straddle the pump shell or case and take hold of or be secured to the shaft on both sides of the pump.

What is here claimed, and desired to be secured by Letters Patent, is—

In combination with the casing A, partial ring or partition S, and segmental piston D, the valves F and J resting upon upward and inward inclining valve-seats, which are connected together by means of the partition C and contained wholly within the circle of said interior casing, substantially as and for the purpose specified.

G. W. ROGERS.

Witnesses:

J. W. COOMBS,
R. E. RABEAU.