

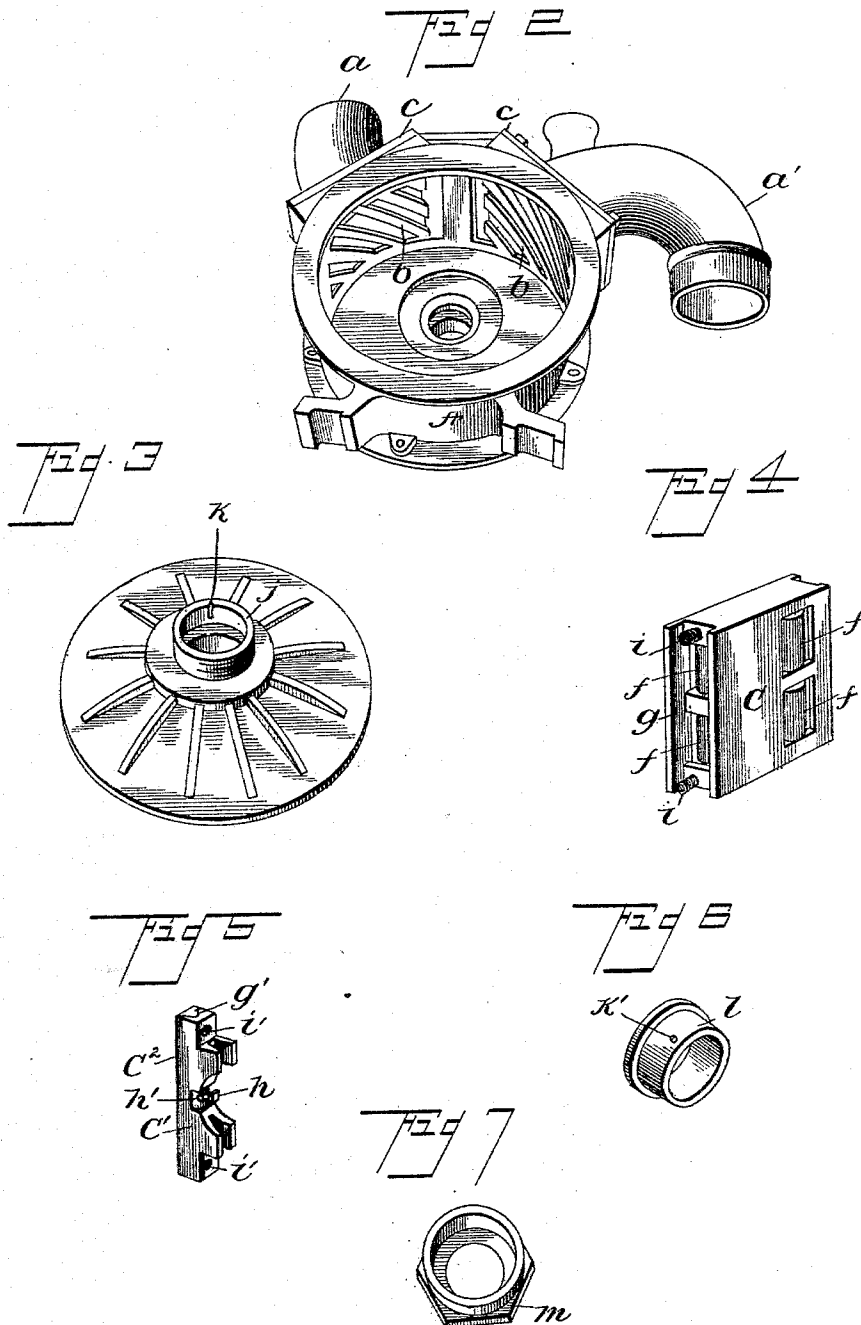
(No Model.)

2 Sheets—Sheet 2.

J. RIEPPEL.
PUMP.

No. 514,336.

Patented Feb. 6, 1894.



Witnesses

Chas. F. Miller.
S. A. Walton.

Inventor
John Rieppel

By *L. Deane*
his Attorney

UNITED STATES PATENT OFFICE.

JOHN RIEPPEL, OF COWANESQUE, PENNSYLVANIA.

PUMP.

SPECIFICATION forming part of Letters Patent No. 514,336, dated February 6, 1894.

Application filed August 2, 1892. Serial No. 441,951. (No model.)

To all whom it may concern:

Be it known that I, JOHN RIEPPEL, a citizen of the United States, residing at Cowanesque, in the county of Tioga and State of Pennsylvania, have invented certain new and useful Improvements in Rotary Pumps; 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.

My invention relates to an improved rotary pump, and it has for its object, among other things, to give the pump a maximum working capacity, to simplify the construction and lessen the number of parts, to facilitate the operation or movement of the sliding abutment or piston and reduce friction between the same and its carrying drum or cylinder and to enable the packing of the piston to readily accommodate itself to the wall of the containing cylinder or casing, to guard the piston or abutment against obstructions or foreign substances entering the pump or containing cylinder, with the liquid; and to prevent the accidental displacement or losing of the packing around the driving shaft of the piston carrying drum, and to these ends the invention consists of the sundry combinations and arrangements of parts substantially as herein after more fully disclosed and pointed out in the claims.

In the accompanying drawings: Figure 1 is a perspective view of my improved pump, with one side of the containing casing or cylinder removed. Fig. 2 is an internal view of the same, with the operative parts removed. Fig. 3 is a detailed perspective view of the sliding abutment or piston. Fig. 4 is a similar view of the piston or abutment packing. Figs. 5, 6 and 7 are detailed perspective views of the eccentric head with its stuffing box having a groove or channel, the stuffing box gland, and the stuffing box nut, respectively.

In the embodiment of my invention, I employ a containing cylinder or casing A which, however, is not an exact cylinder, being slightly elongated or oval, and which is firmly bolted sidewise upon a base or foundation A', and having an inlet-pipe or port *a*, and an outlet pipe or port *a'*, arranged at opposite sides of its center, near the upper portion or side, said openings or pipes, however, being

interchangeable, as the inlet or outlet, this depending upon the direction of rotation of the drum and its piston.

Covering the inner ends of the inlet and outlet ports, are series of spaced-apart, obliquely arranged bars *b* projecting inward and, serving as guards for the abutment or piston and its carrying drum, against the lodgment thereon of foreign substances or obstructions entering the containing cylinder, with the liquid, any accumulations at this part of the cylinder, above the guards *b*, being readily removed through an opening in the cylinder covered by a plate *c*, removably secured to the latter by suitable bolts.

B, is the inner cylinder or drum eccentric to the casing A, and whose shaft B', is journaled upon suitable bearings *d*, secured upon the base or foundation A', and adapted to be driven so as to rotate the drum either way by a fast pulley *e*, said shaft also bearing a loose pulley *e'*, upon which the driving belt is shipped from the fast pulley in stopping the rotation of the drum, with its piston.

C, is the sliding abutment or piston carried by the drum B, rectangular in its general outline, and arranged in a slot *c'*, extending clear through the drum, permitting the abutment or piston to project beyond the periphery of the drum, each way, so as to allow the packing thereof to touch the containing cylinder or casing constantly at opposite points, also the guard bars *b*, in its movement, and thus effect the wiping or cleaning from said packing any foreign substance or dirt that may adhere to said packing. Thus the piston or abutment C, adapted to cover or align with the lower edges of the inlet and outlet ports *a a'*, of the casing or cylinder A, before opening the outlet port thereby avoiding the use of valves, forces the liquid before it at the discharge or outlet side of the casing or cylinder and draws, by suction the liquid after it at the inlet or receiving side of the cylinder, thus pumping the liquid into the latter simultaneously with its delivery, giving the pump a maximum working capacity. The sliding abutment or piston C, has journaled in its sides, at diagonally opposite points, near its outer edges, series of anti-friction rollers *f f*, bearing or rolling upon the side walls of the containing slots of the piston, in the drum, thus reduc-

ing friction at these points and facilitating the movement of the piston.

Seated in recesses *g*, in the outer edges of the piston or abutment *C*, are packing pieces *C'*, themselves, having, recesses or concavities *g'*, in their front edges which receive supplemental packing strips *C''*, convex or cylindrical in cross section and having central studs *h*, playing in the arc of a circle in slots *h'*, in the bottoms of said concavities or recesses, to permit the packing pieces to readily accommodate themselves to the circular wall of the chamber of the cylinder or casing *A*, as the piston is carried around by the drum, and yet maintain liquid tight joint thereat which, as intimated, is the primary object of the packing-strips.

In order to compensate wear, when the packing-pieces become worn after long use, said packing pieces are cushioned upon springs *i*, preferably coiled, suitably seated in sockets or recesses *i'*, produced in the backs of said packing-pieces and in the bottoms of the recesses *g*, in the outer edges of the piston or abutment.

In the stuffing box *j*, of each head of the cylinder or casing *A*, is a longitudinal channel or groove *k*, which receives a stud or projection *k'*, on the outer circumference of the stuffing box gland *l*, held in the stuffing box

j, by the nut *m* screwed upon the latter as shown. This arrangement prevents the turning of the gland *l*, and the consequent losing of its packing in such event, should the rotation of the drum, with its piston, be in the direction of the thread of the nut *m*.

I now claim—

1. In a rotary pump, the combination of a containing cylinder or casing, a drum within the latter and the sliding or rolling piston or abutment carried by said drum and provided with packing carrying supplemental packing strips adapted to accommodate themselves to the circular wall of the cylinder or casing, substantially as set forth.

2. In a rotary pump, the combination of a containing cylinder or casing, a drum within the latter and the piston or abutment sliding through said drum and carrying packing pieces seated therein and having supplemental packing strips convex or cylindric in cross-section and having studs engaging slots in the aforesaid packing pieces, substantially as set forth.

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

JOHN RIEPPEL.

Witnesses:

N. H. SEELY,

M. L. BARRETT.