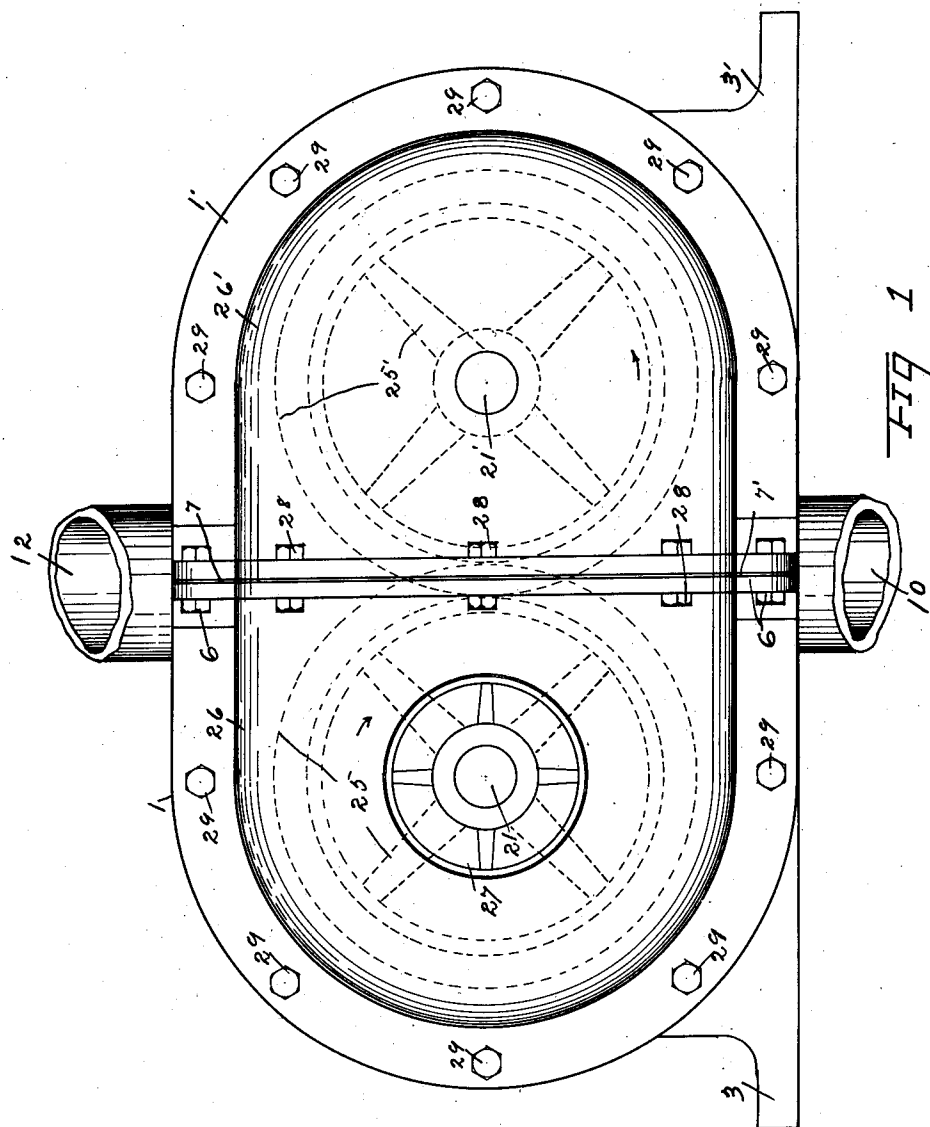


J. L. WEBB.
 ROTARY PUMP.
 APPLICATION FILED MAY 26, 1919.

1,382,580.

Patented June 21, 1921.

3 SHEETS—SHEET 1.



Witnesses
 M. W. Johnson
 Vera Jones

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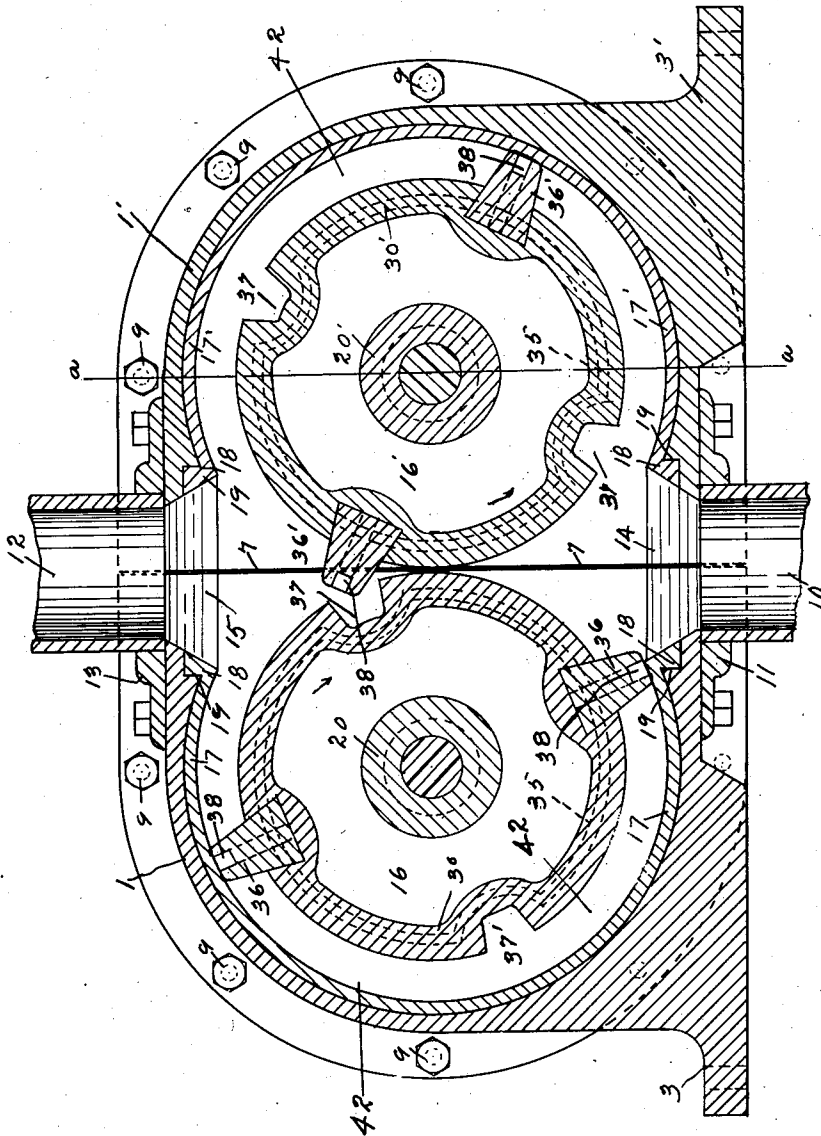


FIG 2

Witnesses
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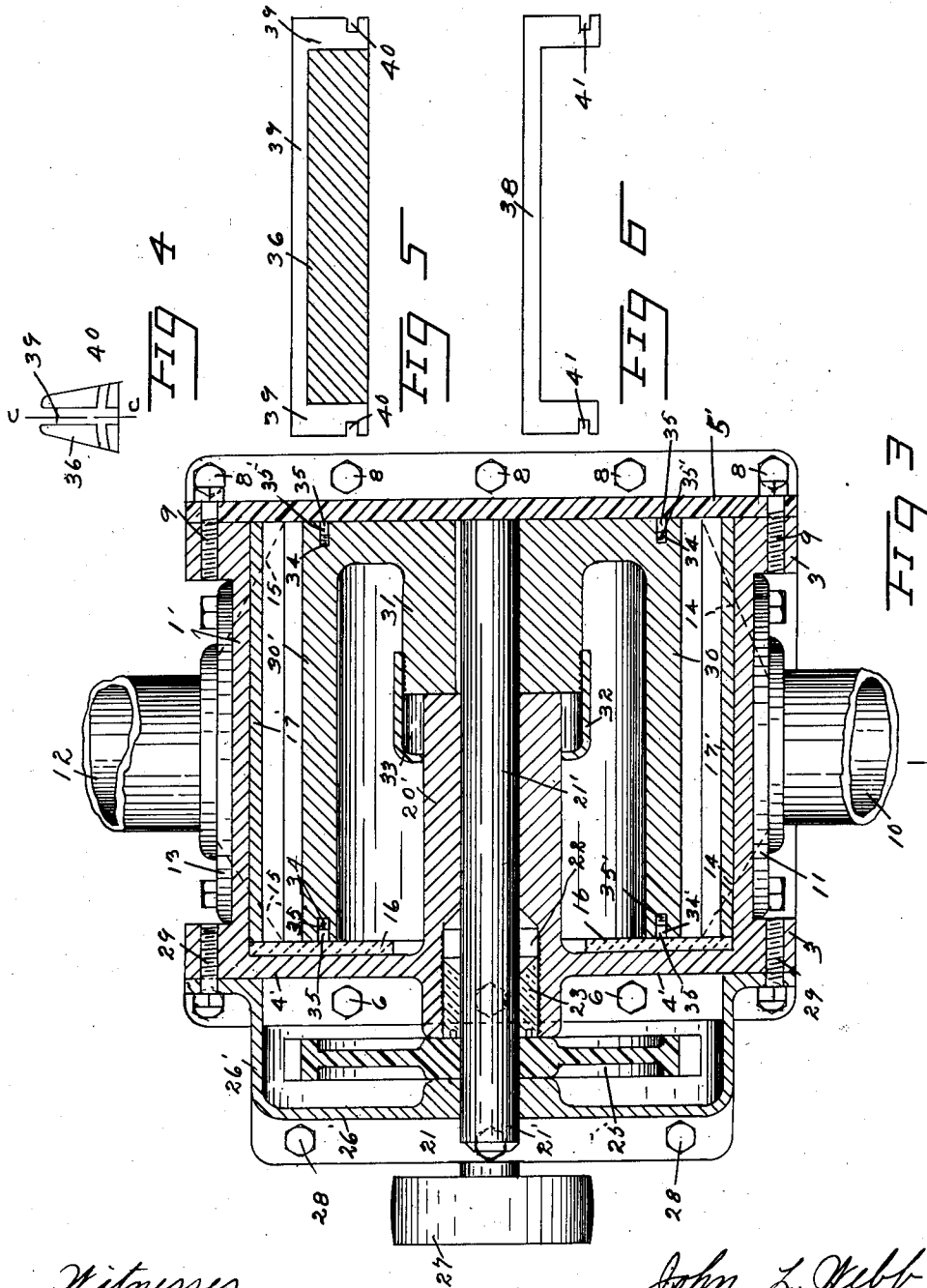
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UNITED STATES PATENT OFFICE.

JOHN L. WEBB, OF SALT LAKE CITY, UTAH, ASSIGNOR TO WEBB PUMP COMPANY, OF SALT LAKE CITY, UTAH, A CORPORATION OF UTAH.

ROTARY PUMP.

1,382,580.

Specification of Letters Patent. Patented June 21, 1921.

Application filed May 26, 1919. Serial No. 299,801.

To all whom it may concern:

Be it known that I, JOHN L. WEBB, a citizen of the United States, residing at Salt Lake City, in the county of Salt Lake and State of Utah, have invented a new and useful Improvement in Rotary Pumps, of which the following is a specification.

This invention relates to rotary pumps, and its principal objects are to provide: first, a rotary pump that is economical in cost of construction and durable in service; second, a rotary pump without valves so that leaves, sticks, mud and all foreign substances may pass safely through the pump; third, a rotary pump wherein the motion will be equal and continuous so that no impulses shall be given the water, thus allowing the same to enter and leave in a steady stream; fourth, a rotary pump with but one bearing for each shaft, exposed to the water.

With these objects in view, my invention consists of the arrangements of parts to be hereinafter described and claimed, reference being had to the accompanying drawings forming part of this specification.

Figure 1, represents a rear elevation of my invention;

Fig. 2, a longitudinal section viewed from the back;

Fig. 3, a section on line *a-a* Fig. 2;

Fig. 4, an end view of one of the teeth;

Fig. 5, a section on line *c-c* Fig. 4; and

Fig. 6, a detail of a minor part.

Similar numerals refer to like parts throughout the drawings.

The casing of the pump may be made in sections, as illustrated, the numeral 1 denoting one section of the casing, and 1', the other section of the casing, each section having a back wall, 4 and 4' respectively, and a removable front wall, 5 and 5' respectively, supported upon a base 3. The two sections of the casing are bolted together at 6 with the packing strip 7 placed between them.

The two sections of the front wall are secured together by the bolts 8 with packing 7' placed between them; they are then secured to the casing 1 and 1', by bolts 9.

By removing the packing 7 and 7' as the rotors 30 and 30' wear, a water-tight joint may be maintained between the two rotors at all times.

Secured in the bottom of the casing is a pipe 10, which is in line with the inlet 14,

and secured on the top of the casing is the pipe 12, in line with the outlet 15.

Within the casing 1 and 1' are placed wearing plates 16 and 16' and bushings 17 and 17'. The bushings have the lips 18 that fit into the notches 19 for holding the bushings within the casing, the wearing plates 16 and 16' being held in place by contact against the bushings 17 and 17'.

From the inner faces of the back-wall portions 4 and 4', project hubs or bosses 20 and 20', respectively, the hub 20 serving as a bearing for the main driving shaft 21, and the hub 20' serving as a bearing for the driven shaft 21'. The outer ends of the hub are bored to form stuffing boxes 22, which latter are fitted with the glands 23.

The driving shaft 21 imparts motion to the shaft 21' by means of the gears 25 and 25', these gears being inclosed by the housing formed of parts 26 and 26'. The two parts of the housing are held together by bolts 28 and then are secured to the back wall of the casing by bolts 29. The gear housing has formed in it bearings for the outer ends of the driving shaft and the driven shaft.

Mounted on the inner end of the driving shaft 21 and on the inner end of the driven shaft 21' are the circular cylindrical rotors 30 and 30' respectively, on the hubs of which are secured the collars 32, to form pockets 33 for receiving a lubricant.

In the outer faces of the rotors 30 and 30' are the grooves 34 into which are fitted the packing strips 35, the latter being subjected to pressure from the springs 35, for the purpose of forming close contacts against the sides of the casing.

Projecting from the peripheries of the rotors 30 and 30', and fitted into suitable grooves cut into the faces thereof, are the teeth 36 and 36', which are adapted to register with the recesses 37 and 37', the latter being also cut in the peripheries of the rotors.

The teeth 36 and 36', form impellers, and these have the grooves 39 cut along the outer faces and down the ends thereof, for the purpose of holding the packing pieces 38, which latter insure close contacts against the inner sides of the casing. Other grooves 40 are cut crosswise in each end of all the teeth, and notches 41 are cut into the packing

pieces 38 in line with the grooves 40. The grooves 40 and the notches 41 are in line with the grooves 35', in the end faces of the rotors 30 and 30', so that when the packing strips 35 are placed in the grooves 35', they will also fit into the grooves 40 and the notches 41, thus keeping the packing pieces in their proper places at all times.

When power is applied to the pulley 27 it should rotate in the direction of the arrow and by means of the shafts 21 and 21', and the gears 25 and 25', communicate motion to the rotors 30 and 30'. The contact between the rotors is air tight so that, when the rotors move, the air will be forced out of the casing, through the outlet 12, and the liquid will be drawn in through the inlet 10 and be taken up by the teeth and carried through the annular spaces 42 to the outlet 12.

Having described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a rotary pump having a casing projecting from a back wall and a hub projecting from the said wall, inwardly of the said casing, the projection of the said hub being less than the projection of the said casing, the combination of a shaft journaled in the said hub, a rotor hub rigidly mounted on the said shaft, the said rotor hub extending from the end of the said back wall hub to the end of the casing, a rotor body suitably carried by the said rotor hub, a wearing plate placed between the inner surface of the said back wall and the adjacent face of the said rotor body, bushings fitted inside the said casing and partially surrounding the said rotor body, lips projecting from the said bushings, the said lips seated in notches

formed in the said casing, and a closure for said casing, the said closure at the same time serving to hold the rotor body and the bushing, in suitable operative position.

2. In a rotary pump having a casing projecting from a back wall and hubs projecting from the said back wall, the said hubs located inside the said casing and projecting from the said back wall a distance less than the projection of the said casing, the combination of wearing plates adjacent the inside face of the said back wall, shafts journaled in the said back wall hubs, rotor hubs rigidly mounted on the said shafts, interacting rotor bodies carried on the said hubs, the said rotor bodies being recessed to extend over the said back wall hubs for the purpose of contacting the said wearing plates, and means for operatively holding the said rotor-bodies in the said casing.

3. In a rotary pump having a casing projecting from a back wall and hubs projecting from the said back wall, said hubs located inside said casing and projecting distances less than projection of said casing, the combination of wearing plates adjacent the inside face of said back wall, rotor hubs operatively mounted adjacent the said back wall hubs, interacting rotor bodies carried by said rotor hubs, said rotor-bodies being adapted to contact said wearing plates, collars adapted to form lubricant pockets over adjacent hub surfaces of said back wall hubs and said rotor hubs, and means for retaining said rotor-bodies in rotative positions in said casing.

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Witnesses:

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