No. 669,601. Patented Mar. 12, 1901.

F. P. SNOW.

THRUST BEARING.

(Application filed June 4, 1900.)

(No Model.)

FIG I.

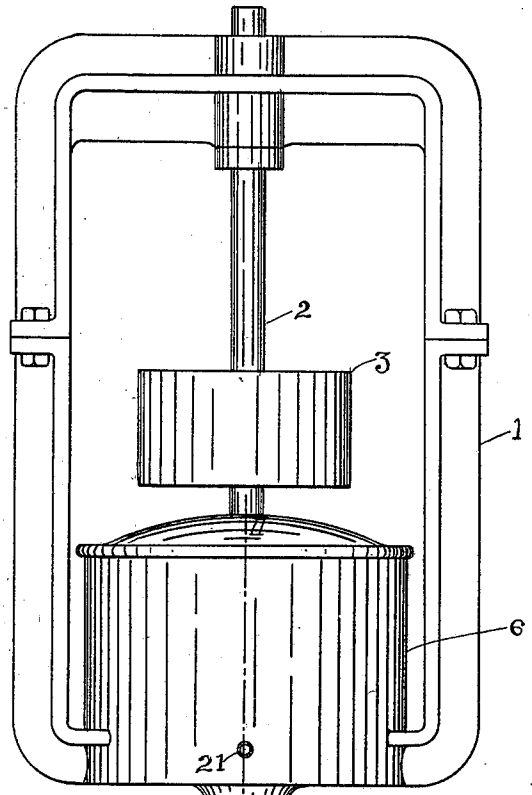


FIG II

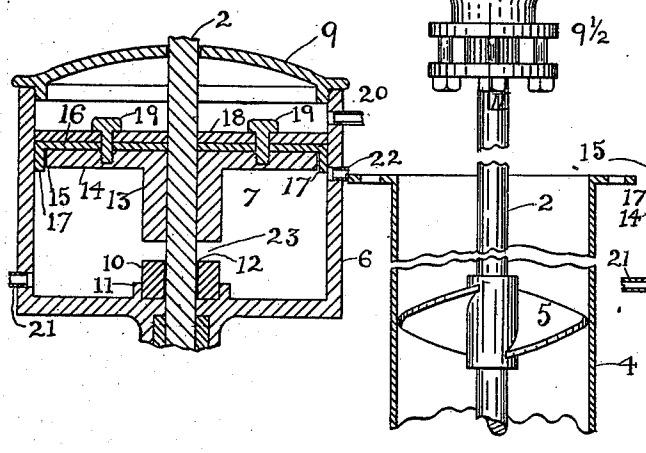
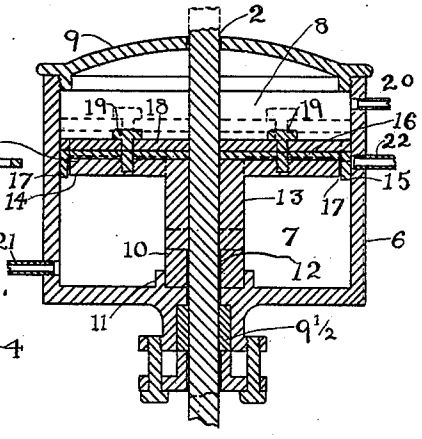


FIG III



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

FRANK P. SNOW, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO THE STANDARD IRON AND BRASS WORKS, OF SAME PLACE.

THRUST-BEARING.

SPECIFICATION forming part of Letters Patent No. 669,601, dated March 12, 1901.

Application filed June 4, 1900. Serial No. 19,036. (No model.)

To all whom it may concern:

Be it known that I, FRANK P. SNOW, a citizen of the United States, with residence and post-office address at 921 West Thirty-third street, city of Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Thrust-Bearings, of which the following is a full, clear, complete, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to thrust-bearings for shafts and the like which may be used on numerous devices, the drawings in the present application showing the same applied to a rotary pump having a vertically-suspended shaft or pump-rod; and my invention consists in certain features of novelty hereinafter described and claimed.

Figure I is a side elevation of a pump-head with my improved bearing attached thereto. Fig. II is a detail vertical section taken on line II II, Fig. I, showing the bearing in its raised position. Fig. III is a vertical section taken on the same line as Fig. II, showing the bearing at rest.

Referring to the drawings, 1 represents a pump-head frame, 2 a pump-shaft, and 3 a pulley on the pump-shaft for rotating the same.

4 represents a section of the pump-casing, and 5 the screw-blades mounted on the shaft 2 for raising the water.

6 represents a cylinder mounted on the frame 1 of the pump-head. The cylinder 6 is provided with a lower chamber 7 and an upper chamber 8. The pump-rod 2 passes vertically through the center of the cylinder 6, said cylinder having a screw-cap 9 attached to the body of the cylinder, by means of which access may be had to the interior of the cylinder.

9½ represents a stuffing-box supported by the lower end of the cylinder and surrounding the pump-rod 2 to prevent leakage.

10 represents a foot-block, preferably made of wood and resting within an annular cup 11 immediately above the stuffing-box 9 and within the cylinder 6. The foot-block 10 is provided with a central aperture 12, the pump-rod passing through said aperture.

13 represents a collar secured to the pump-rod 2, said collar having a flange 14 at its upper end, said flange extending to a point near the inner wall of the cylinder 6, leaving an annular recess 15 between the wall of the cylinder and the periphery of the flange.

16 represents a cup-leather covering the upper surface of the collar 13 and flange 14 and having overlapping downwardly-extending sides 17, which fill up the recess 15 between the flange and the cylinder.

18 represents an annular plate surrounding the shaft 2 and resting upon the top of the cup-leather 16.

19 represents screws for securing the plate 18, the cup-leather, and the flange together.

20 represents a drain-pipe for carrying waste water from the upper chamber 8.

21 represents a pipe for supplying water under pressure to the lower chamber 7 of the cylinder 6, and 22 represents a discharge-pipe leading from the upper end of the chamber 7.

The operation is as follows: When the device is not in operation, the collar 13, which supports the pump-rod 2, rests upon the foot-block 10, as shown in full lines, Fig. III. At this time the discharge-pipe 22 is closed by the cup-leather 16. When it is desired to operate the device, water is admitted under pressure through the supply-pipe 21, which coming in contact with the under face of the flange 14 raises the collar 13 from the foot-block 10, as shown in Fig. II and in dotted lines, Fig. III, thus leaving an annular space 23 between the lower end of the collar 13 and the upper end of the foot-block 10, in which the water circulates, thus forming a water-bearing chamber. As the cup-leather is gradually forced upward it uncovers the inner end of the pipe 22, permitting the discharge of water and arresting the upward movement of the cup-leather and the attachments, which include the pump-rod 2, it being obvious that when the pressure is once again relieved the collar 13 will once more rest on the foot-block 10.

I claim as my invention—

1. A thrust-bearing comprising a frame, a shaft, means whereby the shaft is rotated, a

cylinder providing a water-chamber and having an annular cup, a foot-block seated in the cup, a collar having a flange and seating on the foot-block, a cup-leather located on the flange, an annular plate resting on the cup-leather, means for securing the annular plate, cup-leather and flange together, pressure and discharge pipes connected with the chamber.

2. A thrust-bearing comprising a frame, a shaft, means whereby the shaft is rotated, a cylinder providing a water-chamber, and having an annular cup, a cap to the cylinder, a foot-block seated in the cup, a collar having a flange and seating on the foot-block, a cup-leather located on the flange, an annular plate resting on the cup-leather, means for securing the annular plate, cup-leather and flange together, pressure and discharge pipes connected with the inner part of the chamber, and a drain-pipe connected with the outer part of the chamber.

FRANK P. SNOW.

Witnesses:
J. W. KEMP,
JAS. E. KNIGHT.