J. H. BRADNACK.

SELF LUBRICATING PISTON FOR AIR PUMPS.

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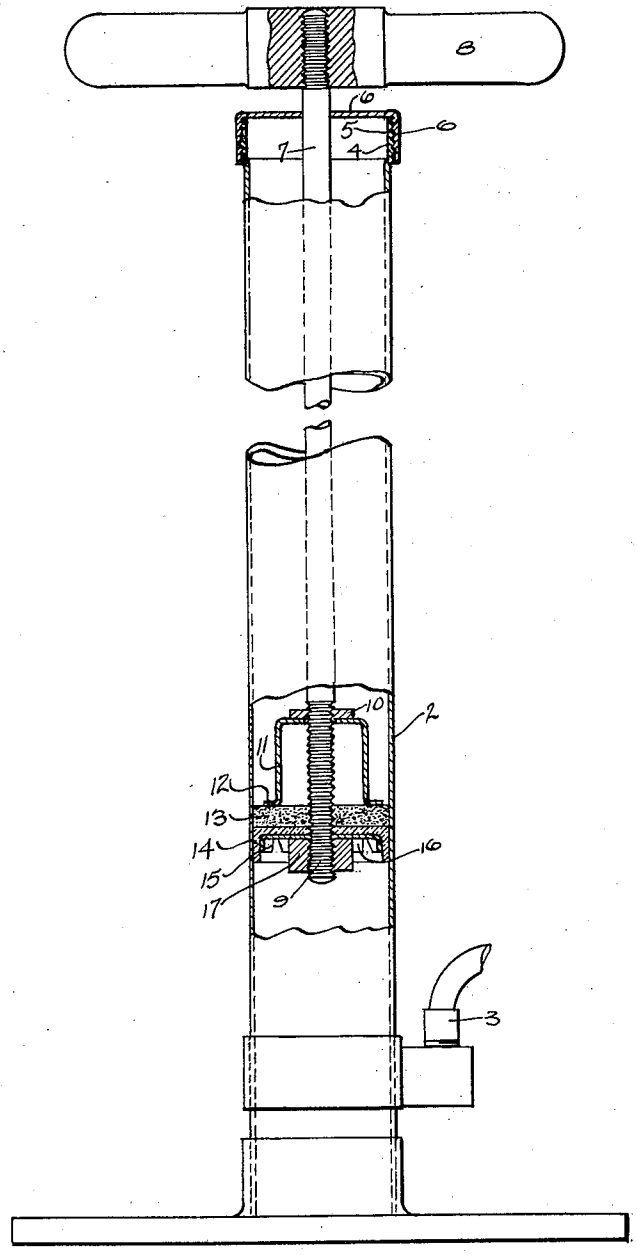
1,376,857. Patented May 3, 1921.



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SELF-LUBRICATING PISTON FOR AIR-PUMPS.

1,376,857. Specification of Letters Patent. Patented May 3, 1921.

Application filed July 2, 1920. Serial No. 393,653.

To all whom it may concern:

Be it known that I, JOHN H. BRADNACK, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented a new and useful Improvement in Self-Lubricating Pistons for Air-Pumps; and I do hereby declare the following, when taken in connection with the accompanying drawing and the characters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this application and represents a side view, partly in section, of an air-pump constructed in accordance with my invention.

This invention relates to an improvement in air-pumps and particularly to air-pumps which are provided with means for lubricating the piston, the object of the invention being a simple arrangement of the parts whereby a relatively large amount of grease may be introduced, with means to prevent escape more rapid than is necessary for the lubrication of the piston. A further object of the invention is to provide means for readily removing the piston from the cylinder; and the invention consists in the construction and arrangement of parts as hereinafter described and particularly recited in the claims.

In carrying out my invention, I employ the usual cylinder 2 with the usual outlet nipple 3. The upper end 4 of the cylinder is expanded and provided with threads 5 for the attachment of the usual cap 6 through which the piston-rod 7 extends, this rod being provided with the usual handle 8. The lower end 9 of the piston-rod is threaded, and onto it is turned a washer 10. Against this washer is placed a downwardly opening cup 11 formed at its lower end with a flange 12 which rests upon a washer 13 of felt or other suitable porous material. Against the lower face of the felt is the usual piston-cup 14 of leather or other suitable material, and within the leather cup is a cup 15 of spring-metal, the edges of which are notched to form a series of spring-fingers 16, which tend to force the edge of the leather cup against the inner walls of the cylinder. The parts are held in place by a nut 17, and the grease-cup is filled with grease.

By the up and down movement of the piston in pumping, the parts become heated and the grease will permeate the felt washer 13 and lubricate the walls of the cylinder, the felt washer 13, however, preventing a free flow of the grease from the grease-cup 11. By expanding the upper end of the cylinder, the piston is readily introduced into the cylinder.

I claim:

1. An air-pump comprising a cylinder, a piston-rod therein, a grease-cup applied to the lower end of the piston-rod, a porous washer closing the open lower end of the grease-cup, a leather piston-cup bearing against the porous disk, and means for connecting the parts with the piston-rod.

2. An air-pump comprising a cylinder and a piston-rod, a downwardly opening grease-cup mounted on the lower end of the piston-rod, a porous washer closing the lower open end of the grease-cup, a leather piston-cup bearing against the under face of the said porous disk, a metal cup within the leather cup and provided with spring-fingers, and a nut applied to the rod for holding the parts in position.

3. An air-pump comprising a cylinder and a piston-rod, the lower end of the said rod threaded, a washer set over the lower end of the rod, a grease-cup bearing against said washer and formed at its lower open end with a flange, a porous disk closing the lower open end of the grease-cup, a leather piston-cup bearing against the under face of the porous disk, a metal cup within the piston-cup, and a nut applied to the threaded end of the piston-rod for holding the parts in position.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN H. BRADNACK.

Witnesses:

WILLIAM J. KENNEDY,

JOHN T. MUNIGLE.