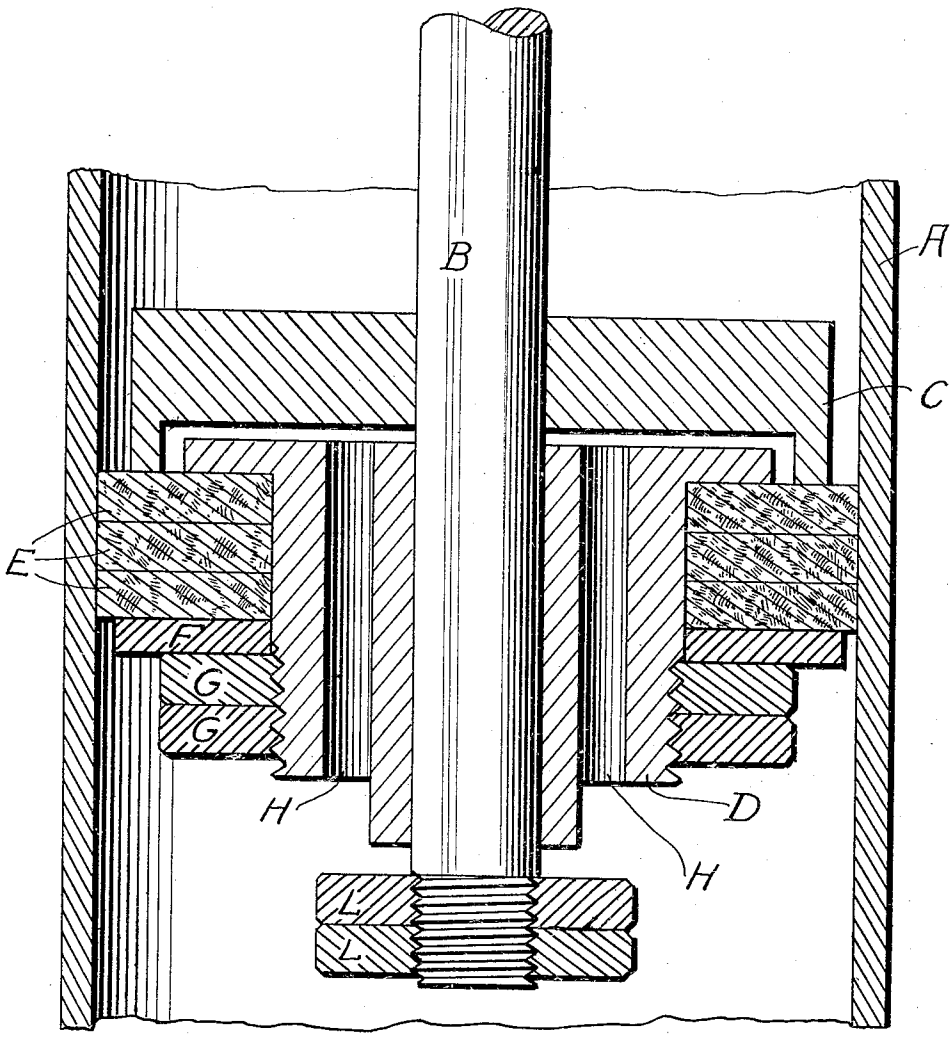
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FLUID PUMP

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INVENTOR.

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FLUID PUMP

Application filed June 7, 1929. Serial No. 369,225.

My invention relates to improvements in fluid pumps in which a reciprocating piston forces the fluid through a cylinder and stop valves; and the objects of the invention are to provide a cheap, simple, and reliable method of accomplishing the same.

I attain these objects by the mechanism illustrated in the accompanying drawing, in which is shown a cross-section of the cylinder, piston, and piston rod; and from which and the following description, the construction and operation are readily apparent.

In the drawing: A is the cylinder, B the piston rod, and C is a cup-shaped part securely fastened to the rod B.

D is a loose piston, free to slide longitudinally on the rod B, within certain limits. The piston D has a shoulder at one end against which packing rings E—E—E, are secured by flat washer F and lock nuts G—G.

Through the slidable piston D are longitudinal ports or openings H—H, for the passage of the fluid on the upstroke.

The lower edge of the inverted cup C is shown seated against the top of the packing E, and the valve is now closed. The cup C is smaller than the inside of the surrounding cylinder.

When the piston comes to the end of the down stroke and the rod starts moving upward, the loose-piston D stands still for a short time, the rod moving upward until the lock nuts L—L come in contact with the lower end of the loose-piston D. The cup C, moving with the rod D, unseats from the top side of the packing E at the beginning of the upstroke.

Further upward movement of the rod and piston, now moving together, causes the fluid to flow down around the outside of the cup C, which is smaller in diameter than the inside of the cylinder A. The fluid flows under the edge of the cup C, up over the shoulder of the piston D, and downward through ports H—H into the lower part of the cylinder.

At the beginning of the down stroke the loose-piston again stands still for a short time until the edge of the cup C seats against the packing E, after which further downward movement causes a pressure to be created in the fluid in the lower part of the cylinder, and the consequent fluid flow accomplishes the desired result.

This form of the invention is particularly suited for use as a hand operated air pressure pump for blow torches and pneumatic tire pumps.

Other forms of the invention are also suitable for oil and water suction pumps. It will be noted that the loose piston may be readily removed and new packing installed very simply.

Having thus described the invention, what I claim as new and useful, and desire to protect by Letters Patent, is:

1. A valved piston comprising a piston rod, a stop member secured to one end of said piston rod by means of a lock nut, a cup-shaped valve member secured to said rod, a ported sleeve member having packing thereon slidable on said piston rod between said cup-valve member and said stop member, said cup valve contacting with said packing member at one limit of movement of said sleeve member to prevent passage of fluid through said sleeve member, and said sleeve member contacting with said stop member at the other limit of travel of the sleeve member to permit the flow of fluid through said sleeve member.

2. In a valved piston, a piston rod having a cup-shaped valve member secured thereon, a stop member on said piston rod, a ported sleeve member having packing thereon limitedly slidable on said piston rod, said sleeve member contacting with said stop member at one limit of movement of said sleeve member on said piston rod, and said packing on said sleeve member contacting with said cup-shaped valve member at the other limit of movement of said sleeve member on said piston rod.

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