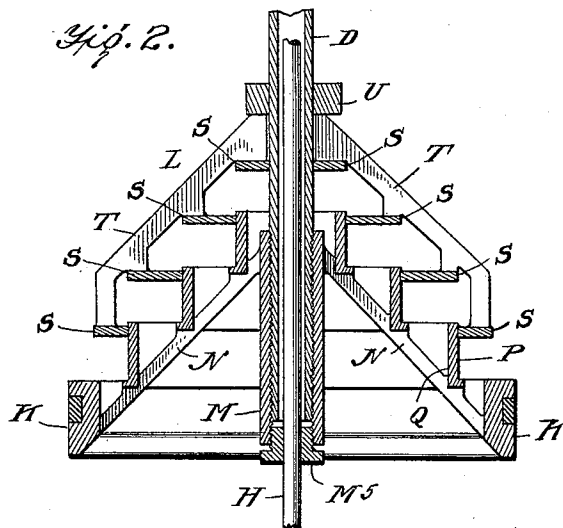
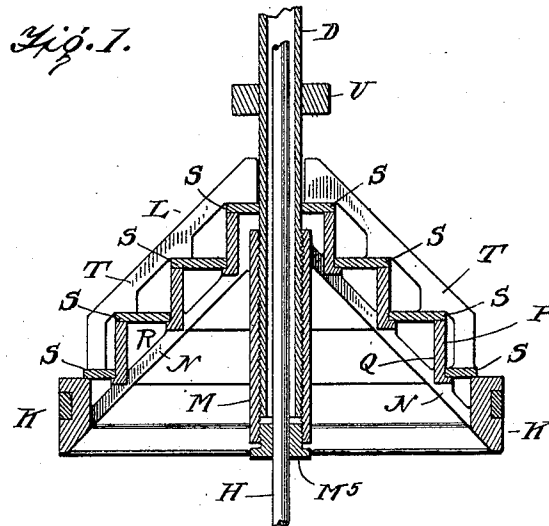


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PUMP.
APPLICATION FILED DEC. 19, 1907.

934,435.

Patented Sept. 21, 1909.



WITNESSES

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UNITED STATES PATENT OFFICE.

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PUMP.

934,435.

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To all whom it may concern:

Be it known that I, FRANK FOLEY, a citizen of the United States, residing at Crowley, in the parish of Acadia and State of Louisiana, have invented certain new and useful Improvements in Pumps, of which the following is a specification.

My improved valve comprises a series of members arranged in superimposed position, adapted to seat, one above the other, effecting closing position, and at the same time being adapted to lift, or be lifted, to opening position.

The superimposed members, or segments of my valve are designed for use upon a pump piston having an opening vertically therethrough, and the valve as a whole, is substantially conical in outer form, and has a conical inner space, whereby, with the members, or segments lifted to open position, greatly increased passage-way through the valve is provided, over valves as they have heretofore been constructed.

Figure 1 is a transverse vertical section through a pump piston and rod, with my improved valve shown applied thereto, the valve being shown in similar section, and with its members, or segments, illustrated at seated, or closed position. Fig. 2 is a sectional view, similar to Fig. 1, but illustrated with the members, valves, or segments at elevated, or open position.

In the practice of my invention, I employ two pistons arranged in a pump cylinder one above the other. One piston is carried by a hollow rod D, whose upper end is attached to any suitable form of device whereby to apply operating power, and the other is carried by a suitable rod H. The pistons are constructed with an annular base K, the form of a ring, and are provided on their upper sides with gravitating valves L, substantially conical on their upper or outer surface, and with a similar interior space. The piston A is constructed with a hollow hub M having interior screw-thread, adapting it for attachment on the screw-threaded lower end of the rod D. The opening through the hubs M, at their lower ends, is closed by a plug M², having an opening vertically therethrough adapted to receive the piston rods H and pack same against passage of air down through the piston rod D. The base, or ring portion K, of the pistons A and B is supported on the hubs M by spider-like frames, consisting of upwardly

and inwardly inclining webs, or bars N, extending from the inner side of the piston-base K, to the upper end of the hubs M.

In further describing my valve, I would say that it is constructed with a series of ring-like members P, attached to the inclined bars N of the valve, the members P having flat inner and outer walls Q, as shown. I would here say that the base of the piston K, the bars N, hub M, and members P, may be constructed integral, or made separate and secured together by bolts, or other suitable means not thought necessary to illustrate in my drawings.

It will be noticed that the lower member P of my valve, is made smaller than the opening through the piston-base K, and is located on the spider bars N, projecting above the upper side of the piston-base K, as shown by the drawing. The next above member P, is reduced in size, adapted to leave an annular opening between it and the lower member P, and the several other members P in the series thereof, are likewise reduced in size, and located on the bars N, leaving spaces R therebetween, substantially as shown by the drawing. On the outer wall of the members P, I slidably arrange annular plates S, carried by arms T. The plates S with their connecting arms T, are designed to have free play, confined in movement through contact with the upper edge of the members P, and a fixed shoulder U on the piston-rod D.

It is apparent that when the piston is on its upper stroke, the annular plates S will seat by gravity, closing passage-way R between the members P, and be held seated, by weight or pressure of fluid above the piston. Upon downward stroke of the piston the annular plates S will be forced from their seats to position shown in the drawing, thereby permitting free passage of fluid through the spaces R between the several members P of the valve.

I claim—

The combination in a pump piston constructed with openings therethrough and a rod whereby to work the piston, of valves on the piston controlling passageways through said openings, the piston being constructed with a series of superposed cylindrical portions gradually decreasing in diameter from the lower cylindrical portion thereof upward and spaced apart providing passageways between them, the cylindrical por-

tions being constructed with inner and outer walls parallel to each other and the axis of the piston, a series of flat annular valve sections arranged to slide on the outer parallel
5 walls of the cylindrical portions, to and from closed position, and seating in closed position upon the upper ends of the cylinders next lower to those on which they respectively slide, devices connecting said annular
10 valve sections, said devices being slidably arranged on the piston rod, a hub adapted to receive the piston rod, and a spider-like frame connecting said hub and piston, the spider-like frame being constructed providing fixed supports for said superposed cylindrical portions.

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Witnesses:

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