

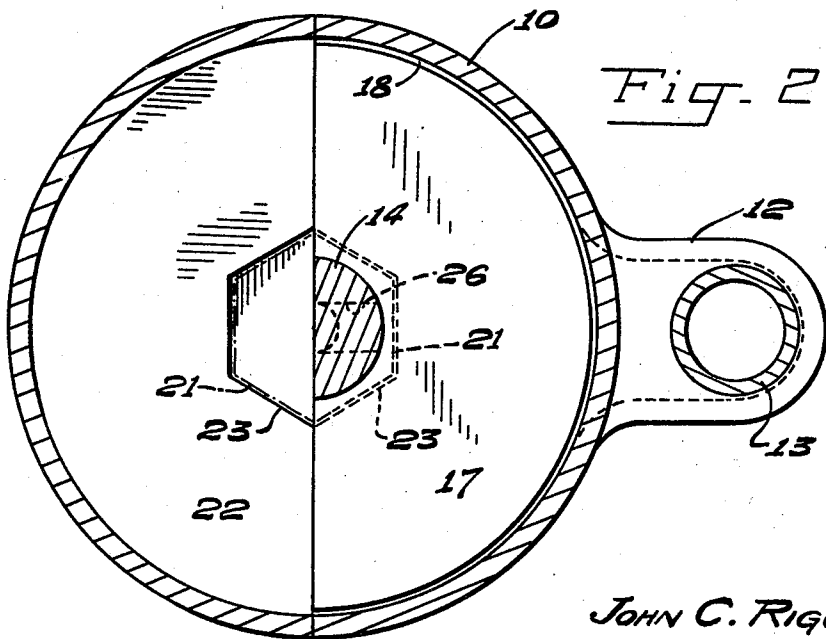
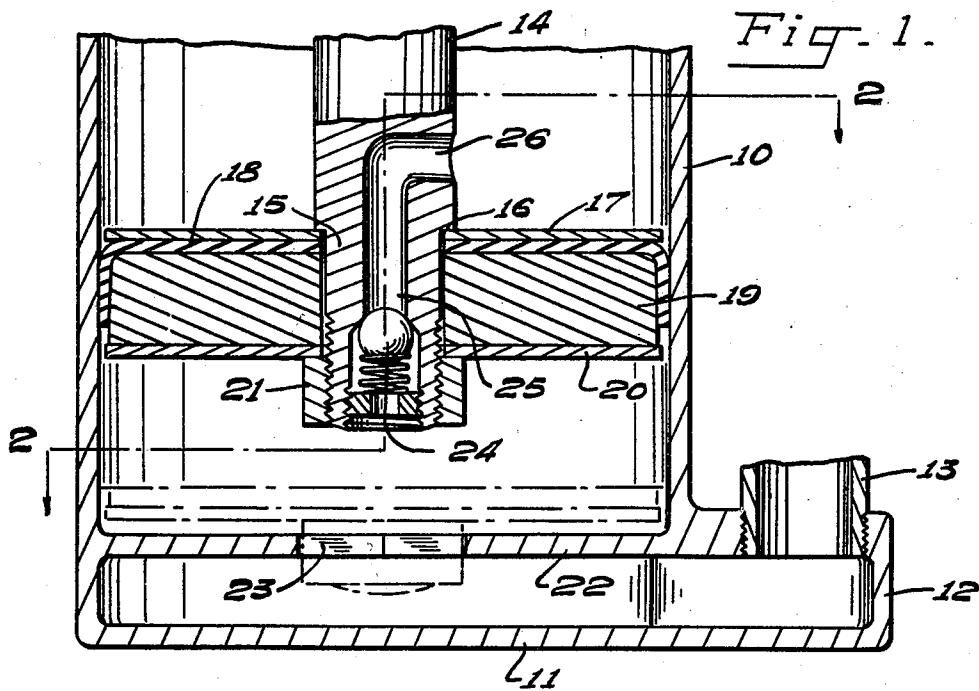
May 28, 1929.

J. C. RIGGS

1,715,212

PUMP

Filed Dec. 16, 1927



JOHN C. RIGGS
INVENTOR
BY Victor J. Evans
ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN C. RIGGS, OF DOS CABEZOS, ARIZONA.

PUMP.

Application filed December 16, 1927. Serial No. 240,523.

This invention has particular relation to pump structures embodying among other characteristics a cushion filler adapted to expand the pump plunger upon the compression stroke to obviate leakage between the plunger and the cylinder walls.

Another object of the invention comprehends a valve member adapted to open upon the suction stroke of the plunger to permit greater ease in operation.

A further object of the invention contemplates means carried by the pump adapted to tighten and compress the cushion filler to regulate the tension upon the plunger.

With the above and other objects in view, the invention further consists of the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawing and pointed out in the appended claim.

In the drawing:

Figure 1 is a fragmentary horizontal sectional view taken through the pump and illustrating the relative arrangement of the pump structure.

Figure 2 is a sectional view taken on line 2—2 of Figure 1.

Referring to the drawing in detail, wherein like characters of reference denote corresponding parts, the reference character 10 indicates the pump barrel having a base 11 having communication with an extended wall 12; the latter being adapted for connection with a discharge pipe 13.

A plunger or polish rod 14 mounted for reciprocatory movement within the pump barrel 10 is provided with a reduced extension 15 upon the lowermost end thereof which defines a shoulder portion 16 adapted to abut a metal washer 17. A plunger 18 carried upon the reduced extension 15 beneath the washer 17 is constructed in the ordinary manner and which has the peripheral edges thereof down turned and engaging the inner side walls of the pump barrel. A cushion filler 19 also carried by the reduced extension 15 is adapted to repose against the underside of the plunger 18 and against the inner side walls of the down turned portion thereof. An additional or lower metal washer 20 carried upon the reduced extension 15 and beneath the cushion filler 19 is supported by a nut 21 threaded upon the extremity of said extension.

A false bottom 22, carried within the pump barrel 10 at a suitable elevation above the bottom 11 thereof, is provided with an open-

ing 23 adapted to accommodate and engage the outer side walls of the nut 21 to facilitate compressing of the cushion filler 19 and expanding of the down turned portion of the plunger 18 against the inner side walls of the pump barrel 10 when the polish rod 14 is rotated to tighten the nut upon the threaded extension 15 therefor. It will thus be noted that the false bottom 22 and opening 23 therein serve, in effect, the purpose of a wrench which obviates the usual necessity of loosening the guide cap for the polish rod at the upper end of the pump barrel and replacement of the plunger.

A ball check valve 24 is carried within a bore 25 in the reduced extension 15 and polish rod proper, the latter having communication with that part of the barrel immediately above the uppermost washer 19 through an angularly disposed communicating bore 26. Said valve is operable only upon the suction or upward stroke of the plunger to relieve suction above the plunger and to reduce the partial vacuum forming within the bottom of the barrel. In other words, the air above the plunger will flow therethrough upon upward movement thereof in order that the larger portion of energy expended in the operation of the pump will be exercised upon the downward or compression stroke.

It will further be noted that the nut 21, carried upon the reduced extension 15 for the polish rod 14, may be received within the opening 23 in the false bottom 22 and the polish rod 14 rotated in a direction to tighten said nut, whereby the cushion filler 19 will tighten the plunger against the inner side walls of the pump barrel to prevent leakage whereby the plunger 18 will last for a longer period than the plunger devices now in use, due to the fact that the plungers have to rely upon their own resiliency to engage the side walls of the pump.

The invention is susceptible of various changes in its form, proportions and minor details of construction, and the right is herein reserved to make such changes as properly fall within the scope of the appended claim.

Having thus described the invention, what is claimed is:—

A pump having a polish rod provided with a reduced extension upon the lowermost end thereof, washers carried by the extension, a plunger member interposed between the washers, an expansible filler carried by the extension between the underside of the plunger

er and lowermost washer and engageable tangentially with the down turned periphery of the plunger to yieldingly tension the same outwardly against the inner side walls of the pump, a nut threaded upon the extremity of
5 the extension and adapted to regulate the tension of the filler against the plunger, and a false bottom carried within the pump having

an opening to accommodate and engage the nut to tighten the same upon the extension 10 when the polish rod is rotated to regulate the tension of the filler upon the depending portions of the plunger.

In testimony whereof I affix my signature.

JOHN C. RIGGS.