

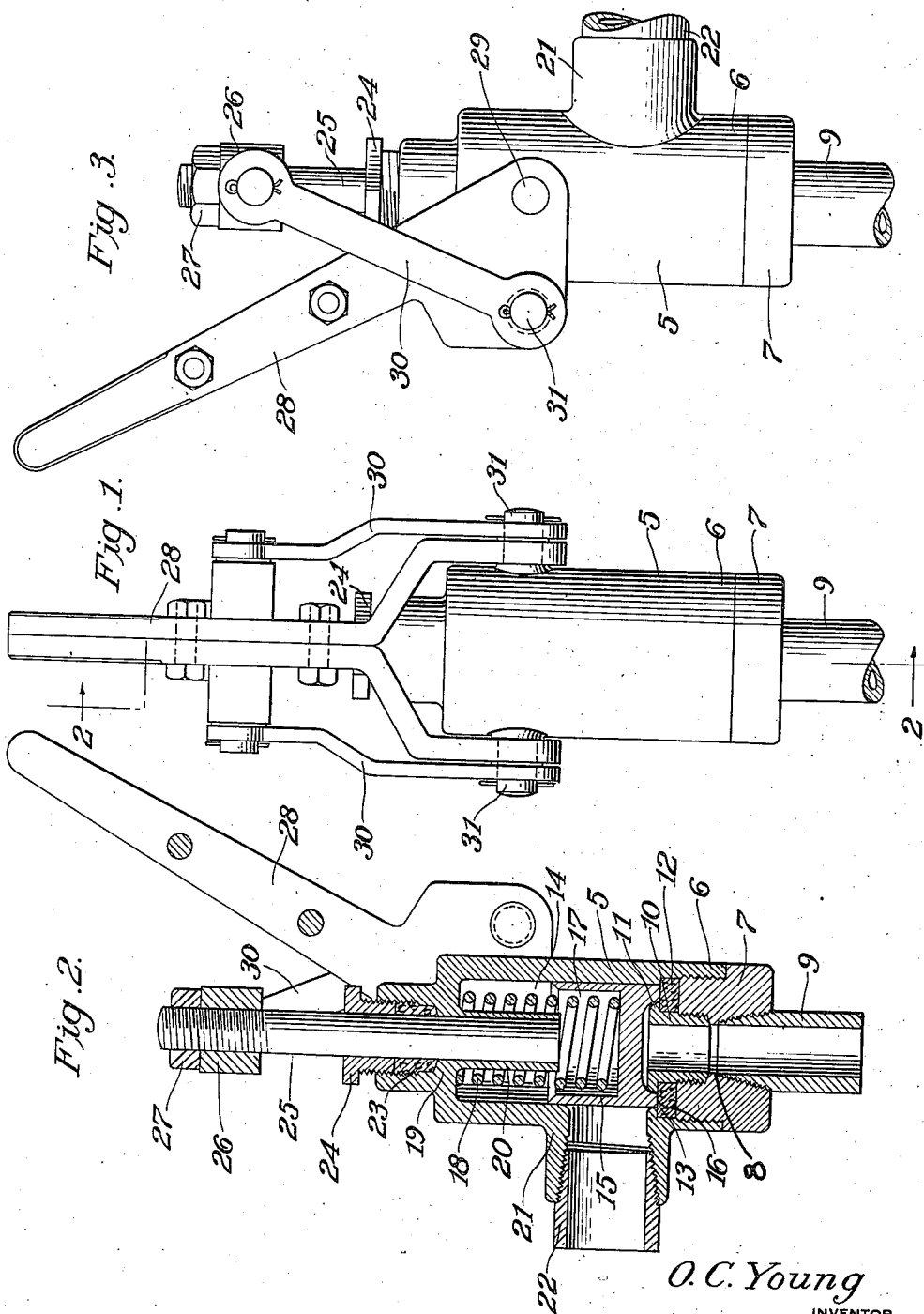
Nov. 26, 1940.

O. C. YOUNG

2,222,926

VALVE

Filed Jan. 22, 1940



O. C. Young

INVENTOR

BY Victor J. Evans & Co.

ATTORNEYS

UNITED STATES PATENT OFFICE

2,222,926

VALVE

Otis C. Young, Seagraves, Tex.

Application January 22, 1940, Serial No. 315,072

1 Claim. (Cl. 251—3)

My invention relates to valves and more particularly to pump priming valves.

The principal object of the invention is to provide a pump priming valve equipped with means for exhausting air from a pump on its compression stroke and to permit the supplying of water or other priming liquid on its suction stroke to enable the pump to quickly pick up its suction, thereby materially reducing the time required for such action as well as resultant saving in fuel energy.

Another important object is to provide a device of the character described so constructed and arranged that the required quantity of water may be pumped in a shorter space of time due to the exhausting of air from the pump, not only upon the starting of the pump but during its operation, since the formation of air plugs or pockets during the pumping action will bring the priming valve into operation to exhaust the air.

A further object of the invention is to provide a device of the character described which is simple in construction, durable in use, efficient in operation and economical in manufacture.

Other objects and advantages will be apparent from the following description, appended claim and annexed drawing.

Referring to the drawing wherein like reference characters designate like parts throughout the several views:

Figure 1 is an end elevation of my invention.

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

Figure 3 is a side elevation of my novel form of valve.

It is well known that after a pump has been idle for any length of time, air accumulates in the pump and such air must be removed before the pump will properly function in the pumping of water or other liquid. My invention permits the air to be discharged from the pump and enables priming water or other liquid to be supplied thereto for priming the pump upon starting or at any time during its operation that the pump might become air bound.

My novel form of valve, which permits of the foregoing desiderata being obtained, comprises in structural detail, a valve casing 5 having an open lower end section 6 closed by a plug 7 threaded therein. The plug 7 has in turn threaded within the bore 8 thereof, the upper end of a pipe 9, the lower end of which is connected to a pump and effects communication with the intake chamber of the pump at the highest point in said chamber.

The upper end of the bore 8 of the plug 7 has threaded therein the lower end of a nipple 10, the upper end of which is formed with a circumferentially extending flange 11 spaced from and overlying the upper face of the plug. Seated between said flange 11 and the plug 7 is a gasket 12, having a circumferentially extending edge section seated within a groove 13 formed in the valve casing adjacent the plug 7.

The valve casing 5 is provided with a bore 14 in which is slidably mounted a valve member 15, the lower face of which is formed with a circumferentially extending flange 16 for seating engagement with the gasket 13 between the wall of the casing 5 and the collar 11 as clearly illustrated in Figure 2.

The opposite face of the valve member 15 is fashioned with a cul-de-sac 17 in which is seated the lower end of a coil spring 18, the upper end of which has engagement with the inner face of the top wall 19 of the casing.

The top wall 19 has fashioned on the under face thereof, a downwardly extending sleeve 20 terminating slightly below the upper face of the member 15 when the latter is in seating engagement with the gasket 12. The valve casing 5 is fashioned with a laterally disposed port 21 in which is threaded an end of a pipe 22, and said port is closed to the bore of the casing by the valve member when the latter is seated on the gasket 12.

The upper face of the wall 19 is fashioned with an extended section provided with a packing 23 and nut 24 through which extends a plunger 25. The lower end of the plunger 25 extends within the sleeve 20 and the upper end of said plunger has adjustably threaded thereon a cross head 26 by means of a lock nut 27. The lower or bifurcated end of an eccentric lever 28 is pivotally connected to the sides of the casing 5 by means of pivot pins 29 and links 30 pivotally connect the cross head 26 to the lower end of said lever, as at 31, and laterally of the pivot pins.

In use, the device being attached to a pump through the medium of the pipe 9 as heretofore set forth, and the parts being in the position illustrated in Figure 2, operation of the pump serves to build up air pressure in the cylinder of the latter and said air pressure is exhausted through the pipes 9 and 22 by the air acting against the valve member 15 in a manner to move the same upwardly against the tension of the spring 18.

After the air has been exhausted from the pump, the lever 28 is actuated downwardly to dis-

pose the pivot 31 subjacent the pivot 29 and lock the lower end of the plunger 25 in engagement with the lower end wall of the cul-de-sac 17 thereby maintaining the valve member 15 in locked position and closing the port 20 relative to the pipe 9. When the valve is thus operated, the pump is primed through its suction valve.

From the foregoing it will be apparent that I have provided a simple and efficient priming valve which may be operated at any desired time to effect priming of a pump and said valve is so constructed and arranged as to act as a check valve whereby air in the pump cylinder may be automatically exhausted therefrom to preclude the pump becoming air bound.

It is also obvious that the invention is not confined to the herein described use therefor as it may be utilized for any purpose to which it is adaptable. It is therefore to be distinctly understood that the invention is not limited to the specific construction as illustrated and described, as the same is only illustrative of the principles of operation which are capable of extended application in advance forms, and that the inven-

tion comprehends all construction within the scope of the appended claim.

What I claim is:

A device of the character described, comprising, a casing having an upper closed end and a lower open end, said casing fashioned with a laterally disposed discharge port between said ends, a sleeve carried by said upper end and extending towards said open end, a closure element fitting in said open end and provided with a bore, a valve member seated on said element and closing communication between said bore and port, said valve member formed with a socket for receiving said sleeve, a spring arranged about said sleeve and extending into said socket and engaging said member for normally maintaining the latter seated on said element and operable by pressure through said bore to permit actuation of said member in a manner to dispose said sleeve within said socket and thus establish communication between said bore and port, and means operable to maintain the member seated on said element against displacement by pressure in said bore.

OTIS C. YOUNG. 25