J. M. McWILLIAMS.

PUMP.

APPLICATION FILED NOV. 6, 1911.

1,040,231.

Patented Oct. 1, 1912.

2 SHEETS—SHEET 1.

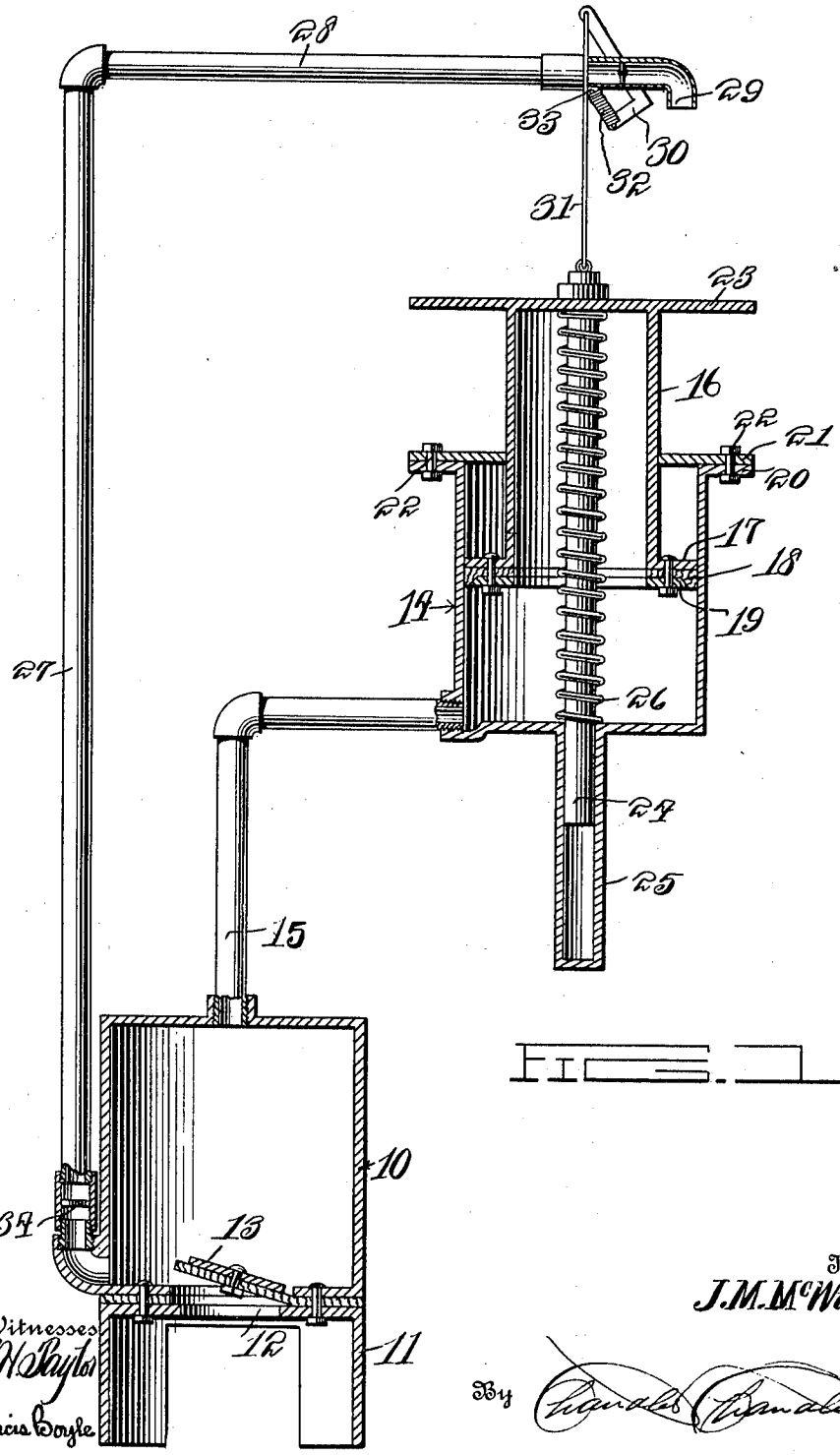

FIG. 1

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2 SHEETS—SHEET 2.

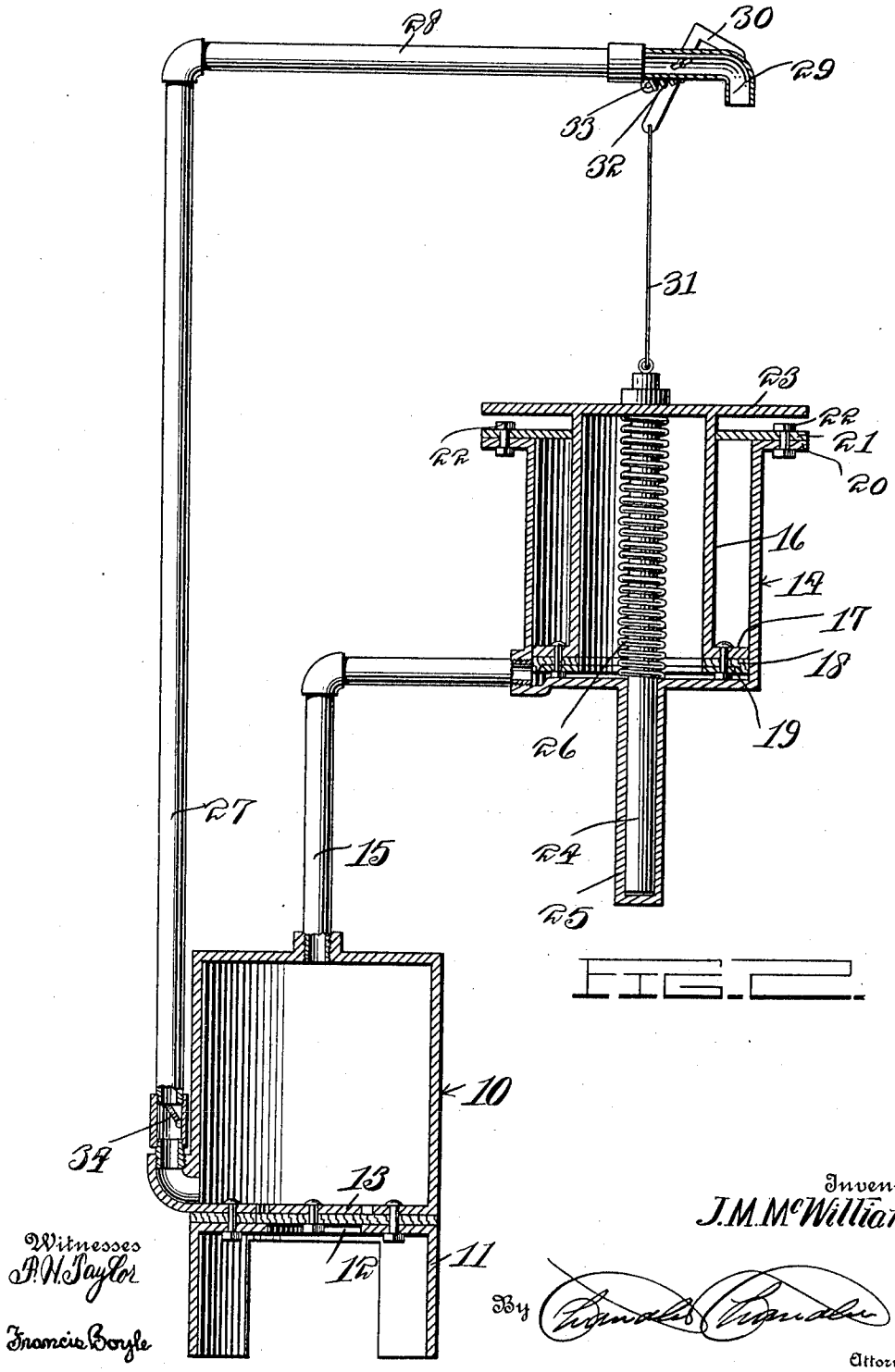

FIG. 2.

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UNITED STATES PATENT OFFICE.

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PUMP.

1,040,231. Specification of Letters Patent. Patented Oct. 1, 1912.

Application filed November 6, 1911. Serial No. 658,905.

To all whom it may concern:

Be it known that I, JAMES M. McWILLIAMS, a citizen of the United States, residing at Leesville, in the parish of Vernon, State of Louisiana, have invented certain new and useful Improvements in Pumps; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to pumps of that class designed to have the pump cylinder submerged in the well and to have the water piped from the cylinder to some distance from the well.

The object of this invention is to provide means for holding the water in the pipe which leads from the stand pipe in the well to the discharge faucet from which the water is drawn, so that water will begin to flow from the faucet upon the initial actuation of the pumping means rather than there being a long interval before the water flows from the faucet as would be the case were the water in the discharge pipe allowed to drain out as is now ordinarily done.

A further object of the invention is to provide a pump in which the piston will serve to mechanically operate the spigot or like valve of the discharge pipe, there being tension means employed for returning both parts to their released position so that water is constantly maintained in the discharge pipe without manual attention.

With the above objects in view the invention consists of certain novel details of construction and combination of parts hereinafter fully described and claimed, it being understood that various modifications may be made in the minor details of construction within the scope of the appended claims.

In the accompanying drawings forming part of this specification:—Figure 1 is a longitudinal sectional view through the pump, showing the parts in released position. Fig. 2 is a longitudinal sectional view through the pump showing the parts in operative position.

Referring now to the drawings in which like characters of reference designate similar parts, 10 designates a cylinder which is designed to be submerged in the well, and is provided on its bottom face with a depending flange 11 which is adapted to rest upon the bottom of the well and support the cylinder. Formed in the bottom of the cylinder is an inlet opening 12 which is closed by a flap valve 13. The cylinder may be formed of any desired shape and of any suitable material.

The pump cylinder 14 is designed to be disposed at the particular place where the water is needed, and is connected to the cylinder 10 through the instrumentality of a pipe 15, the latter entering the cylinder 10 above the flap valve, preferably through the top wall of the cylinder. A hollow piston 16 works in the cylinder 14, and is provided with a circumferential flange 17 which engages the inner wall of the cylinder and to which a packing ring 18 is secured through the instrumentality of a clamping washer 19, this construction forming an air-tight joint between the piston and cylinder.

An annular supporting flange 20 projects outwardly from the top or open end of the cylinder, and to this flange an annular guard flange 21 is clamped through the instrumentality of bolts 22, this flange overlying the flange 17 of the piston and forming a stop to engage the latter and prevent accidental escape of the piston from the cylinder. The hollow piston is provided at the upper end with a circular head 23 which extends in all directions beyond the cylinder and forms means for manually depressing the cylinder. The head is provided centrally with a depending cylindrical weight 24 the lower end of which fits in a guide tube 25 which depends from the bottom wall of the cylinder. A helical spring 26 is seated on the weight and bears with its opposite terminal convolutions against the piston head and bottom wall of the cylinder, and normally holds the piston at its outer limit of movement, or in other words in released position.

A stand pipe 27 is connected at its lower end to the submerged cylinder 10, and is provided at its upper end with a lateral extension 28 which extends from the well to the place the water is needed and terminally overhangs the piston. The pipe 28 terminates in a spigot 29. Pivoted adjacent the elbow to the spigot valve stem is an L-shaped lever 30, one leg of which is connected by a cord or similar connector 31 to the piston head, a helical spring 32 being connected at one end to the mating leg of the

lever, and at the opposite end to a depending lug 33 carried by the spigot. The spring normally holds the lever in such a position as to maintain the spigot valve closed when the piston is in released position. Upon depression of the piston, the lever is rocked so as to open the spigot valve. A check valve 34 is disposed in the stand pipe near its connection with the submerged cylinder. It is to be understood that this stand pipe may be arranged either within or without the cylinder, and it is preferable to dispose the intake end of the pipe adjacent to the bottom of the cylinder.

The operation may be briefly described as follows: Upon depression of the piston, air is forced from the pump cylinder through the pipe 15 and into the submerged cylinder. The water contained in the cylinder is forced out and discharged through the discharge pipe 27, as above stated the spigot valve being opened to permit of the discharge of the water upon depression of the piston. Both check valves 13 and 34 are normally closed, the check valve 34 opening upon depression of the piston as will be understood. Upon the piston being released, it is immediately moved to its outward limit of movement by the spring 26, and a partial vacuum created in the pump cylinder, which causes the suction of water up through the pipe 15 whereupon the valve 13 opens and permits of water flowing into the submerged cylinder to replace that discharged, the check valve being positively closed by the next depression of the piston. As above stated the valve of the spigot is closed by the spring 32 upon movement of the piston to released position so that air cannot enter the discharge pipe, and thus water is maintained in the discharge pipe 28 and the labor of pumping consequently reduced to a minimum.

What is claimed, is:—

1. A pump including a submerged cylinder, an air pump communicating with said cylinder, a discharge pipe communicating with said cylinder, and having a check valve, an outlet valve in said discharge pipe, a spring controlled lever adapted to normally hold said outlet valve closed, and a connection between said lever and the air pump piston serving to open said outlet valve upon movement of the piston to operative position.

2. A pump including a submerged cylinder, an air pump communicating with said cylinder, a spring holding the piston in the outer limit of movement, a discharge pipe communicating with said cylinder and having a check valve, an outlet valve in said pipe, a spring controlled lever connected to said outlet valve and normally holding the same closed, and a connection between said lever and said piston serving to rock said lever and open said outlet valve upon movement of the piston against the tension of the piston spring.

In testimony whereof, I affix my signature, in presence of two witnesses.

JAMES M. McWILLIAMS.

Witnesses:

H. W. Burr,

E. M. Gorden.