No. 890,962. PATENTED JUNE 16, 1908.

H. CLINE.

PUMP.

APPLICATION FILED JUNE 15, 1907.

Fig. 1.

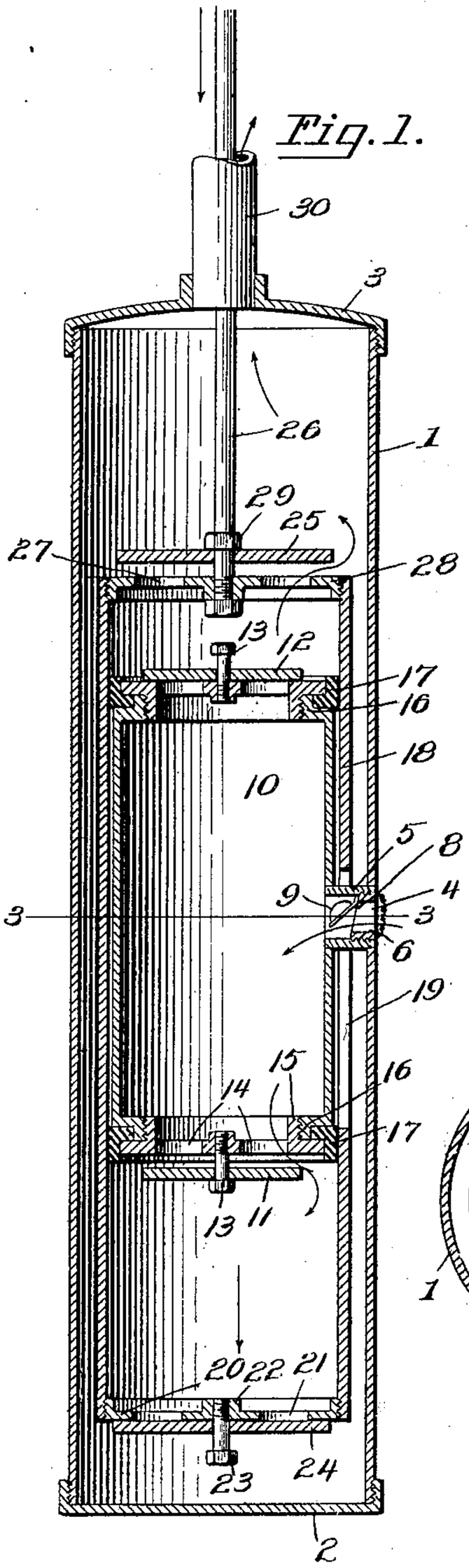


Fig. 2.

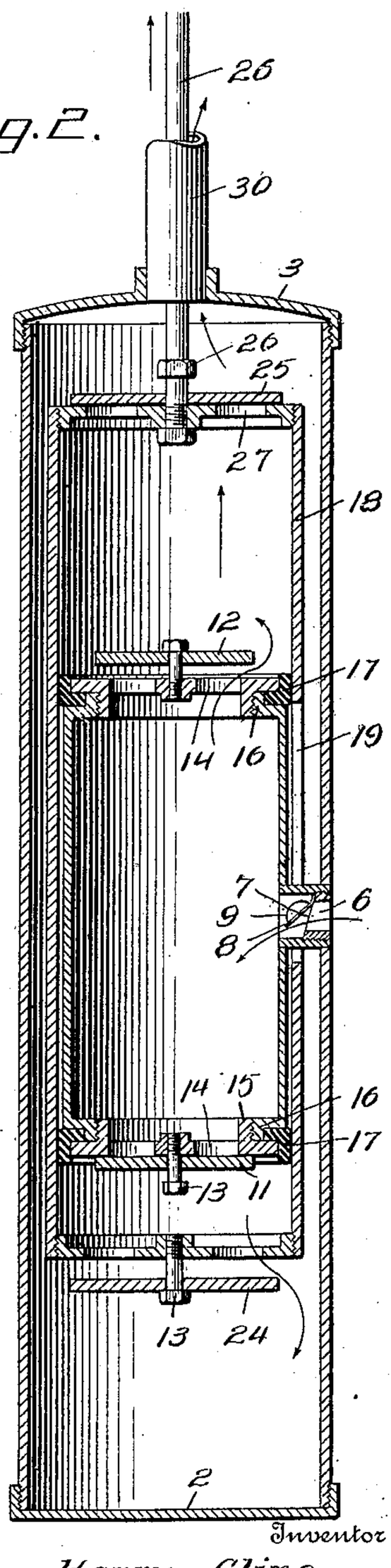
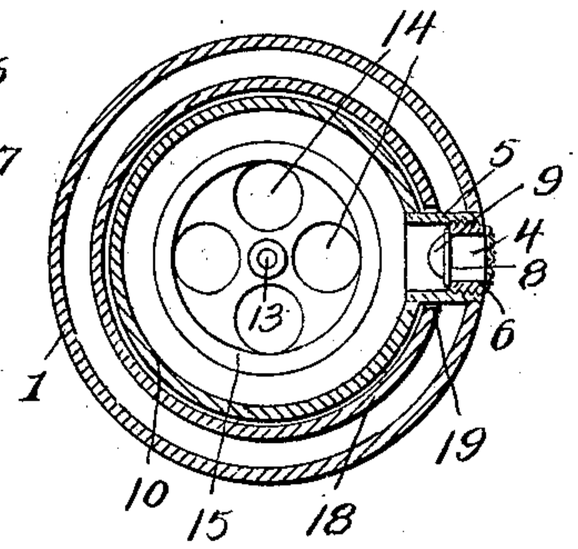


Fig. 3.



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PUMP.

No. 890,962. Specification of Letters Patent. Patented June 16, 1908.

Application filed June 15, 1907. Serial No. 379,214.

To all whom it may concern:

Be it known that I, HARRY CLINE, a citizen of the United States, residing at Idaville, in the county of Adams and State of Pennsylvania, have invented new and useful Improvements in Pumps, of which the following is a specification.

This invention relates to pumps, and one of the principal objects of the same is to provide a pump of the submerged casing type and to improve the construction and simplify the operation of pumps of this character.

Another object of the invention is to provide a pump of this character which is light of draft, which will operate smoothly and which will raise water rapidly from a well or pit.

These and other objects may be attained by means of the construction illustrated in the accompanying drawings, in which:—

Figure 1 is a central vertical section of a pump made in accordance with my invention and showing the piston at the lower limit of its stroke. Fig. 2 is a similar view showing the piston at its upper limit of stroke. Fig. 3 is a transverse section on the line 3—3 of Fig. 1.

Referring to the drawings for a more particular description of my invention, the numeral 1 designates the outer casing of the pump provided with a removable bottom cap 2 and a removable upper cap 3. An intake port 4 is formed in the side wall of the casing 1 at a point nearly central thereto, said port comprising a short pipe section 5 and an inner pipe section 6 threaded therein, said inner section 6 having an inclined inner edge 7. A flap valve 8 is secured at the upper edge of the inner pipe section 6 and is provided with a suitable weight 9 to close the valve. The inner end of the pipe section 5 is connected to the inner casing 10, said inner casing being provided with a valve 11 at its lower end and a similar valve 12 at its upper end; the valves 11 and 12 each comprise a disk mounted to move on a bolt 13 fitted to a plug having openings 14 therein and connected by a threaded boss 15 to the threads formed on the inside of a reduced portion 16 of the casing 10. A rubber gasket 17 is fitted between the plug 15 and the shoulder on the end of the casing 10, said gasket fitting the inner wall of the reciprocating piston 18.

The piston 18 is provided with a slot 19 in the side wall thereof which permits said piston to be reciprocated, the intake passing through said slot. At the lower end of the piston 18 a threaded valve seat 20 is connected thereto, said valve seat having openings 21 therein and a central boss 22 to which is connected a threaded bolt 23. A disk valve 24 is provided with a central perforation through which the bolt 23 passes and said disk being adapted during the down stroke of the piston to cover the apertures 21 in the valve seat. At the upper end of the piston a similar valve 25 is mounted upon the piston rod 26, said valve 25 adapted to close the openings 27 in the valve seat 28. The piston rod 26 is threaded into a boss in the valve seat 28 and a stop nut 29 limits the movement of the disk 25. The piston rod 26 passes through an outlet pipe 30 connected to the cap 3.

The operation of my pump may be briefly described as follows: The casing being submerged in a well or pit by reciprocating the piston rod 26 by any suitable mechanism the piston 18 is moved downward as shown in Fig. 1 to draw water into the casing 10 and through the openings in the valve seats 15 and into the piston 18. At the upper stroke of the piston valve 8 is closed, valve 24 is opened, valve 11 is closed and valve 12 opened. On the next stroke of the piston the water between valves 12 and 25 passes through the openings 27 and passes through the outlet pipe 30 as will be understood.

From the foregoing it will be obvious that a pump made in accordance with my invention is of comparatively simple construction, is of light draft and will operate smoothly and efficiently for its purpose.

Having thus fully described the invention, what is claimed as new is:—

1. A pump comprising an outer casing and an inner casing, an intake extending from the outer casing into the inner casing, valves secured at the opposite ends of the inner casing, and a piston surrounding the inner casing and provided with a slot through which the intake passes, an outlet pipe connected to the outer casing and a piston rod extend-

ing through said outlet and connected to the piston.

2. A pump comprising an outer casing and an inner casing, an intake at the side of the casing extending from the outer casing to the inner casing, a valve in said intake, valves at the opposite ends of the inner casing, a hollow piston provided with a slot through which the intake passes, valves at the opposite ends of said piston, and a piston rod connected to said piston and extending through the outlet pipe.

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

HARRY CLINE.

Witnesses:
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A. V. HANES.