(No Model.)

S. G. MILLS.

PUMP.

No. 459,299. Patented Sept. 8, 1891.

Fig. 1

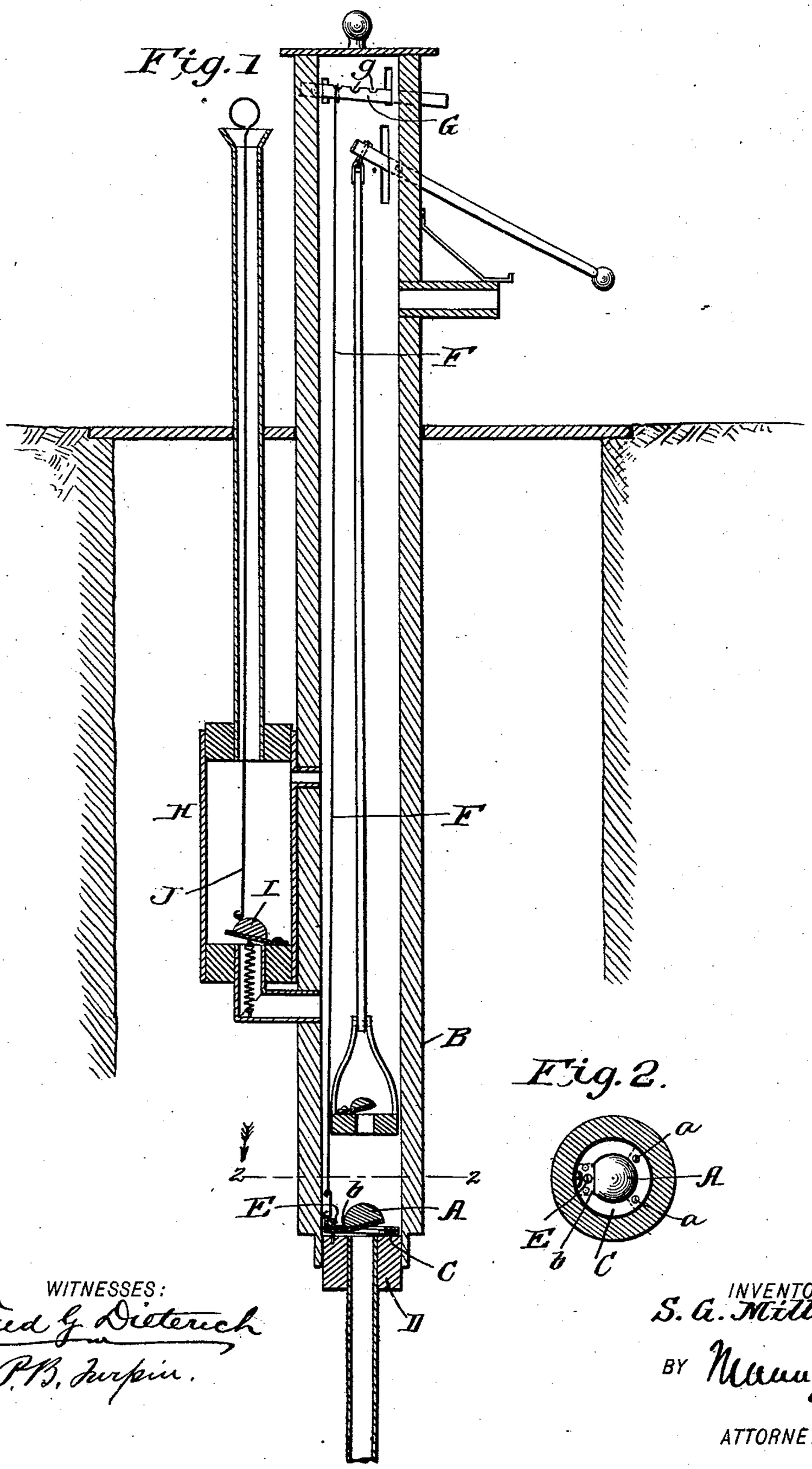

Fig. 2.

WITNESSES:

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PUMP.

SPECIFICATION forming part of Letters Patent No. 459,299, dated September 8, 1891.

Application filed April 3, 1891. Serial No. 387,564. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN G. MILLS, of Wichita, in the county of Sedgwick and State of Kansas, have invented a new and useful Improvement in Pumps, of which the following is a specification.

My invention is an improvement in the class of pumps which are provided with means for allowing water to flow out at the bottom of the piston-cylinder or stock in order to avoid its freezing therein in very cold weather. I hinge the check-valve, which is usually located at the bottom of the cylinder, to the free portion of a spring-plate, one edge of which is secured in place, and provide means for raising such free portion, so that water may escape beneath it and the attached valve.

In the accompanying drawings, Figure 1 is a longitudinal section of a pump provided with my improvements, and Fig. 2 is a cross-sectional view on about line 2 2 of Fig. 1.

A check-valve A is located at the bottom of the cylinder or upper stock B, as usual and necessary in suction or lift pumps. This valve is hinged to an annular spring-plate C, which is secured on a suitable fixed portion of the stock—in this instance to the top of the lower stock or tube D, that extends downward in the well. The said spring-plate C is secured by screws *a* at one side, but left free at the other, to which the valve A is hinged by means of the leather piece *b*, that extends beneath it and forms its under side or face. The said piece *b* is attached underneath the spring C by means of rivets; but it will be obvious that the means of attachment may be varied. The free portion of the spring-plate C may be raised off the seat by suitable means, as shown in Fig. 1, and since the valve A is necessarily raised at the same time an opening is formed beneath them, through which the water in the cylinder escapes downward into the tube D. It is apparent that so soon as the plate is released it and the valve will instantly resume their places, and thus again cut off the downward passage of water from the cylinder. The extent to which such free portion of the plate C may be elevated is limited, as desired, by an adjustable stop E, consisting of a screw passing through it and set in the head of the tube D, Fig. 1. As a means for thus raising the plate C, I employ a rod or stout wire F and a lever G, notched at *g*, so the wire F may be adjusted along the same. While the plate C is preferably spring-actuated by constructing it of spring metal, so it will spring by its own properties, it is manifest that a coil or other spring may be arranged to actuate the plate C, instead of arranging the plate to be actuated by its own resiliency.

In connection with the described devices for emptying the stock I provide priming mechanism for priming the stock after it has been emptied. This priming mechanism consists of a short cylinder H, arranged alongside the pump-stock, connected at its opposite ends with the stock above the check-valve in such stock and provided with a spring-actuated check-valve I, from which an operating-rod J extends upward into convenient reach of the operator.

In the operation of pumping the priming-cylinder will be filled. Then after the pumping has ceased and the stock has been emptied, by lifting the plate C sufficient water will remain in the priming-cylinder to aid in starting the pump when it is again desired to operate the latter.

The primer in the construction shown is formed with a stock of wood and metal and metal tubes connecting it with the pump-stock, and an upwardly-projecting metal tube leading above the ground. Where desired, the primer may be made entirely of wood, extended above the ground and connected by wooden tubes with the pump-stock.

What I claim is—

1. The combination, with the cylinder and check-valve, of a spring-plate secured at one side or edge and having its other edge or side free, to which free side the said valve is attached, an adjustable stop for limiting the upward movement of the plate, and means for elevating the latter, as shown and described.

2. The combination, with the lever pivoted to the stock and provided with notches, of the rod having its upper end suitably constructed to adapt it for engagement and adjustment in said notches, and the spring-plate and check-valve located at the bottom of the cylinder, as shown and described.

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Witnesses:
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