(No Model.)

C. A. SELLON.

PUMP.

No. 522,857. Patented July 10, 1894.

Fig. 1.

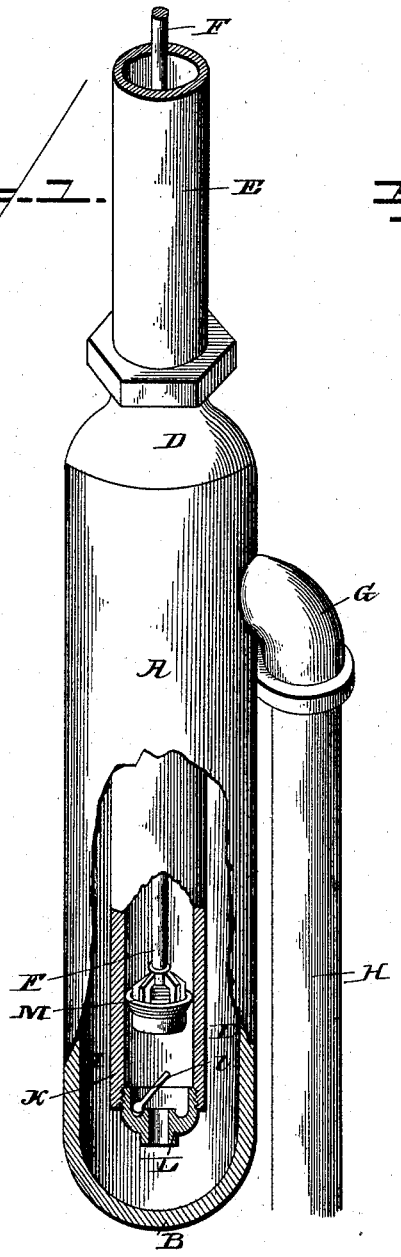
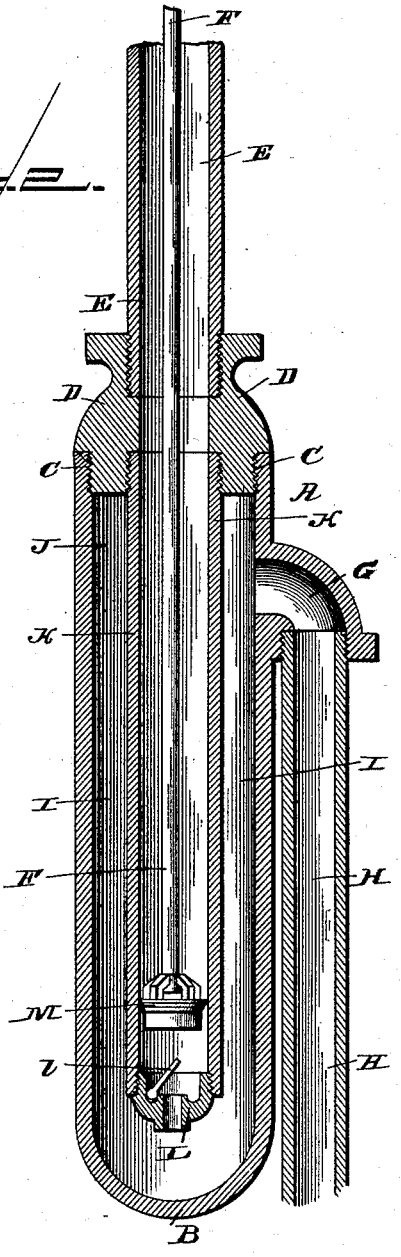


Fig. 2.



Witnesses
E. K. Stewart.
L. P. Wolhaupter

Inventor
Charles A. Sellon,
By his Attorneys,
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UNITED STATES PATENT OFFICE.

CHARLES A. SELLON, OF PIKE, NEW YORK, ASSIGNOR TO CLAYTON A. METCALF, OF SAME PLACE.

PUMP.

SPECIFICATION forming part of Letters Patent No. 522,857, dated July 10, 1894.

Application filed March 25, 1893. Serial No. 467,545. (No model.)

To all whom it may concern:

Be it known that I, CHARLES A. SELLON, a citizen of the United States, residing at Pike, in the county of Wyoming and State of New York, have invented a new and useful Pump, of which the following is a specification.

This invention relates to pumps; and it has for its object to provide special improvements in pump cylinders in connection with the ordinary reciprocating plunger, whereby efficient means will be provided for holding water in the main cylinder, so that the pump will prime itself when the valves become impaired or have sand or dirt thereunder which ordinarily causes the same to leak, and further to provide a pump cylinder which is so connected to the inlet or induction pipe, that a vacuum will not be produced in such pipe during the rapid working of the pump, even when the water is being lifted from deep wells.

To this end the main and primary object of the present invention is to generally improve upon the construction of pumps in order to secure greater ease and efficiency in operation.

With these and other objects in view which will readily appear to those skilled in the art, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a perspective view, partly in section, of a pump constructed in accordance with my invention. Fig. 2 is an enlarged vertical longitudinal sectional view of the same.

Referring to the accompanying drawings, A represents the large outer shell or cylinder having a lower closed rounded end B, and an upper interiorly threaded end C, into which is removably screwed the exteriorly and interiorly threaded cylinder cap D, into which is fitted the ordinary pump pipe E, leading to the top of the well and the point of discharge, and accommodating the reciprocating pump or plunger rod F, operated by any suitable handle devices such as are in common use.

The large outer shell or cylinder A, is designed to be arranged at a point below the frost line, so that the operation of the pump will not be affected by freezing, and said shell or cylinder A, is further provided near its upper end with the off-standing interiorly threaded inlet neck G, into which is threaded the upper end of the inlet or induction pipe H, which leads into the water in the well. By reason of the supply or inlet connection with the outer shell or cylinder A, near its upper end, a water pocket I, is formed between the lower closed end of the cylinder and the inlet neck G, and which pocket is always full or partly full of water, thereby forming above the inlet neck an air space J, which materially assists in providing for the continual supply of water into the cylinder A, during the operation of pumping, as will be more particularly noted.

Arranged within the outer closed shell or cylinder A, is the smaller inner working cylinder K. The inner working cylinder K, is threaded at its upper end into the interiorly threaded portion of the cylinder cap D, and has its lower end depend to within a short distance of the rounded end B, of the outer cylinder, and has removably attached to such lower end the valved cylinder cap L, which carries the foot valve *l*, for said inner cylinder.

A valved plunger or piston head M, is attached to the lower end of the pump or plunger rod F, and is designed to reciprocate within the inner cylinder K, to provide for drawing the water into the same and lifting it to the point of discharge.

Now from the foregoing it is thought that the construction and operation of the herein described pump will be apparent to those skilled in the art.

Bearing in mind that the lower portion of the cylinder A, after pumping, is always left partially filled with water, so that the inner cylinder has its lower valved end always submerged in such water, in starting the pump, the up stroke of the valved plunger head, within the inner cylinder, will draw or suck the water through the lower valve and into the inner cylinder. This up stroke of the plunger, necessarily lowers the level of the water in the water pocket or space I, inside of the outer cylinder, and at the same time causes a partial vacuum in the space above the water level which includes the top air space J. This is due to the suction created by the up stroke of the plunger, and as said

plunger starts on its down stroke, it closes the valve at the lower end of the inner cylinder, but the supply of water to the outer cylinder does not stop, owing to the fact that a partial vacuum has been left in the top portion of the outer cylinder which must be filled.

The operation just described is rendered effective by reason of the fact that the outer shell or cylinder A, and the inner working cylinder K, are relatively proportioned with respect to each other, so that the space inclosed by the large outer cylinder A, is of an area greater than the space occupied by the greatest amount of water which can be drawn into the inner working cylinder by the upstroke of the plunger therein. Therefore, after the pump has been once properly started the water level in the water pocket or space I, of the outer shell or cylinder, never passes below the lower valved end of the inner working cylinder, and thereby provides means for rendering the air space above the water level effective in assisting to keep up the supply of water to the outer shell or cylinder, which has already been explained.

It will be obvious that the construction which secures the operation and result just noted possesses some advantages over ordinary pumps, inasmuch as the pump described is always primed and ready for lifting water at the very first stroke of the plunger, and furthermore that during the operation of pumping the supply is continuous and sufficient to meet the capacity of the inner working cylinder for discharging the same.

Changes in the form, proportion and the minor details of construction as embraced within the scope of the appended claim may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

A separable pump consisting essentially of an integrally formed outer cylinder having a rounded closed lower end and an integral side inlet neck near its upper open end, a centrally bored cylinder cap removably fitted into the upper open end of the outer cylinder and having the pump discharge pipe removably fitted into the top thereof, said cylinder cap being disposed above the side inlet neck to close in a top air space, a separate inner small working cylinder detachably connected at its upper end to the cylinder cap and extending to a point near the lower closed end of the outer cylinder, a valve removably fitted into the lower end of the inner cylinder, the plunger moving in said inner cylinder, and a separate inlet pipe removably connected to the side inlet neck of the outer cylinder, said inner and outer cylinders being relatively proportioned to each other to form a water pocket or space I, of a capacity which shall always exceed in volume the greatest amount of water drawn into the inner cylinder by the plunger, substantially as set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

CHARLES A. SELLON.

Witnesses:
J. H. SIGGERS,
E. G. SIGGERS.