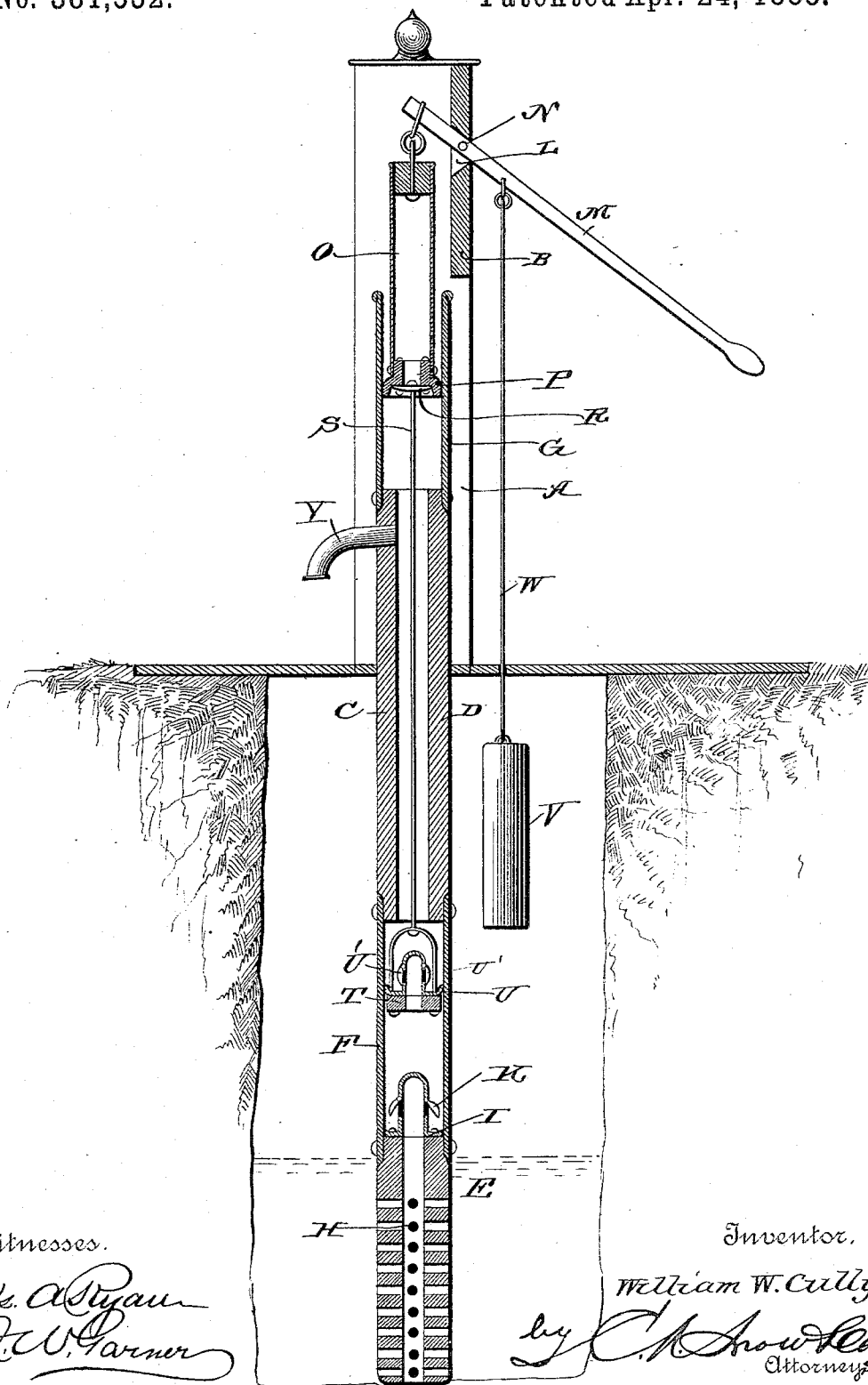


(No Model.)

W. W. CULLY.
PUMP.

No. 381,532.

Patented Apr. 24, 1888.



UNITED STATES PATENT OFFICE.

WILLIAM WALLACE CULLY, OF WILSON, KANSAS.

PUMP.

SPECIFICATION forming part of Letters Patent No. 381,532, dated April 24, 1888.

Application filed August 5, 1887. Serial No. 246,215. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM WALLACE CULLY, a citizen of the United States, residing at Wilson, in the county of Ellsworth and State of Kansas, have invented a new and useful Improvement in Pumps, of which the following is a specification.

My invention relates to an improvement in pumps; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claim.

The accompanying drawing is a vertical sectional view of a pump embodying my improvements.

A represents the vertical rectangular box which forms the pump-stock. The said box is open on its front side, and has its rear side partly closed by a board, B, arranged at the upper end of the box.

C represents the pump-barrel, comprising the upper and lower wooden sections, D and E, and the cylindrical sleeve F, connecting the ends of the upper and lower sections, and the similar sleeve, G, attached to the upper section and projecting upwardly in the stock. The lower section, E, rests against the bottom of the well and is submerged, and is provided with a series of inlet-openings, H. On the upper end of the said lower section is formed a valve-seat, I; and K represents movable valves arranged in the lower end of the sleeve F, and adapted to open and close the opening in the valve-seat.

In the board B is made a vertical opening, L, through which extends the inner end of a lever, M, fulcrumed on a pin, N, extending transversely through the bore. To the inner end of the lever M is attached a suspended cylindrical air-chamber, O, the lower end of which is provided with a packing, P, that fits snugly in the upper portion of the upper cylindrical sleeve, G. The lower end of the air-chamber is open, and is provided with a bridge, R, to which is attached the upper end of a pump-rod, S. The lower end of the said pump-rod extends downward through the bore of the section B, and is provided with a plunger, T, having a packing, U, that fits snugly against the side of the lower sleeve, F, and the said plunger is provided with outwardly-opening valves U'.

From the foregoing description it will be understood that the pump-barrel is immovable, and that the air-chamber is adapted to reciprocate in the upper portion of the pump-barrel and to impart reciprocating motion to the plunger when the pump-handle is operated.

V represents a weight, which is suspended from the outer portion of the pump-handle by a rod, W, the said weight serving as a counterpoise for the reciprocating air-chamber and the plunger.

The operation of my invention is as follows: On the upstroke of the plunger the valves U' are closed and the valve K is opened, thereby causing the plunger to create a partial vacuum in the lower sleeve, F, and suck a sufficient quantity of water to fill the said sleeve. On the ensuing downstroke of the plunger the valve K is closed and the valves U' in the plunger opened, and the water below the plunger in the sleeve F is forced upward through the central opening in the plunger and out through the valves U' into the upper portion of the pump-barrel. At the same time that the plunger descends the air-chamber descends also, thus compressing air above the column of water in the pump-barrel, and causing the water to be discharged through the spout Y in a continuous stream. From the foregoing it will be understood that the pump alternately lifts and forces the water at alternate strokes, and thereby the pump is specially adapted for use in deep wells.

The counterbalancing-weight is hung in the well, below the cover thereof, as shown, the suspending-rope passing through an opening in said cover. Thus the weight cannot swing and injure the person operating the lever-handle. The wooden section E acts as a strainer and prevents the lower valves from clogging. The weight of the air-chamber O would require too violent exertion in addition to that of the pump-rod plunger and water, when depressing the lever-handle, but for the counterbalancing-weight V, which makes the lever-handle M work easily. The counterbalance, therefore, is an important part of the pump.

Having thus described my invention, I claim—

The pump-barrel composed of the wooden

sections D E, the metallic cylindrical section
F, connecting them, and the metallic cylindrical
section G at the upper end of section D, in
combination with inlet-valves K at the lower
5 end of section F, the vertically-movable air-
chamber O, arranged in section G, and having
the packing at its lower open end, the rod S,
depending from the said air-chamber, extend-
ing through the section D, and the valved
10 plunger T, fitted snugly in the section F and

connected to the lower end of the rod S, sub-
stantially as described.

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

WILLIAM WALLACE CULLY.

Witnesses:

T. L. BALDWIN,
J. B. STURMAN.