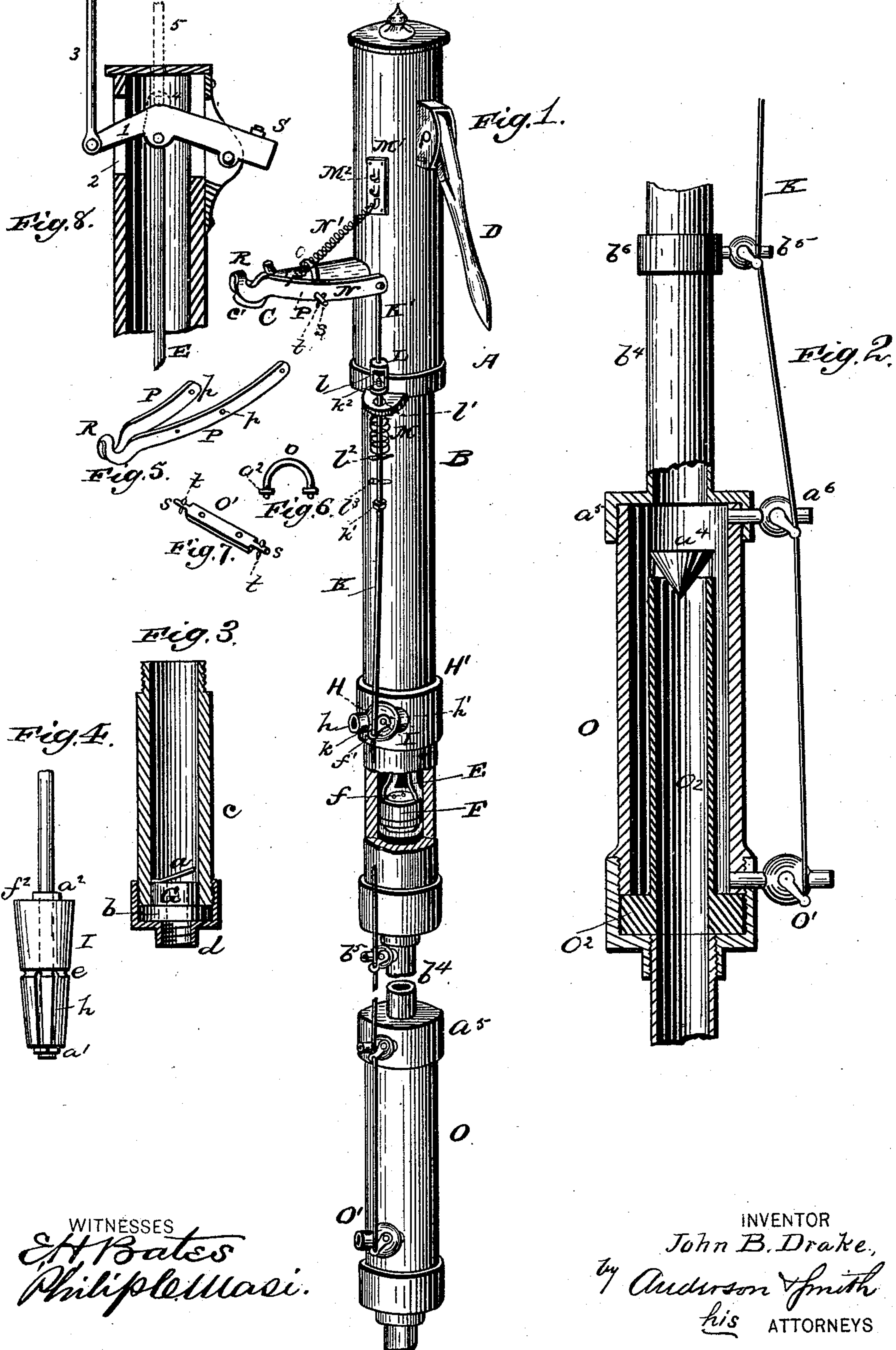


(No Model.)

J. B. DRAKE.  
PUMP.

Patented Aug. 7, 1883.

No. 282,864.





# UNITED STATES PATENT OFFICE.

JOHN B. DRAKE, OF GOSHEN, INDIANA.

## PUMP.

SPECIFICATION forming part of Letters Patent No. 282,864, dated August 7, 1883.

Application filed January 29, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN B. DRAKE, a citizen of the United States, resident at Goshen, in the county of Elkhart and State of Indiana, have invented certain new and useful Improvements in Pumps; and I do 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 of the drawings is a perspective view of my pump. Fig. 2 is a vertical sectional view of the sand-tube. Figs. 3, 4, 5, 6, 7, and 8 are detail views.

This invention has relation to pumps; and it consists in the construction and novel arrangement of devices, as will be hereinafter more fully described, and particularly pointed out in the claims appended.

Referring by letter to the accompanying drawings, A designates a pump having a tube, B, outlet C, handle D, connecting-rod E, plunger F, with valve *f*, and stationary valve G, consisting of valve proper, *a*, wooden seat *b*, cylinder *c*, and nut *d*.

H is an outlet-tube leading from the tube B somewhat above the water-line, having the passage *h* and transverse valve-seat *h'*, a band, H', being shrunk upon the tube B at this point to stay the drip-cock.

I is a valve fitted to the seat *h'*. This seat may be conical, and the valve, of the same shape, having a passage registering with passage *h* when the valve is in position.

K is a rod having its lower end, *k*, connected to an eye, *f'*. This rod has an angular portion, *k'*, for a wrench, and is screw-threaded at *k''*, and connected by a turn-buckle, L, to another rod, K', said rod K' having an enlarged end, *l*, on which the turn-buckle swivels, and is held in a guide-eye, *l'*, fastened to the pump.

M is a spring surrounding the rod K below the eye *l'*, having its upper end bearing against the lower face of said eye *l'*, the lower end bearing against an upper pin, *l''*, in the rod K when it is desired to let the water stand in the tube B, a second pin, *l'''*, being provided a short distance below the first one to support

the spring M when pin *l''* has been withdrawn to open the drip-cock, in a manner hereinafter explained. At its upper end the rod K' is made fast to a lever, N, which is pivoted to the pump-spout. This lever is composed of two arms, P P, pivoted at *p p*, extending forward and converging over the end of the outlet C in an upturned lip, R, just above the mouth *c'* of the outlet. The journals for the lever N are secured to the under side of the pump-spout by means of a clip or band of iron, *o*, bent around over the top of the spout, and having each end passed down the perforations in the bar *o'*, and provided with tightening-nuts *o''*. The journals *s* are perforated for the reception of keys *t* to hold the lever in place thereon. This fastening can be applied to spouts of varying sizes, and can be easily and quickly attached.

M' designates a thin metal plate punched to form hooks M'', and fastened to the pump, over the pump-spout, by rivets or otherwise.

N' is a spiral spring fastened at its lower end to the lever N, as shown, its upper end being adapted to engage either of the hooks M'' on the plate M' to lift the lever N to place when it has been relieved of the weight of the bucket.

O designates the sand-cylinder, of metal, at the lower end of the tubing, having the sand-cock O', similar in construction to the drip-cock hereinbefore described; and O'' is the wooden seat and sand-tube on the interior of the same.

This tube O'' may be provided with a check-valve, or a funnel-shaped piece, *a'*, may be provided at the mouth or upper end of the sand-tube O'' to cause the water to fall over between the metal cylinder and the wooden sand-tube, and thus more readily cause the quicksand to fall back. The funnel-shaped piece *a'* is not, however, essential, and may be used or not, as may be desired. A band, *a''*, is shrunk around the top of the sand-cylinder to provide a stay for an air-cock, *a'''*. A gas-tube, *b'*, is employed to connect the sand-cylinder with the pump, and a second air-cock is attached to this tube at *b''*, a band, *b'''*, being shrunk on said tube to stay said air-cock. These air-cocks are similar in construction to the drip-cock and the sand-cock, and are connected by an extension of the drip-rod K K' to each other and to the sand-cock, so that when the sand-



cock and drip-cock are open the air-cocks will be also open, to admit air to the tubing. When all are open the sand will be driven out through the weight of the water above it in the tube, and the water above the drip-cock will be driven out through the outlet or drip-cock H.

It is designed to operate this pump either by hand or through the agency of a windmill. The first course needs no explanation. Where the windmill is employed, however, certain details of construction are resorted to that require explanation. If the windmill alone is to be employed, it is preferable to remove the handle entirely; but this is not absolutely necessary. A lever, 1, is pivoted in a slot, 2, near the top of the pump, and its inner end is pivoted to the top of the plunger-rod, and its outer end is pivoted to a shaft, 3, which is in turn connected to the crank-shaft of the windmill. Where the handle and the windmill are to be used interchangeably at will, a metal socket, S, is provided, between the lugs of which the handle D is fulcrumed. The inner end of the handle is pivoted to the plunger-rod, and is also connected by pivoted lugs 4 to the lower end of the shaft 5, which passes down into the top of the pump, and is connected at its upper end in any suitable manner to the shaft of the windmill. In this latter arrangement the shaft 5 may be disconnected and the handle alone used, or both may be used at the same time, as circumstances may require. This construction is not laid claim to in this application; but the right is herein reserved to make a future separate application therefor.

In use, the bucket is hung upon lip R, and its weight, overcoming the upward pressure of the springs, one or both of which may be used, forces the valves down and closes them. This prevents the escape of the water and sand from the tube, and water can be pumped, as usual. As soon as the bucket is removed the valves are opened by the upward pressure of the springs upon the lever N and drip-rod, and the water and sand can escape through their respective cocks, thereby preventing the freezing of the water in the tube, and permitting the quicksand to escape at the same time, the arrangement being automatic. When the lower pin,  $\ell^2$ , is permitted to form the bearing for the spring M, by withdrawing the pin  $\ell^2$  from the rod K the tension of the spring will be lessened and the lever N will be permitted to drop down, as when the bucket is used, and the pump may be then used as an ordinary lifting-pump. When, however, the upper

pin,  $\ell^2$ , forms the bearing for said spring, the pump will operate, as before described.

Although I have shown and described two air-cocks—one on the gas-tube—this last one is only necessary in deep wells. In shallow wells the one at the top of the sand-cylinder is all that is needed.

I have shown and described the drip-cock, sand-cock, and air-cocks as operated by the drip-rod and its extensions; but I desire to operate, and preferably do operate, the sand and air cock or air-cocks, as the case may be, by an independent rod extending up through the platform.

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

1. The pump-tube B, having the band H', shrunk thereon at about the water-line of the well, and provided with a drip cock or tube, H, substantially as specified.

2. The combination, with the hooked plate and the lever N, pivoted to the pump-spout, of the spiral spring connecting said lever with the hook-plate, and the lifting-rod connecting the lever and the drip-cock, substantially as specified.

3. The combination, with the rods K K' and turn-buckle, of the guide-eye  $\ell^1$ , secured to the pump-stock, spring M, pins  $\ell^2$   $\ell^2$ , the lever N, and the drip-cock H, substantially as specified.

4. The combination, with the rods K and K' and their extensions, of the compression-springs, the lever N, pivoted to the pump-spout, and the air-cocks and the drip and sand cocks, substantially as specified.

5. The combination, with the pump-stock, of the gas tubing, the sand-cylinder, their respective drip, air, and sand cocks, and mechanism for operating them, substantially as specified.

6. The sand-cylinder having the internal sand-tube provided with the funnel-shaped piece over its upper end, substantially as specified.

7. The combination, with the pump-spout and lever N, of the clip and bar having the adjusting-nuts and securing-keys, substantially as specified.

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

JOHN B. DRAKE.

Witnesses:

ALMON M. PARSONS,  
BYRON B. ROCKWELL.