

J. F. CARLL.
Pumps.

No. 138,477.

Patented May 6, 1873.

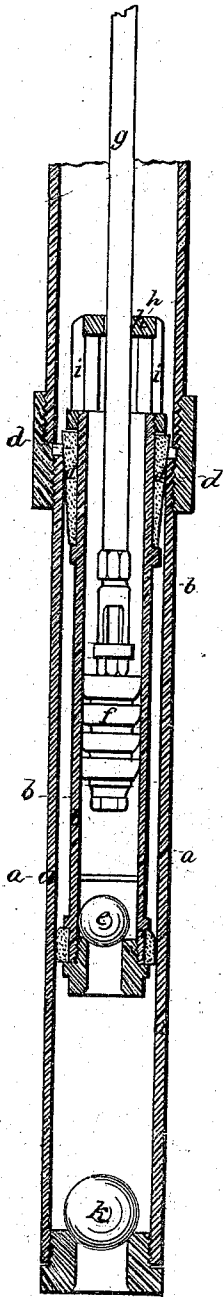


Fig. 1.

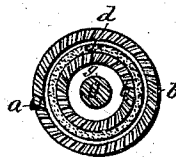


Fig. 2.

J. N. Mills
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} Witnesses.

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UNITED STATES PATENT OFFICE.

JOHN F. CARLL, OF PLEASANTVILLE, PENNSYLVANIA.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. 138,477, dated May 6, 1873; application filed February 14, 1873.

To all whom it may concern:

Be it known that I, JOHN F. CARLL, of Pleasantville, in the county of Venango and State of Pennsylvania, have invented certain Improvements in Pumps, of which the following is a specification:

The object of my invention is to so arrange pumps used in Artesian wells that the wearing portion or working-barrel of a pump can be easily introduced into an old well, or be drawn out for renewal or repairs, without requiring the withdrawal of the entire line of tubing; and that it may thus be introduced or drawn out with the pump or sucker-rods without the insertion of other or special device for doing it.

Figure 1 represents a vertical section, and Fig. 2 a transverse section, of a pump embodying my invention.

a is the lower portion of the pump-tube. *b* is the working-barrel, fitting loosely within the tube *a*, and having a leather packing at *c* and *d*. The lower packing *c* is made to fit closely within the tube *a*, to steady the barrel when in place. The upper packing *d* is tapered slightly to fit into and rest upon the top of the old working-barrel, or on a surface of corresponding taper fixed at any point within the tube *a*, where the pump is required to work. Within the barrel *b* is a foot-valve, *e*, and the working valve or piston *f*. The latter may be the ordinary cup-valve, or of any suitable pattern. The upper end of the barrel *b* is arranged to embrace the pump-rod *g*, at *h*, for the purpose of guiding the piston and changing the working-barrel, having openings *i* around the rod, as shown.

It will be seen that the barrel *b*, valves *e* and *f*, and pump-rod *g*, form a complete pump in themselves, independent of the tube *a*. The latter is provided with a foot-valve, *k*, which prevents the escape of fluid from the tube when the pump is drawn out.

In using the device, the tube *a* being first placed in position within the well, (or, in case of an old well, it being already in place,) the barrel *b* with its valves is attached to the pump-rod *g*, and lowered within the tube *a* until the packing *d* fits closely into or upon its place in the tube, as shown, when the whole is ready for use.

In case the barrel becomes worn, or any trouble occurs in working the pump, the whole device, including the barrel *b* and its valves, can be withdrawn from the well by drawing out the pump-rod, without disturbing the tube *a*.

The advantages claimed for this arrangement are: that it can be easily introduced into any well now in operation, as a substitute for the ordinary working-barrel, or for a worn out or defective one, without necessitating the withdrawal of the tubing; being held in place by static pressure, no lock or screw joints are required; when the pump is withdrawn for any reason, the lower foot-valve *k* prevents the fluid in the tube from forcing back into the well, and thereby injuring it by agitating and forcing the dirt and sediment into the rock crevices; and any-sized pump and working-barrel can be introduced to suit the capacity of the well and the power available for pumping.

I claim as my invention—

The described arrangement and combination of the barrel *b*, with its tapering packing *d* and valves *e* and *f*, the whole attached to the pump-rod and held in position in the tube *a* by static pressure, and operating substantially in the manner and for the purposes set forth.

JOHN F. CARLL.

Witnesses:

J. C. GOAL,
M. C. GOSS.