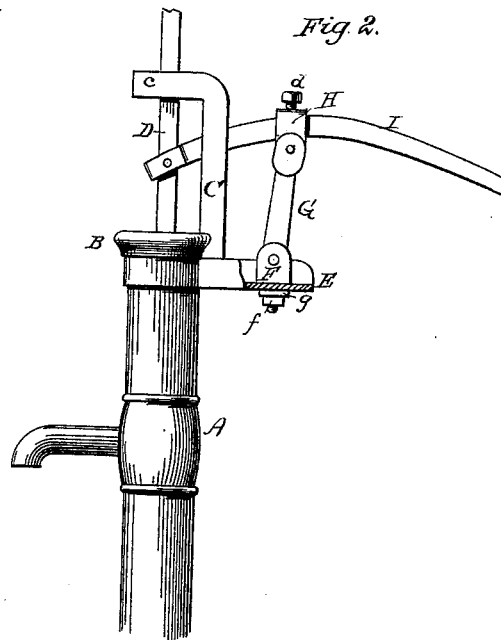
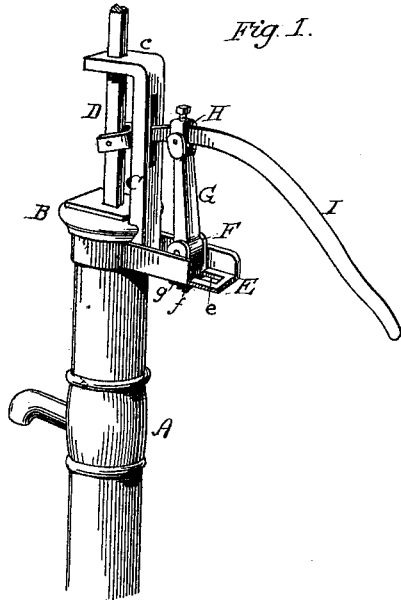


A. LUCASSE & J. A. NEWELL.  
Pump.

No. 202,659.

Patented April 23, 1878.



WITNESSES:  
Clarence Poole  
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Geo. W. Alger & Co. attys

# UNITED STATES PATENT OFFICE

ARY LUCASSE AND JOHN A. NEWELL, OF KALAMAZOO, MICHIGAN.

## IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **202,659**, dated April 23, 1878; application filed February 27, 1878.

*To all whom it may concern:*

Be it known that we, ARY LUCASSE and JOHN A. NEWELL, of Kalamazoo, in the county of Kalamazoo and State of Michigan, have invented a new and useful Improvement in Pumps; and we do declare that the following is a true and accurate description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, and being a part of this specification, in which—

Figure 1 is a perspective view of our improvement arranged to give a short stroke to the pump-rod. Fig. 2 is a side elevation, showing our improvement arranged to give a long stroke to the pump-rod.

Like letters of reference refer to like parts in each figure.

The nature of our invention relates to an improvement in the construction of pumps, whereby the stroke of the pump-rod may be lengthened or shortened; and it consists in peculiar construction and arrangement of the various parts, as more fully hereinafter set forth.

In the drawing, A represents a pump-case of the usual construction, provided with a removable cap or head, B. Rising from one side of this head B is a standard, C, provided with a head or arm, *e*, through which the upper end of the pump-rod D passes, and is guided in its reciprocatory motion. Secured to the head B is a flanged bracket, E, in the bottom of which is cut a slot, *e*.

F is an adjustable clip, adjusted to any desired position by means of a bolt, *f*, which projects downwardly through the slot *e*, where

it receives a nut, *g*, to secure it to place. Pivoted to this clip F is the fulcrum-rod G, having pivoted to its upper end a collar, H, through which is sleeved the pump-handle I, its forked end being in turn pivoted to the pump-rod. A set-screw, *d*, threaded in the collar H, secures the latter in any desired position upon the pump-handle.

In order to lengthen the stroke of the pump-rod, the fulcrum-rod should be adjusted so as to lengthen the distance between the pump-rod and the fulcrum, which is the point where the collar is secured to the handle; to shorten the stroke this distance is diminished.

By this construction, a true perpendicular reciprocating motion is given the pump-rod, and the unequal wearing off on the pump-bucket, together with the consequent binding, is avoided.

The operation of our improvement is so simple that a further description thereof is deemed unnecessary.

What we claim as our invention is—

1. In pumps, the adjustable fulcrum-rod G, to lengthen or shorten the stroke of the pump-rod, arranged to operate substantially in the manner and for the purposes set forth.

2. In pumps, the cap B, standard C, fulcrum-rod G, adjustable by means of the clip E and collar H, in combination with the pump-rod D and handle I, substantially as and for the purpose specified.

ARY LUCASSE.  
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Witnesses:

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