P. H. GREEN.

Pump.

No. 210,935. Patented Dec. 17, 1878.

Fig 1

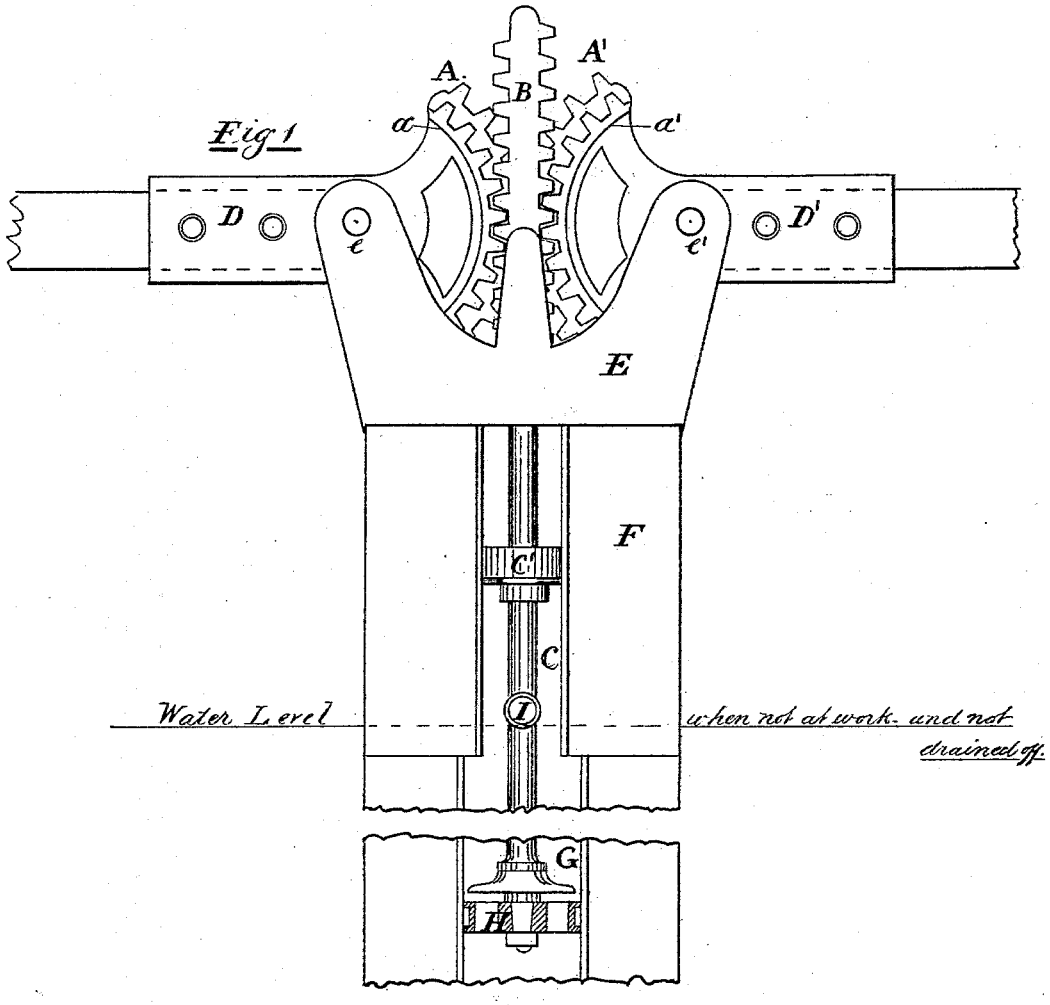
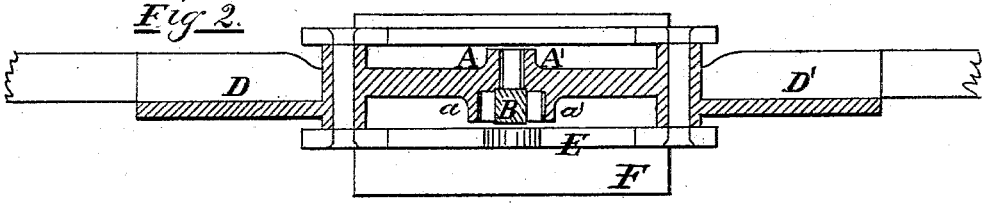


Fig 2.



Witnesses

C. MacKenzie

Thos Woodbridge

Inventor:

Peter Hunt Green

per William Gill

Atty

UNITED STATES PATENT OFFICE.

PETER HUNT GREEN, OF HESPELER, ONTARIO, CANADA, ASSIGNOR TO JOHN WALKER GREEN, OF SAME PLACE.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **210,935**, dated December 17, 1878; application filed December 13, 1877.

To all whom it may concern:

Be it known that I, PETER HUNT GREEN, of the village of Hespeler, in the county of Waterloo, in the Province of Ontario, Canada, have invented certain new and useful Improvements on Pumps; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention relates to those pumps which are generally used for the raising of water from wells, and which are operated either by hand or otherwise, and can be applied to any ordinary pump.

It consists in the manner of construction of the working gear for operating the pump, which I call the "compound pump-handle," and which I shall now proceed to describe.

The upper portion of the pump-rod is of a square form, having teeth on two of its sides and opposite to each other, and constituting, when so formed, a double rack, into each of which racks I introduce a segment of a circle having teeth on the periphery thereof, and corresponding with those teeth on the pump-rod, and which shall mesh freely into each other and work in a manner similar to the common rack and pinion in ordinary mill-work.

Each of these segments is constructed with a handle, and pivoted in a bracket common to both, so that when the handles are raised and depressed at their outer ends they will, by means of the segments and racks, raise and depress the pump-rod.

Attached to each of these segments, which mesh into the racks on the pump-rod, is a larger segment, having also teeth on its periphery, the pitch-line of which teeth is in a direct line with the center line of the pump-rod, and they consequently mesh into each other, so that when motion is given to one handle it will communicate the same to the other handle, and the pump-rod will be operated vertically without rubbing, as when only one rack is used; and being acted upon equally on each side, a parallel and frictionless motion is produced thereby.

In the accompanying drawings the same letters of reference indicate the same parts in all the views and in this specification.

Figure 1 is an elevation, showing the compound pump-handle, comprising the segments A A′ and *a a′*, with the handles D D′, pivoted in the bracket E, showing also the pump-rod B, with rack on each side, and meshing into the smaller segments, *a a′*; showing also the cylinder C in section, with piston C′ and delivery-pipe I; showing also in section the cylinder G of any ordinary pump to which my auxiliary cylinder C is attached, and the bucket H, through which the water passes in the downstroke of the pump, and the main trunk F. Fig. 2 is a plan or ground view, showing, partly in section, the segments A A′ and *a a′*, the pump-rod B, handles D D′, bracket E, and trunk F.

Referring again to Fig. 1, it will be seen that on motion being given to either one or both of the handles D D′, a vertical reciprocating motion will be given to the pump, and in the upstroke of the pump water will be forced through the delivery-pipe I from the action of the bucket H in cylinder G, and the auxiliary cylinder C will consequently be filled with water under a pressure equal to the force at which the water issues from the delivery-pipe I, which will also be expelled by the downstroke of the piston C′ at the same force as by the upward action of the bucket H.

A similar arrangement of segments A A′ and *a a′* and levers D D′ with slotted seats at *e e′* and catch-pins sliding through the bracket E, with corresponding pin-holes in the rod B, can be used advantageously for a lifting-jack.

Having now described my invention, I claim—

The compound pump-handle, as constructed, comprising two toothed segments, A A′, meshing into each other, and operated by one or two handles, D D′, as may be required, each of the segments A A′ having a smaller toothed segment, *a a′*, cast on its side, the teeth of which smaller segments *a a′* meshing into corresponding teeth on the sides of the pump-rod B, by which means a parallel and frictionless motion is produced, operating substantially as set forth.

PETER HUNT GREEN.

Witnesses:

JOHN A. ROBINSON,

JOHN W. GREEN.