I. H. PALMER.

PUMP.

No. 178,324. Patented June 6, 1876.

Fig. 1.

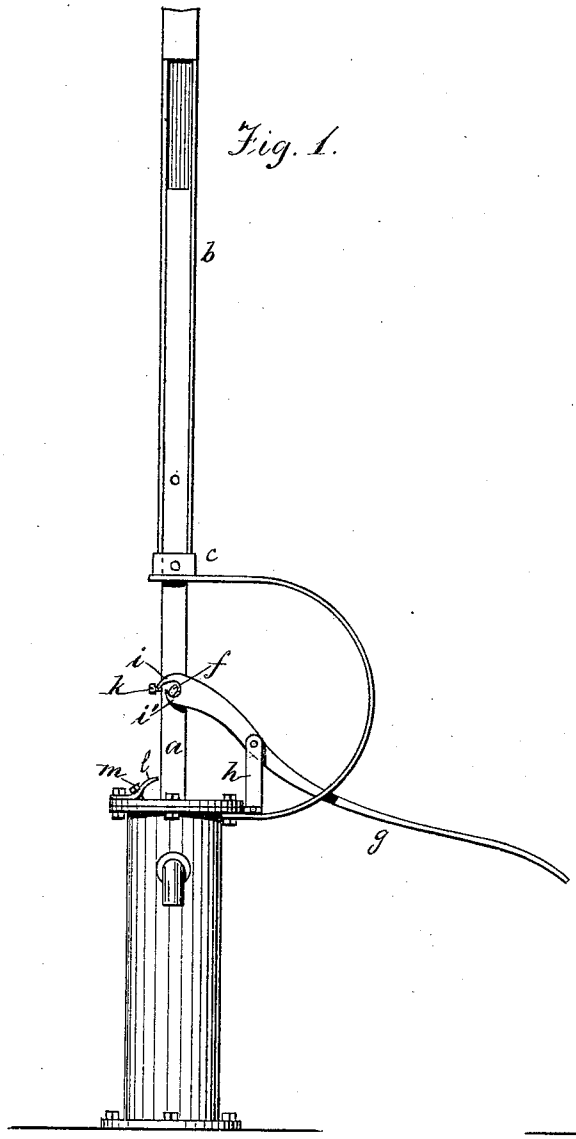
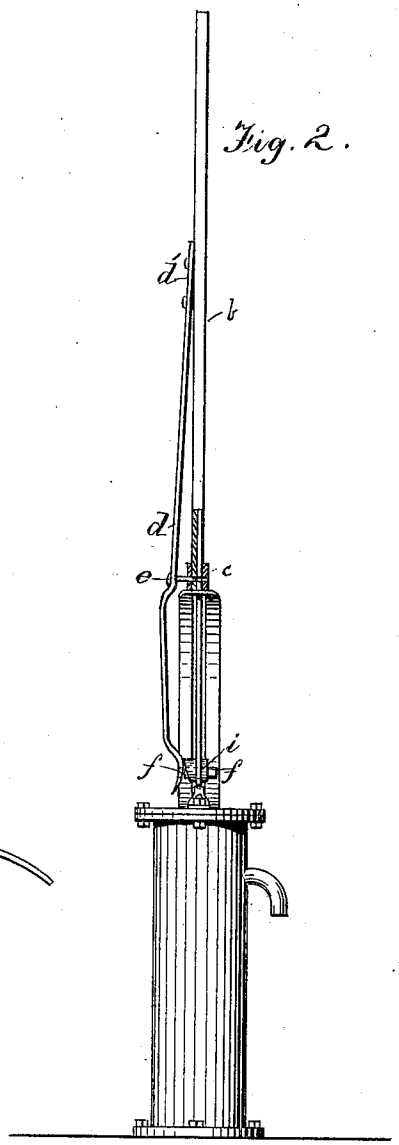


Fig. 2.



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UNITED STATES PATENT OFFICE.

ISAAC H. PALMER, OF LODI, WISCONSIN.

IMPROVEMENT IN PUMPS.

Specification forming part of Letters Patent No. **178,324**, dated June 6, 1876; application filed April 28, 1876.

To all whom it may concern:

Be it known that I, ISAAC H. PALMER, of Lodi, Columbia county, Wisconsin, have invented certain new and useful Improvements in Self-Adjusting Pumps, operating in connection with windmills, of which the following is a full, clear, and exact description, reference being had to the drawings hereunto annexed.

My invention is an improvement upon the devices for which Letters Patent were granted me on the 23d day of June, 1874, and numbered 152,407, and relates particularly to the method of connecting the pump-handle to the pump-shaft, so that when the handle is applied to said shaft, the shaft is detached from the pitman of the windmill, and the connection with the pitman restored upon the withdrawal of the handle, the object being to operate the pump by either one or the other, as occasion requires.

Referring to the drawings, Figure 1 is an elevation of the pump and pitman of the mill, with the handle connected to the pump-shaft. Fig. 2 shows the spring-connection between pitman and pump-shaft, and the end of the pump-handle connected to said shaft.

As shown in Fig. 1, *a* is the pump-shaft, and *b* the pitman of the windmill. The former is made to move upon or within the latter, and the two are held together by the clasp or band *c*, which, in this instance, is fixed to the lower end of the pitman. A spring-connection, *d*, is riveted to the pitman *d'*, and provided with a pin at *e*, the construction being such that the spring-bar, when it descends, forces the pin into a hole in the upper part of the pump-shaft, thereby securely connecting the pitman to the shaft, and allowing the windmill to operate the pump. Upon the pump-shaft at *f* is a pin projecting on each side, and, in this instance, inclined, as shown. With this the fingered end of the pump-handle connects, when the pump is to be operated by hand.

The handle *g* is formed as shown in Fig. 1. It is pivoted upon a bar, *h*, which has a rocking motion on its pivot below, to allow for the necessary longitudinal motion of the handle, by reason of the shaft always moving in the same vertical line. The end which grasps the pin is made with fingers *i i'*, the upper longer, and curving down to overlap the upturned end of the lower, leaving only a space between for the pin in the shaft to pass when turned with its edge to the passage.

The opposite side of the handle may be of the same construction, except that it is formed of sufficient thickness to throw off the spring-bar *d*, and draw the pin out of connection with the pump-shaft.

The pin *f* is held in place by a set-screw, *k*, and this set-screw serves the further purpose, in connection with the spring-stop *l*, to limit the downward motion of the shaft.

This spring-stop is made in the form shown, or any convenient shape for the purpose. It is made elastic, to compensate for any irregularity of movement, or want of perfect adaptation in the parts, and may receive further adjustment by a set-screw, *m*.

The spring-bar has a hole at the lower end large enough to admit the pin of the pump-shaft, for the purpose of allowing the bar to approach the shaft and make the connection with the pin *e*, as described, and requiring less width of projection on the handle. The spring-bar is bent, as shown, to give room for the play of the handle.

The operation of my improvement will be manifest from the description of the parts. In order to connect the handle to the spring-stop, the shaft being down, the handle is thrust forward, so as to pass the pin through the opening between the fingers. This advance of the handle presses off the spring-bar *d*, and draws the pin *e* out of connection with the shaft of the pump. As soon as this shaft is raised, the pin no longer registers with the hole, and the shaft is left free to be operated by the handle.

The handle, in operation, need not be elevated sufficiently to withdraw it from the pin on the shaft, except when such withdrawal is desirable in order to throw the windmill into connection therewith.

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

1. The handle, pivoted as described, and provided with the rigid fingers *i* and *i'*, as and for the purpose set forth.

2. The spring-bar connecting the pitman to the pump-shaft, in combination with the pin and enlargement on the handle, as set forth.

3. The set-screw on the shaft, operating as described, in connection with the spring-stop on the pump, as set forth.

ISAAC H. PALMER.

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