

I. H. PALMER.

Self-Adjusting Pumps for Wind-Mills.

No. 152,407.

Patented June 23, 1874.

Fig. 1.

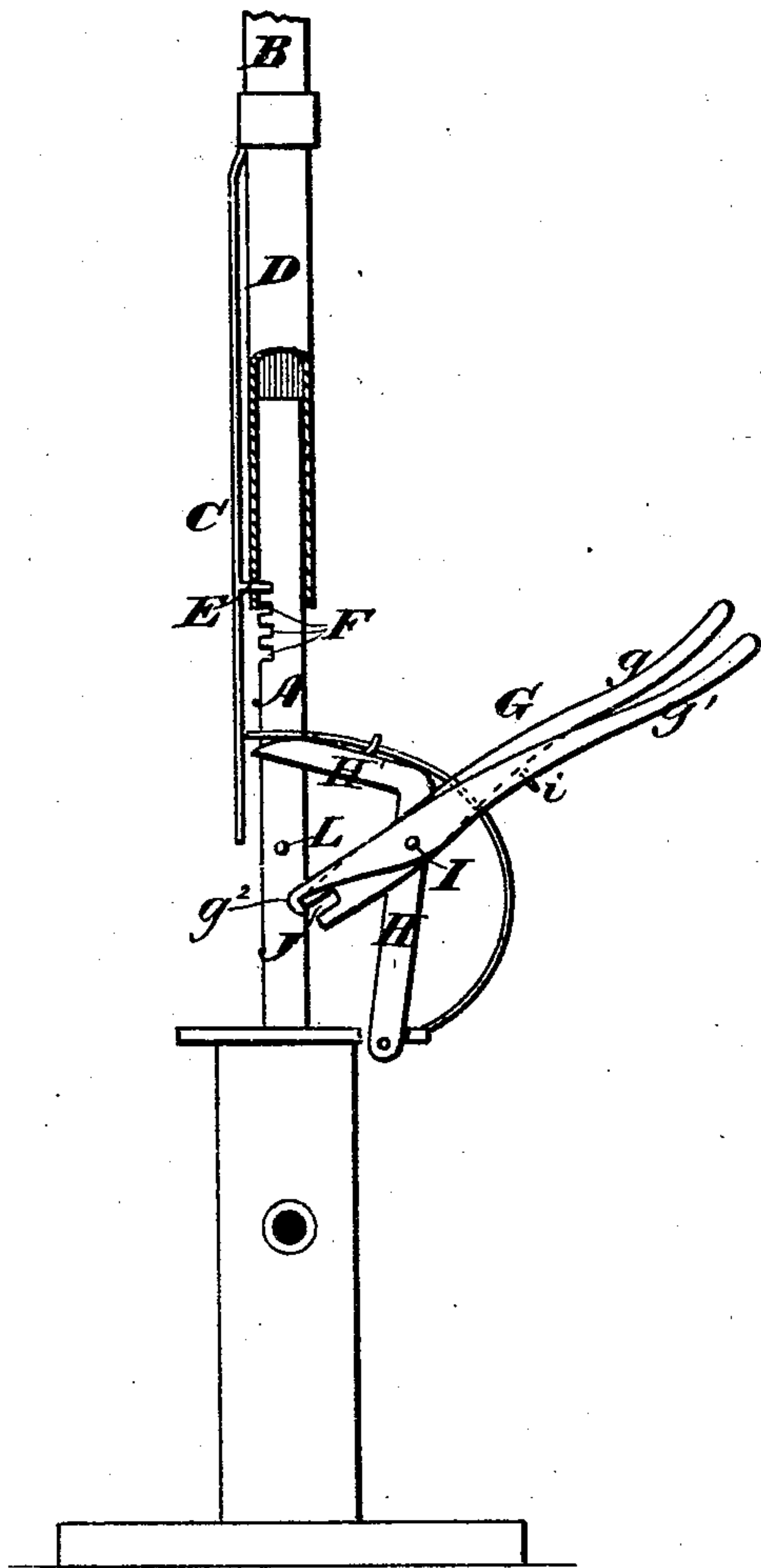
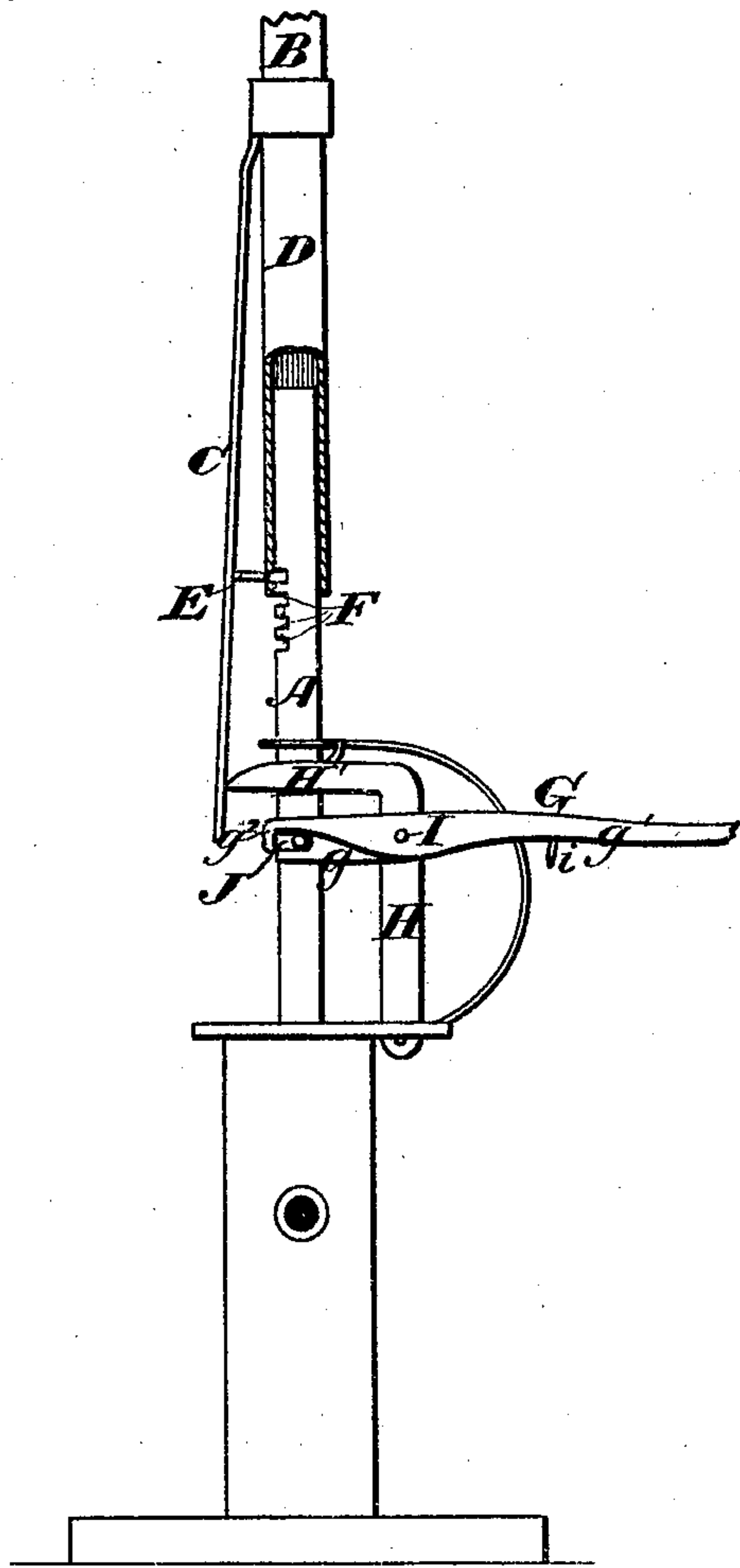


Fig. 2.



Witnesses.

J. T. Brown
W. H. Ellsworth

Inventor
I. H. Palmer
by his Attys.
W. H. Ellsworth

UNITED STATES PATENT OFFICE.

ISAAC H. PALMER, OF LODI, WISCONSIN.

IMPROVEMENT IN SELF-ADJUSTING PUMPS FOR WINDMILLS.

Specification forming part of Letters Patent No. 152,407, dated June 23, 1874; application filed April 30, 1874.

To all whom it may concern:

Be it known that I, ISAAC H. PALMER, of Lodi, in the county of Columbia and State of Wisconsin, have invented a new and Improved Self-Adjusting-Pump for Windmills; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawings forming part of this specification, in which—

Figure 1 is a side elevation of my invention, showing the hand-lever or pump-brake disconnected from the pump-plunger, and the latter in connection with the connecting-rod or pitman of a windmill; and Fig. 2 a similar view showing the hand-lever or brake applied to the plunger, and the windmill-pitman disconnected.

Similar letters of reference in the accompanying drawings denote the same parts.

This invention relates to that class of pumps operated by windmill or other power, in which the plunger is adapted to be disconnected from the means used for applying such power for the purpose of working the pump by hand. It is often necessary to operate a windmill-pump when there is no wind, or not enough to give the requisite motion to the plunger, and to this end it is usual to withdraw the pin connecting the pump-plunger and pitman or shaft of the windmill, adjust a hand-lever or pump-brake to the plunger by inserting a pin through both, and after pumping the desired quantity of water by hand, to readjust the windmill-shaft. The windmill-shaft is frequently moved by a light breeze not sufficient to operate the pump, thus rendering this operation difficult to perform, as the plunger and shaft can only be coupled by the pin when their pin-holes register. My invention has for its object to provide means for automatically disconnecting the pump-plunger from the windmill-shaft when the hand lever or brake is applied, and readjusting the shaft when said brake is removed. To this end it consists mainly in a spring-catch on the windmill-shaft, adapted to engage with notches or recesses on the pump-plunger, in combination with a swinging fulcrum to which the hand-lever or brake is pivoted, said fulcrum being adapted, when swung inward toward the plunger, to engage the brake with a suitable stud or pin

on the plunger, and at the same time to press against the spring-catch and force the latter away from the plunger, thereby disconnecting the pump and windmill, the spring being held in this position as long as the hand-lever and plunger are connected, and returning automatically to engage with the plunger when the hand-lever is removed. It consists also in the peculiar construction of the hand-lever, all of which I will now proceed to describe.

In the drawings, A represents the pump-plunger, and B the vertical shaft or pitman of the windmill, the latter having a vertical spring, C, and a hollow sleeve or socket, D, on its lower end, adapted to receive the upper end of the plunger A. The spring C is provided with a tooth or catch, E, projecting inward, and adapted to pass through a slot in the lower end of socket D, and engage with one of a series of recesses, F, in the plunger A, as shown in Fig. 1, the spring being held in this position by its own elasticity, the shaft and plunger being thus connected and adapted to reciprocate together when the windmill is in operation. G represents a hand-lever composed of two parts, g g^1 , pivoted to each other and to a swinging standard, H, by a bolt or rivet, I. The part g of the lever G is provided with a slot or recess, J, in its inner end, while the part g^1 is beveled on its lower side, and provided with a toe or projection, g^2 , which closes the end of the slot J when in the position shown in Fig. 2. The standard H is located on the opposite side of the plunger from the spring C, and is pivoted at its lower end to the side of the pump, and has an arm, H', at its upper end, which projects toward the spring C, said arm being preferably bifurcated, and inclosing the plunger A. When the standard H and lever G are swung back, as shown in Fig. 1, the shaft B and plunger A are adapted to work together. In case, however, the windmill is at rest, or moving so slightly as to be inoperative, and it is desirable to pump a small quantity of water, the part g of lever G is grasped by the operator and pushed toward the plunger until its slot J engages with a stud, L, on the plunger. The part g^1 is then turned so as to cause its beveled under surface to bear on the stud L, its toe g^2 closing the end of the recess, as shown

in Fig. 2. When the lever and standard are swung inward, as above mentioned, the arm H' comes in contact with the spring C and forces the latter outward, so that its tooth or catch E becomes disengaged from the plunger A, thereby adapting the plunger to be operated solely by the lever G, the operation that connects the pump-plunger and hand-lever disconnecting the plunger and windmill-shaft. The standard and lever being withdrawn, as shown in Fig. 1, the spring returns to its former position by its own elasticity, and the shaft and plunger are again connected. The part g of the lever G may be bifurcated, so as to inclose the plunger, and has a stop, i , which restricts the downward movement of the part g^1 . The toe of the latter prevents the lever from being disengaged from the plunger when in operation.

I claim as my invention—

1. The shaft B, having the socket D and spring C, with its tooth E, in combination with the pump-plunger A, having the recesses F, and the angular pivoted standard H of the lever G, all arranged and operated substantially as and for the purpose specified.

2. A hand-lever for pumps, pivoted to a swinging standard, and adapted to be engaged with or disconnected from the pump-plunger, by swinging said standard, substantially as described.

3. The lever G, composed of the pivoted parts g g^1 , having the recess J and toe g^2 , in combination with the swinging standard H, substantially as described, for the purpose specified.

ISAAC H. PALMER.

Witnesses:

J. M. BARTHOLOMEW,
MARVIN COSSETT.