

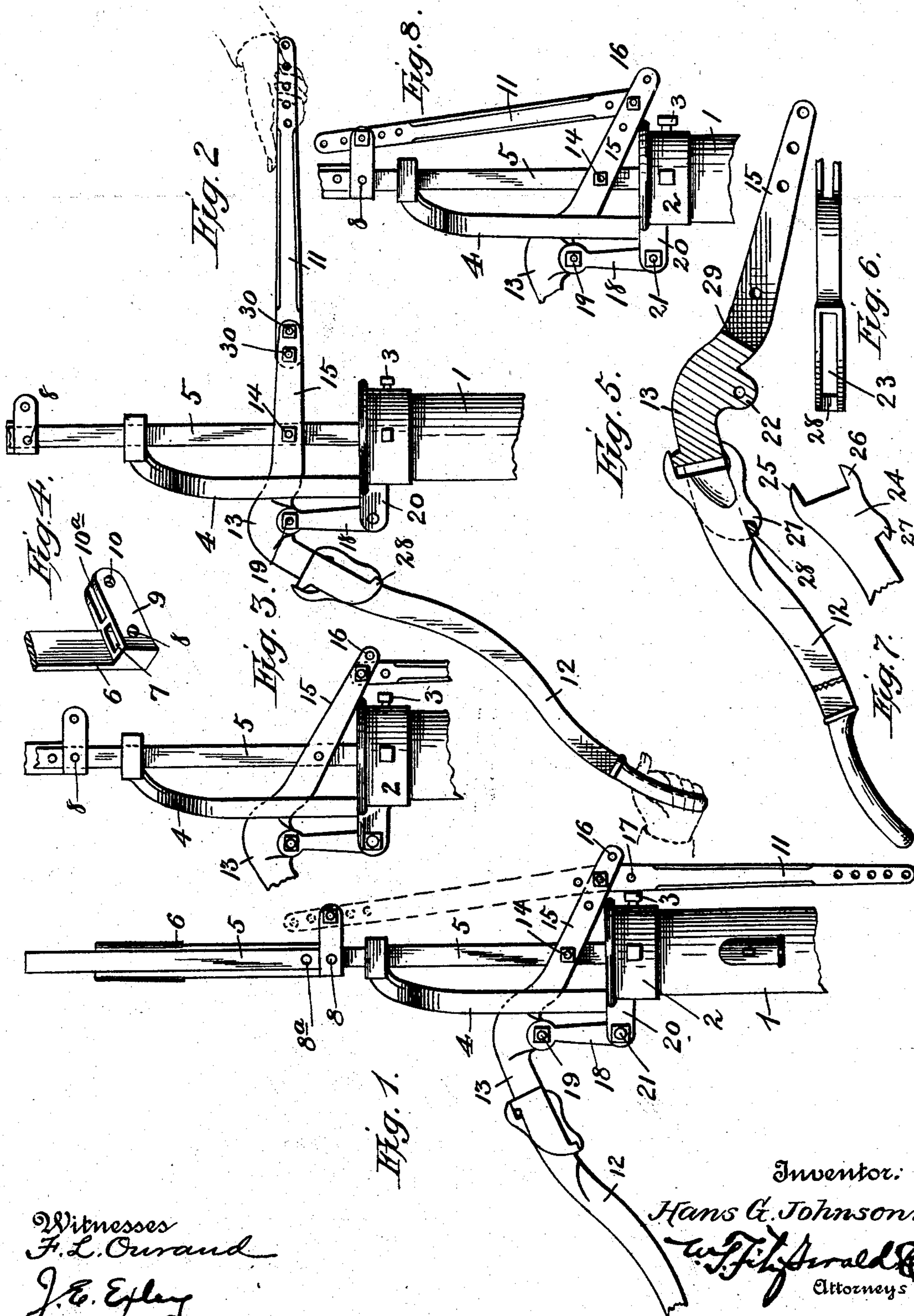
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Patented July 31, 1900.

H. G. JOHNSON.
PUMP OPERATING DEVICE.

(Application filed Apr. 17, 1900.)

(No Model.)



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UNITED STATES PATENT OFFICE.

HANS G. JOHNSON, OF WAUKON, IOWA.

PUMP-OPERATING DEVICE.

SPECIFICATION forming part of Letters Patent No. 654,643, dated July 31, 1900.

Application filed April 17, 1900. Serial No. 13,225. (No model.)

To all whom it may concern:

Be it known that I, HANS G. JOHNSON, a citizen of the United States, residing at Waukon, in the county of Allamakee and State of Iowa, have invented certain new and useful Improvements in Pump-Operating Devices; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to certain new and useful improvements in pumps, and more particularly to certain devices which will adapt a pump of the usual or any preferred construction for use in connection with a windmill or other motor or a manually-controlled lever.

The object of my invention, among others, is to make it possible to operate the pump by means of the windmill even when there is but little wind.

A further object, among others, is to enable the pump to be easily disconnected from the windmill or other motive power and operate it by the usual handle.

Other objects and advantages will be made fully apparent in the following specification considered in connection with the accompanying drawings, of which—

Figure 1 illustrates my improved pump ready to be connected to the pumping rod or piston of a windmill and also ready for operation by means of the handle. Fig. 2 illustrates the several devices so adjusted that the pump may be operated manually by the two handles. Fig. 3 illustrates the several devices so adjusted that the actuating rod or piston of the windmill is disconnected directly from the pump-rod and the pump left ready to be operated by the handle when the bolt 14 is entered in the position shown in Fig. 2. Fig. 4 is an enlarged detail showing the device employed to connect the piston directly or indirectly to the pump-rod. Figs. 5, 6, and 7 illustrate in detail the means employed to detachably connect the handle to the pump. Fig. 8 illustrates my pump-operating devices so adjusted that the pump-rod will be controlled by leverage.

In order to conveniently designate the several parts of my invention and their coöper-

ating accessories, numerals will be employed, of which 1 indicates a pump of the usual or any preferred construction, provided, as is common, at its upper end with the collar 2, held in place by the set-screw 3 and having the standard 4, the latter being designed to reliably hold the upper end of the pumping-rod 5 against lateral movement.

To the lower end of the piston I secure in any preferred way the terminal or union 6, which is provided with a suitable opening or socket 7, adapted to loosely receive the upper end of the rod 5, and since the upper end of the rod 5 is provided with suitable apertures the union 6 may be readily connected to said rod by extending a bolt through the aperture 8, formed in said union and designed to register with the aperture 8^a in the rod 5. The terminal or union 6 is provided with the right-angled extension 9, having an aperture 10 in its free end, and also provided with a recess 10^a, adapted to receive the upper end of the link 11.

The handle proper, 12, is connected to the lever-section 13, which latter is placed in pivotal union with the rod 5 by means of the bolt 14, it being understood that the free end 15 of the lever is formed to extend beyond the rod 5 and is provided with a plurality of apertures 16, designed to register with corresponding apertures 17, formed in the end of the link 11, it being understood that said parts may be adjustably secured together by passing a bolt through any of said apertures, according to the result desired. The lever 13 is held in its operative position by means of the fulcrum-link 18, pivotally connected at its upper end to said lever by the bolt 19, while the lower end of said link is connected to the arm 20, formed upon the collar 2, it being understood that said arm may be of any desired length and provided with a plurality of apertures, by means of which the fulcrum-link 18 may be readily secured in the desired position by means of the bolt 21, as is obvious. The handle proper, 12, is connected to the end of the lever 13 in the following manner, as illustrated in Figs. 5, 6, and 7: The lever-section 13, a longitudinal view of which is shown in Fig. 5, is provided with the downward extension 22, designed to afford a seat whereby the said section may be pivotally connected to the ful-

crum-link 18, it being understood that a preferable construction would require that two of said links be provided, one of them resting on either side of the extension 22. That end of the lever-section 13 designed to be connected with the handle is provided with a vertical opening, as indicated by the numeral 23, and the end of the handle is enlarged and properly shaped to be received by said recess, as indicated by the numeral 24. The end of the handle is bifurcated, whereby the branches 25 and 26 are provided, the object of said branches being to engage both the upper and lower sides of the lever-section, and thus insure that the handle will be reliably held in position. Upon the lower edge of the handle I provide near the end thereof the hook extension 27, designed to engage the bar 28, extending across the outer end and lower side of the recess 23, as clearly shown in Figs. 2, 5, and 6. By the arrangement just described it will be seen that the handle may be very easily disconnected from the lever-section 13 when it is not desired to manually operate the pump and that said handle may be instantly readjusted in its operative position. In constructing the lever-section 13, as will be seen by reference to Fig. 5, the outer end thereof is bifurcated or provided with a longitudinally and vertically disposed recess which extends inwardly to the shoulder 29, thereby providing a seat within said recess and between the branches for the reception of the pump-rod 5 and also permitting the end of the link 11 to be reliably secured in place.

By reference to the foregoing description and the accompanying drawings it will be seen that my improved operating devices may be disposed in various relations to each other, thereby producing different and desirable results.

By reference to Fig. 1 it will be observed that the upper end of the section 11 has been released from engagement with the angular extension 9 and swung downward substantially parallel with the body of the pump. It will be further observed that the bolt designed to pass through the aperture 8 has been removed, which will permit the free play or reciprocation of the pump-rod 5 within the socket 7. When the parts are thus arranged and adjusted, the pump is ready to be operated by the handle 12. In order to reinforce the handle 12 in case there is no wind to operate the pump or when for any reason it is desired to manually control the pump, the link-section is extended outward, so as to lie substantially in the same plane occupied by the extension 15 when the apertures 16 and 17 are brought into registration with each other and suitable bolts or pins entered in said apertures, thereby disposing the link-section 11 so that it may be utilized as a handle designed to supplement the handle 12, and thereby enable two persons to control the pump, it being understood that

the bolt or pin passing through the aperture 8, and thus connecting the rod 5 with the union 6, has been removed.

In Fig. 3 I have shown my improved pump-operating devices so disposed that the pump will be operated by the reciprocation of the piston of the windmill after the bolt has been entered in aperture 8. This arrangement may be readily effected by removing the bolt 14 (shown in Fig. 2) and entering it or another one especially provided for this purpose through the aperture. The lever-section 13 by this arrangement will be wholly disconnected from the rod 5, and thus permitted to play in the performance of its office without in any wise disturbing said lever-section or the handle or link-section attached thereto.

In Fig. 8 I have illustrated my pump-operating devices as being so disposed that the pump may be operated by the windmill even when the wind is very gentle, inasmuch as I apply a leverage to the pump-rod which will enable the same to be operated with a minimum amount of power, though it is obvious that the stroke will be necessarily more limited in extent and rapidity. I am enabled to apply great leverage to the pump-rod by pivoting the lower end of the link-section 11 to the extension 15, while the upper end is pivoted within the recess 10^a, it being understood that the bolt 14 is left in position so as to connect the lever-section 13 to the pump-rod and also that the bolt is removed from the aperture 8, thus disconnecting the union 6 from the pump-rod 5, as set forth in Fig. 8.

By the construction just described in the several views of the drawings it will be observed that the piston of the windmill may be so applied to the pump-rod 5 that it will operate it positively and that a full stroke of said piston may be communicated to said rod. When the wind is low, a very great leverage or multiplied force will be brought to bear upon said rod and insure the reciprocation thereof, though the stroke, as is obvious, will be more limited in extent.

The several parts of my pumping apparatus may be very cheaply and expeditiously manufactured and readily disposed in their respective operative positions, and since said parts may be quickly adjusted and readjusted the use thereof will be found to be very desirable. By making it possible to disconnect the pump-handle in the manner specified and quickly readjusting the same in its operative position in connection with the lever-section 13 said handle may be preserved against being casually broken or bent out of place, as by cattle or horses rubbing against the same.

While I have described the preferred construction which may be adopted in the production of the several parts of my invention, it is understood that I desire to comprehend in this application all such substantial equivalents and substitutes as may fall fairly within the scope of my invention.

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

1. The herein-described series of levers for pumps comprising the union 6 having a socket and an extension 9, a pump-rod cooperating with said socket, a fulcrum-link secured to the pump, a lever-section pivoted to said link, and a link 11 designed to connect said lever and said extension whereby the force of the windmill or other motive power may be applied indirectly to the pump-rod, all combined substantially as specified and for the purpose set forth.
2. In pumps, a union having a socket and an extension, and a link adapted to pivotally connect said extension and the pump-rod, in the manner specified and for the purpose set forth.
3. In pumps, a lever; a pump-rod; a detachable handle adapted to be secured to said lever, in combination with a socket carried by the rod of the windmill, said socket having a right-angled extension, and means to connect said socket directly to the pump-rod and a link 11 adapted to indirectly connect said extension and lever whereby an increased leverage will be applied to the pump-rod, all combined in the manner specified and for the purpose set forth.
4. In pump-operating devices, the herein-described union adapted to form the connecting-link between the pump-rod and the piston of the windmill consisting of an upright portion designed to be secured to said piston and further having an extension provided with a recess, and also having a vertically-disposed socket adapted to adjustably receive

the pump-rod, substantially as specified and for the purpose set forth.

5. As an improvement in pump-operating devices, the herein-described series of levers comprising a union 7 having an extension; the lever-section 13 adapted to be connected to the pump-handle and suitably pivoted to the body of the pump, and further having a bifurcated end, in combination with a link-section 11 designed to connect said bifurcated end of said lever-section with said extension formed on said union, and a pump-rod adapted to fit between said bifurcated end, whereby the piston of the windmill may be connected directly to the pump-rod or connected indirectly thereto through said link-section, in the manner specified and for the purpose set forth.

6. In pumps, a lever-section 13 having one end bifurcated and the opposite end provided with an opening 23 and a cross-bar 28, in combination with an operating-handle having an end provided with branches 25 and 26 adapted to fit said opening, said end also having upon its lower side a hook extension 27 adapted to engage said bar whereby the branches 25 and 26 respectively will rest upon the upper and lower side of said lever-section 13 and thereby hold the handle in union with said section until said hook is released from said bar as and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

HANS G. JOHNSON.

Witnesses:

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