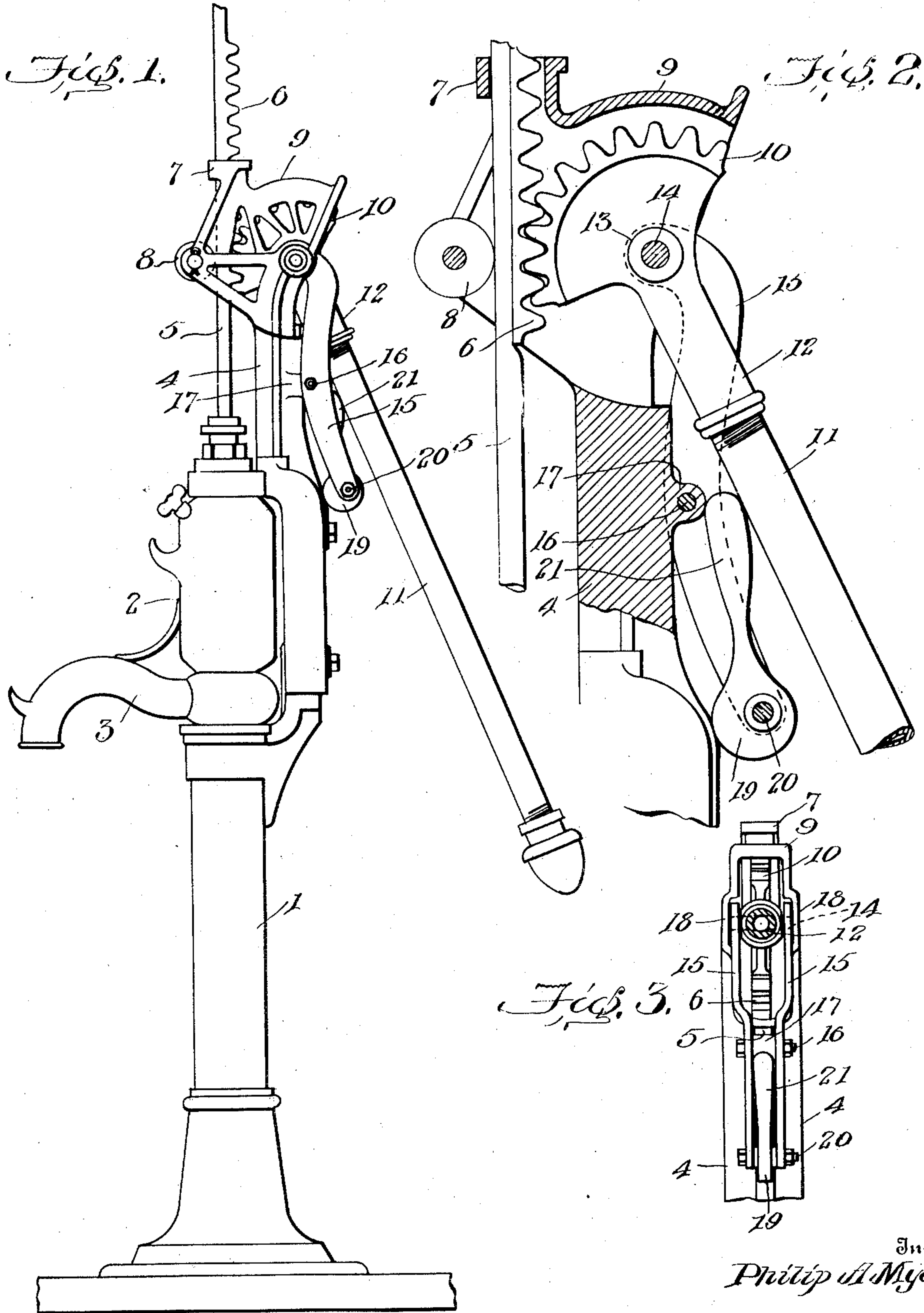


P. A. MYERS.  
PUMP.

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907,164.



Witnesses

I. Howard Walmsley.  
H. L. Hamaker.

Inventor

Philip A. Myers,

By *H. A. Toulmin*,

Attorney



# UNITED STATES PATENT OFFICE.

PHILIP A. MYERS, OF ASHLAND, OHIO, ASSIGNOR TO F. E. MYERS AND BROTHER, OF ASHLAND, OHIO, A COPARTNERSHIP.

## PUMP.

No. 907,164.

Specification of Letters Patent.

Patented Dec. 22, 1908.

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*To all whom it may concern:*

Be it known that I, PHILIP A. MYERS, a citizen of the United States, residing at Ashland, in the county of Ashland and State of Ohio, have invented certain new and useful Improvements in Pumps, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to pumps, and more particularly to that class of pumps designed for use both as hand pumps and as windmill-actuated pumps, in which the connection between the pump handle which is used in operating the pump by hand and the pump rod is a rack and gear segment connection.

The primary object of my present invention is to provide a simple, inexpensive and efficient device whereby the gear segment on the pump handle may be readily moved into and out of mesh with the rack, the former being its position when the pump is operated by hand and the latter its position when the pump is operated by the windmill.

A further object of the invention is to provide a structure of this character such that the parts may be positively locked in their relative positions when in mesh, so as to prevent accidental disengagement thereof.

To these and other ends my invention consists in certain novel features which I will now proceed to describe, and will then particularly point out in the claim.

In the accompanying drawings, Figure 1 is a side elevation of a pump embodying my invention in one form; Fig. 2 is an enlarged detail view, showing the upper part thereof in vertical section; and Fig. 3 is a detail rear elevation, illustrating the shifting mechanism and its mode of mounting on the standard.

In the said drawings, in which I have shown my invention as applied to a well known form of pump, 1 indicates the standard, 2 the head, provided with a spout 3, 4 the fulcrum support rising from the standard, and 5 the pump rod. These parts may be of any approved construction. The pump rod is flattened at its upper end and receives or has formed thereon a rack 6, and the support 4 is provided with a guide 7 for this portion of the rod, and with a roller 8, which bears against the back of the pump rod at the point where the gear segment meshes with the same. The support 4 is also provided with a hood or housing 9, which in-

closes and protects the gear segment. The gear segment, indicated by the reference numeral 10, is secured to the end of the pump handle 11, being preferably provided with an integral socket 12, into which the handle proper is threaded. The gear segment 10 is provided with a bearing sleeve 13, by means of which it is mounted on a pivot or fulcrum 14, which latter is movable toward and from the rack on the pump rod. To this end, said pivot or fulcrum is mounted at one end of a pivoted arm or lever, said arm or lever being pivotally mounted on the support 4 in such a way that the end thereof which supports the fulcrum of the gear segment is movable, as already stated, toward and from the rack. Preferably, this pivoted arm or lever comprises two parallel members 15, in the upper ends of which the pivot 14 is mounted, the bearing sleeve 13 of the gear segment 10 fitting between the members 15, while the pump rod also passes between the same. The pivot or fulcrum of said arm or lever is indicated at 16, the support 4 being provided with a projecting lug 17 to receive said pivot, which is preferably in the form of a bolt, as shown, passing through the lug 17, and through the two members 15 of the arm. The lug 17 fits between the members 15, which latter are thus steadied and guided thereby. The upper ends of the members 15 are received in recesses 18 in the sides of the housing 9, so as to further guide and support the arm or lever laterally at its upper end.

Provision is made for imparting to the pivoted arm or lever the movement necessary to bring the gear segment into mesh with the rack and hold the same positively in such intermeshing position. The construction which I prefer for this purpose is that shown, in which the pivot or fulcrum 16 of the arm or lever is located between the ends thereof, said arm or lever extending downward beyond said pivot or fulcrum and being provided at its lower end with the means for positively so moving it that its upper end, which carries the gear segment, will be moved toward the rack to engage the segment therewith. This means operates between the lower end of the lever and the pump standard, or the support forming a part thereof. In its preferred form, as shown, it consists of a cam or eccentric 19, mounted on a pivot 20, carried by the lower



end of the arm or lever. Preferably, the pivot 20 is in the form of a bolt passing through the ends of the members 15, the cam 19 being provided with a bearing sleeve 22, which fits between the members 15 and through which the pivot bolt 20 passes. The cam 19 is provided with an operating handle 21, which is adapted to pass between the members 15 when the parts are in the position shown in the drawing, and may be conveniently arranged to contact with the lug 17 to limit its movement, as shown. As already stated, this cam acts against the adjacent surface of the standard or fulcrum support, and by its eccentricity, when turned into the position shown in the drawings, it forces the lower end of the arm or lever outward, and the upper end inward, carrying with it the gear segment and bringing the same into mesh with the rack. It will at once be seen that, when the parts are in this position, the cam 19 positively locks the arm or lever against outward motion at its upper end, thereby holding the gear segment positively against displacement from such position. When it is desired to disengage the parts, the cam 19 is turned by means of its handle 21 so as to withdraw the same from contact with the standard or support, whereupon the lower end of the lever is free to move inward, and the upper end may be swung outward to disengage the segment from the rack. It may be stated, in this connection, that the pivot or fulcrum 14, during the outward movement of the upper end of the lever, moves past the vertical plane passing through the fulcrum 16, so that the weight of the parts connected to the upper end of the lever tends to move the same outward, this movement being limited by the contact of the lower end of said lever, or the cam 19 carried thereby, with the standard or support. By reason of this arrangement, the upper end of the lever is prevented from

tending to swing inward and thereby bring the segment into contact with the rack again. 45

It will be seen that the construction is simple and efficient, and that by its means the segment may be readily moved into and out of mesh with the rack, the former being in its position when the pump is operated by hand and the latter its position when the pump is operated from the windmill. Its movement into mesh is positive, and it is positively held in meshing position so as to prevent accidental displacement. 55

I do not wish to be understood as limiting myself to the precise details of construction hereinbefore described and shown in the accompanying drawings, as it is obvious that these details may be modified without departing from the principle of my invention. 60

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:— 65

In a rack and gear pump adapted for both windmill and hand operation, a standard provided with a pivot lug, a pump rod provided with a rack, an arm comprising two substantially parallel members located on opposite sides of said pivot lug and pivotally connected thereto between their ends, a gear segment pivotally mounted between the members of said arm near the upper ends thereof and adapted to mesh with said rack, a pump handle operatively connected to said gear segment, a cam pivotally mounted between the members of said arm near the lower ends thereof, and means for actuating said cam to cause the same to engage said standard and swing said arm about its pivotal center. 75 80

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

PHILIP A. MYERS.

Witnesses:

W. W. INGMAND,  
A. N. MYERS.