

No. 863,870.

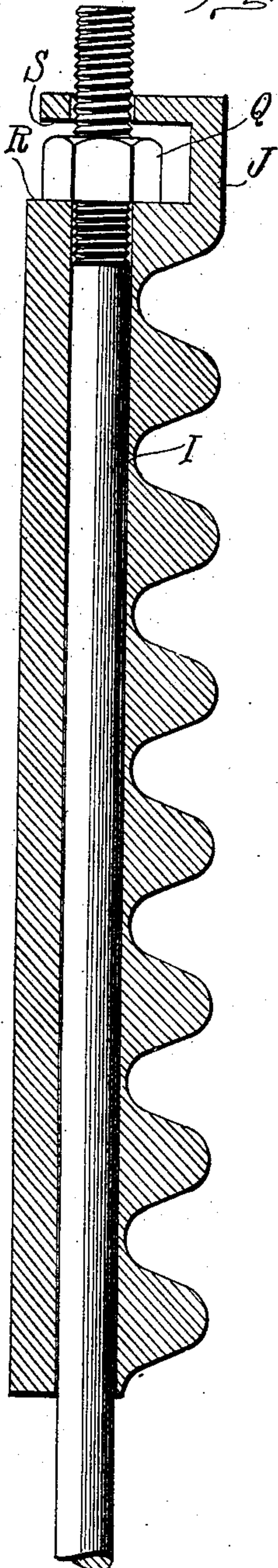
PATENTED AUG. 20, 1907.

P. A. MYERS.
PUMP.

APPLICATION FILED SEPT. 14, 1906.

2 SHEETS—SHEET 1.

Fig. 2.



Witnesses

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F. H. Schaefer;

Fig. 3.

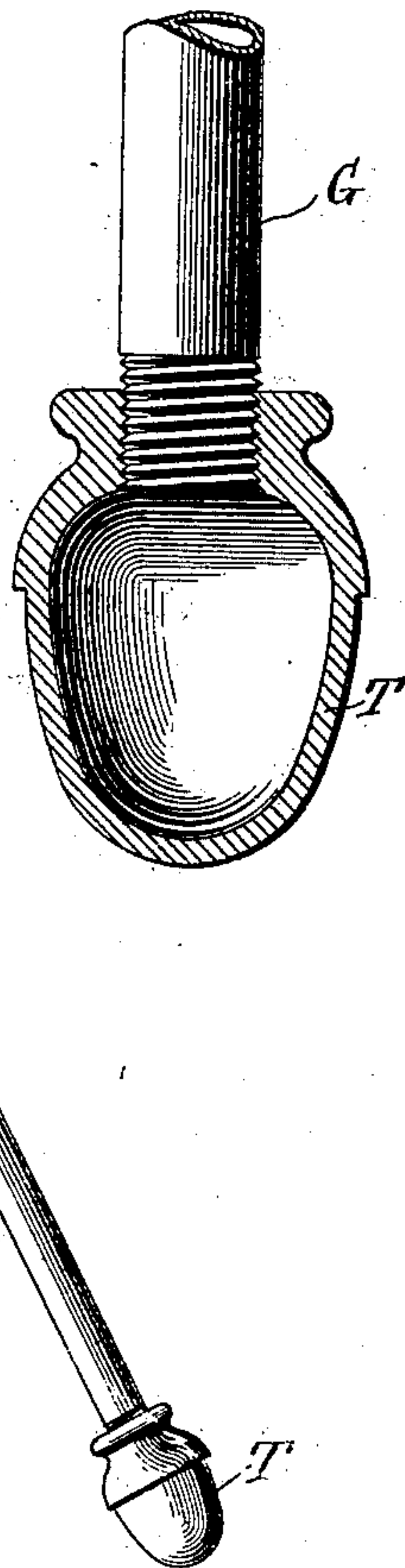
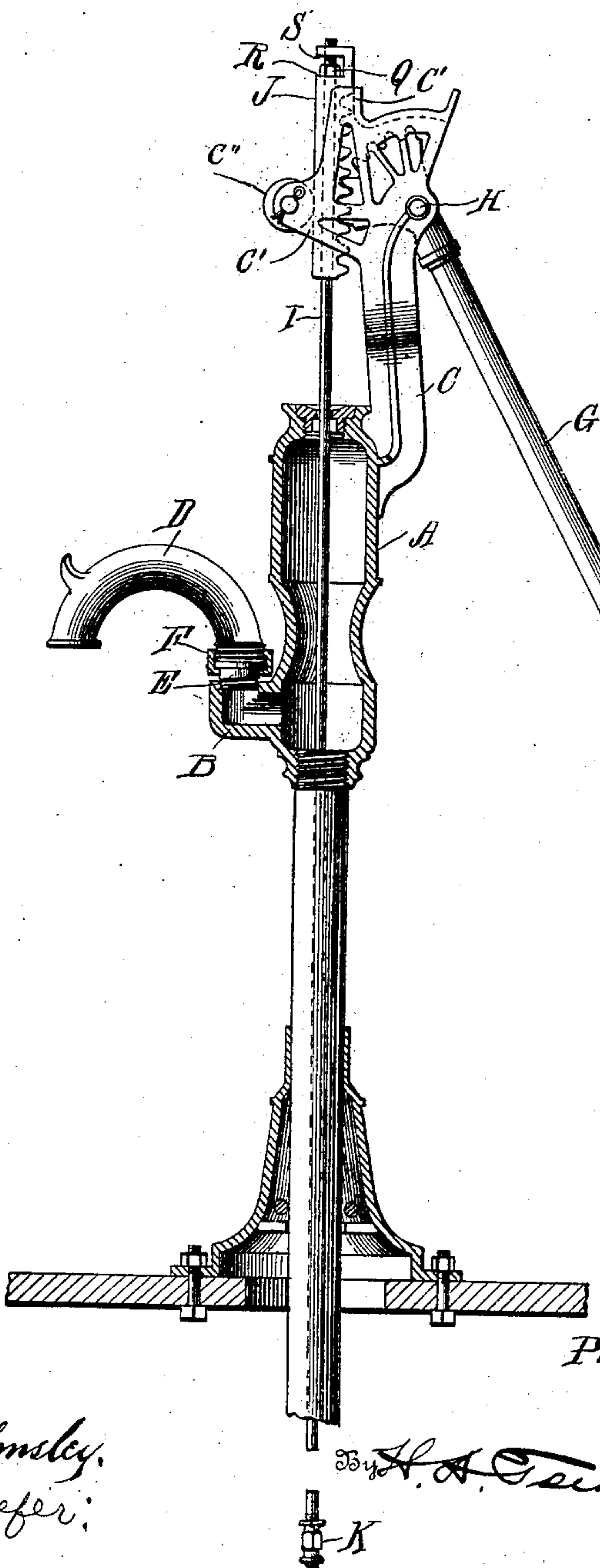


Fig. 1.



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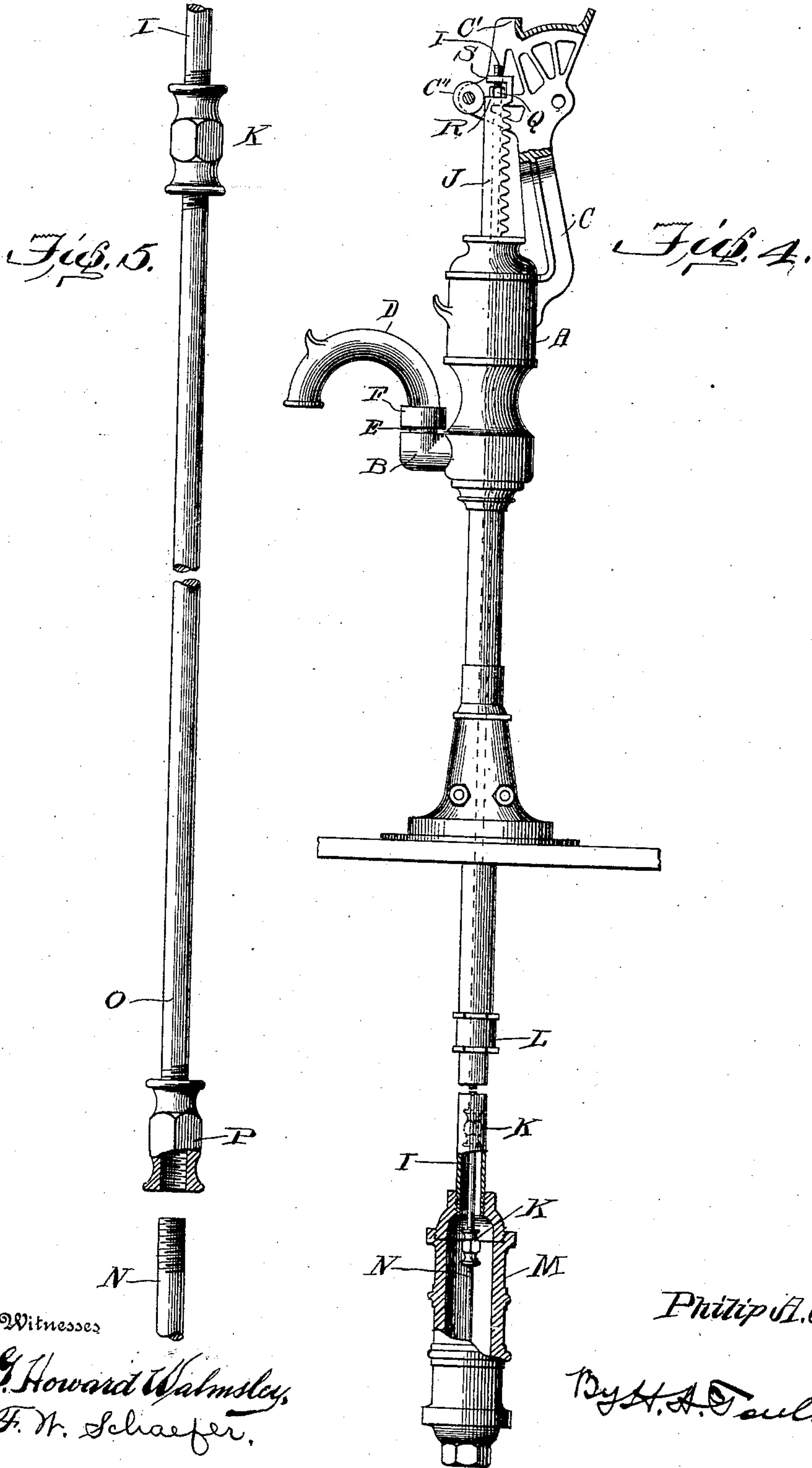
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2 SHEETS—SHEET 2.



Witnesses
G. Howard Walmsley,
F. W. Schaefer,

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UNITED STATES PATENT OFFICE.

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

PUMP.

No. 863,870.

Specification of Letters Patent.

Patented Aug. 20, 1907.

Application filed September 14, 1905. Serial No. 278,388.

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 improvements in pumps, of the type designed principally for domestic use and adapted to be utilized in wells of different depths.

The improvements have reference to several special features, namely:—(1) To enable a pump of a set length to be lengthened for a deeper well, say a pump for a ten foot well to be extended for use in a fifty foot well, and for this purpose to lengthen the piston-rod by attaching an extension to the original rod, yet without removing the original rod, or any portion of the piping, to couple the extension to the original rod; which is accomplished by removing the handle and dropping the original rod down until the rack reaches the pump head and by swiveling such rack on the rod, so that the rod can be rotated to couple it with the new section or extension, this dropping of the original rod bringing the coupling below the fixed length of the pipe at the point where the cylinder is originally attached, as more fully hereinafter explained. (2) Incidentally the use of the swiveled rack on the rod enables me to use a rod of the same size continuously from above the pump down through the pump, as distinguished from the old way of using a small rod within the lower part of the pump and a flat and enlarged rod in the upper part, the two being coupled together down in the pump and the enlarged part being used to carry the rack; and as a consequence of using this small rod of one size throughout, I avoid the presence of a coupling between the two sizes of rods, and by eliminating this coupling I leave the waterway free of the obstruction its presence created, and thus I get a freer waterway by my construction of a continuous small rod upon the upper part of which the rack is swiveled; and this is a feature of my invention, namely, a continuous small rod and a swiveled rack on the upper portion of it. (3) To adapt the pump to uses in wells of different length and yet to work equally easy whether in a deep or a shallow well, so far as concerns the effort of the operator to move the moving parts of the pump, I provide the handle with a hollow portion which may be weighted, so that it will balance the weight of the actuating rod, no matter what the length of the latter may be.

In the accompanying drawings, Figure 1 is a partial side elevation and partial vertical section of a pump embodying my improvements; Fig. 2 is an enlarged detail view of the rack in section and of a part of the actuating rod in side elevation; Fig. 3 is an enlarged detail view of a part of the handle, with the hollow por-

tion or cap, for receiving adjusting weights, in section; Fig. 4, an extended side elevation of the pump, with a part of the cylinder and supporting pipe in section; and Fig. 5, a detail view of a part of the original actuating rod and its coupling, and an extension of such rod ready for connection.

Referring to the first feature of my invention, it will be seen that the pump head or reservoir A, with elbow B and the handle support or arm C, with actuating rod guide C' (which carries a roller C'') are constructed of a single piece or casting, while the pump spout D has a swiveled connection to the elbow.

Heretofore it has been the practice to mount the handle support and rod guide in a movable relation to the pump head or reservoir and to connect the spout rigidly with the reservoir, so that the handle had to be swung to one side or the other to make the pump a right-hand or left-hand pump. As the handle support and rod guide are subjected to jarring and to strain, as a consequence of supporting the handle and guiding the rod, the result of use is to constantly loosen the movable connection between the handle support and the head or reservoir in the old constructions. I avoid this objection, which in practice is a serious one to the user, by the integral construction of the reservoir, handle support and rod guide of my pump, while I still preserve the capacity of making the pump a right-hand or left-hand pump. This latter I accomplish by swiveling the spout to the elbow. A suitable swivel connection is made by providing the elbow with a nipple E carrying a nut F, into which the spout may be screwed. In this way the spout can be adjusted from a position straight out in front of the pump either to the left or to the right. This arrangement, combined with the integral construction of the reservoir, handle support rod guide and elbow, I have found, in practice and in manufacture, to be very satisfactory, and acceptable as well to dealers and users.

Referring to the second feature of my invention, it will be seen that the handle G can be readily removed by withdrawing the fulcrum pin H, and then that the actuating rod I, with the rack J, will drop down in the pump until the rack rests on the upper end of the head A. In this position the coupling K on the rod will drop or move from the dotted position shown in Fig. 4 to the full line position shown in that figure. In the latter position it is below the drop pipe L of the pump, and on unscrewing the cylinder M from such pipe, the coupling will be exposed, when the piston-rod N can be unscrewed and the additional section of actuating rod, indicated at O in Fig. 5, can be attached to the coupling K, and to the piston-rod by means of the coupling P. It is desirable to rotate the actuating rod I in screwing together the coupling K and the extension O, as generally the extension will have been

screwed into connection with the piston-rod N before it is coupled to the section I of the actuating rod. To permit of the rotation of the section I, the rack J is swiveled thereon. (See Fig. 2.) The rod passes
 5 through an opening in the rack large enough to permit the rod to revolve in the rack, so that while the rod may be turned, the rack will still keep its proper position in the rod guide C' relatively to the plane of the segment on the end of the handle by which the rack is operated;
 10 so that no matter where the rod ends in the rotation of it to screw the coupling K on to the extension O, still the rack will always be in proper position to mesh with the toothed segment on the handle. A nut Q is screwed on the upper end of the rod I and is placed between
 15 shoulders R and S on the rack to keep the rack from moving longitudinally independent of the rod, while at the same time permitting the adjustment of the rack relatively to the rod and to the fulcrum H, so as to be adjusted properly with respect to the toothed segment.
 20 Thus, by swiveling the rack on the rod and dropping the rod down until the coupling K is below the pipe L, an extension to the rod may be readily attached. An intermediate or drop pipe will then be used to connect the cylinder to the pipe L, as is usual in lengthening
 25 pumps for deeper wells. Moreover, by this manner of connecting the rack with the actuating rod I, a rod of uniform size, from its lower end upward, can be utilized, and thus couplings or joints avoided within the waterway of the pump, where they would occur if the rod
 30 were of one size in the lower part of the pump and of a larger size in the upper part, where the rack would be attached, as is common in other older constructions. Thus I avoid interfering with the free passage of the water by avoiding the use of an additional coupling
 35 within the body of the pump.

Referring to another feature of my invention, attention is particularly called to Fig. 3, where it will be seen that the end of the handle G is provided with a hollow vessel or cap T. The purpose is to remove the
 40 cap and put weight therein, as shot or scraps of iron, until the pump handle is weighted sufficiently to properly balance the weight of the actuating rod, with its extension added. In this way the pump can be extended for deeper wells and yet a balance maintained
 45 between the handle and the actuating mechanism. In practice, this device is very convenient and acceptable, particularly to a user, who is thus saved heavy labor in

lifting the extra weight of the lengthened rod every time the pump handle is forced down, in cases where the pump has to be lengthened out of proportion to the
 50 original intention.

It will be understood that these pumps are made in set lengths, such as indicated in Fig. 4, and that the handle is made to balance the actuating mechanism for that length. When such mechanism is lengthened
 55 and the weight increased, the handle must be increased in weight accordingly.

Thus it will be seen that I have brought together in this pump a number of practical and efficient special features, rendering the pump more efficient and acceptable and more durable.
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While I have shown and described the elbow B as integral with the head A of the pump, and while it is preferred to make it integral, still it might be otherwise, while the spout would be swiveled and the handle
 65 support and rod guide would be integral.

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

1. In a pump, the combination, with an actuating rod, of a rack swiveled to the upper end thereof on a longitudinal axis and secured thereto against longitudinal movement, a coupling on the lower end of the rod, the rod being adapted to drop down in the pump until the coupling is exposed below the drop pipe and to be rotated.
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2. In a pump, the combination, with the general body of the pump and its drop pipe, of an actuating rod therein, with a coupling on its lower end and a rack on its upper end, the rack being swiveled to the rod and the rod adapted to drop down until the coupling is exposed below the drop pipe.
 75

3. In a pump, an actuating rod of practically uniform size from its upper exposed portion down to approximately the lower end of the drop pipe, and a rack swiveled to the upper exposed portion.
 80

4. In a pump, the following instrumentalities:—a general pump body, including a drop pipe and removable cylinder, an actuating rod within the pump with a rack swiveled to its upper exposed portion, and a coupling on its lower end, the rod being adapted when the handle is removed to drop down until the coupling is exposed below the drop pipe and to be rotated by manipulating the coupling after removing the cylinder, the coupling being adapted to thereby connect with an extension of the actuating rod.
 85

In testimony whereof, I affix my signature in presence of two witnesses.
 90

PHILIP A. MYERS.

Witnesses:

MAURICE V. SEMPLE.

A. G. BEER.