

B. OLSON.
PUMP MECHANISM.
APPLICATION FILED APR. 25, 1911.

1,017,992.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

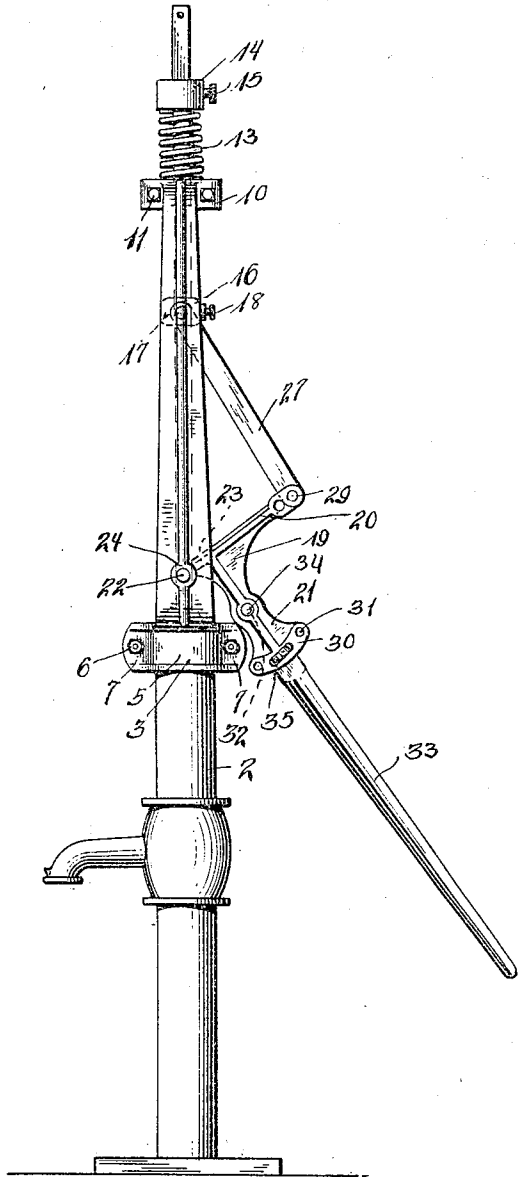
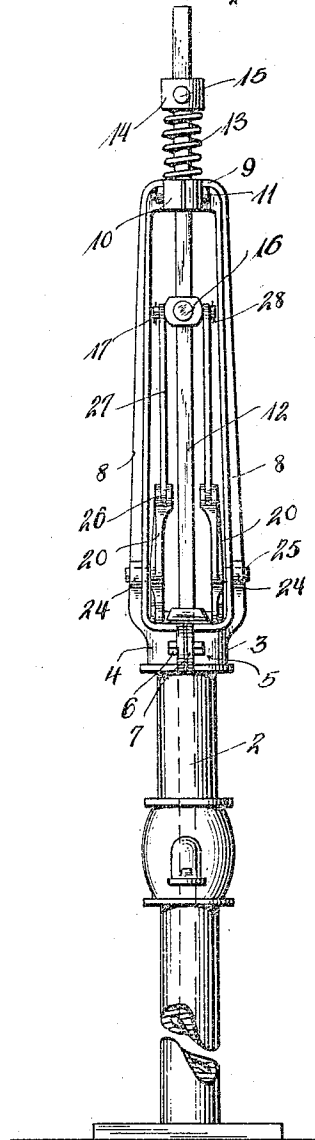


Fig. 2.



Inventor

Bennet Olson

Witnesses

Ernest Crocker
W. H. Woodman.

By

[Signature]

Attorneys

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2 SHEETS—SHEET 2.

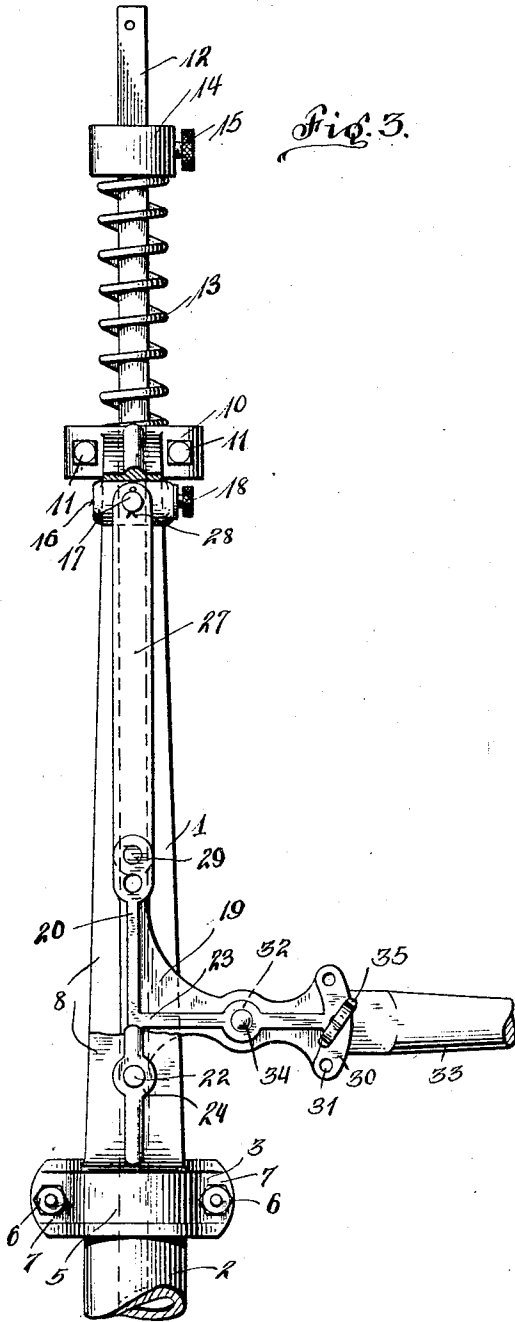


Fig. 3.

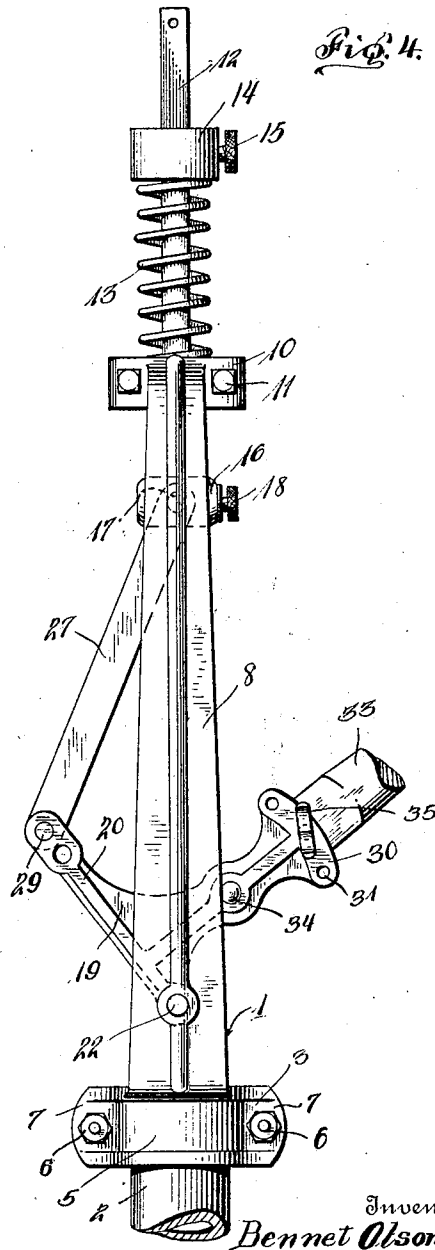


Fig. 4.

Witnesses

Ernest Crocker
W. H. Woodman.

By

Bennet Olson

Inventor
Bennet Olson

Attorney

UNITED STATES PATENT OFFICE.

BENNET OLSON, OF GLENCOE, MINNESOTA, ASSIGNOR OF ONE-HALF TO WILLIAM C. BURTMAN, OF WASECA, MINNESOTA.

PUMP MECHANISM.

1,017,992.

Specification of Letters Patent.

Patented Feb. 20, 1912.

Application filed April 25, 1911. Serial No. 623,221.

To all whom it may concern:

Be it known that I, BENNET OLSON, a citizen of the United States, residing at Glencoe, in the county of McLeod, State of Minnesota, have invented certain new and useful Improvements in Pump Mechanisms; 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 new and useful improvements in pump mechanisms and more particularly to that class of double stroke pump operating devices.

The primary object of my invention is the provision of a pump operating mechanism in which the pump rod will be reciprocated on manually swinging the operating handle of the pump in one direction, whereby a double stroke of the pump rod is attained with a minimum amount of leverage.

Another object of my invention is the provision of a pump operating mechanism in which the plunger is raised and lowered within the pump tubing by a quick and uniform motion, and where the pump actuating mechanism may be so adjusted as to lengthen or shorten the stroke without dismantling the parts of the pump, thus obviating all subsequent leakage which is usually caused in a pump which has been taken apart in order to adjust the pump rod. And a still further object of my invention is the provision of a pump operating mechanism adapted to be used in connection with all types of single stroke pump rods, thus adapting them to effect a double stroke, the pump operating mechanism being so constructed as to enable the same to be used in connection with pumps of all forms and for all purposes.

With these and other objects in view the invention consists in the construction, combination and arrangement of parts which will be hereinafter more fully described, illustrated in the accompanying drawings disclosing a preferred embodiment of my invention and pointed out in the appended claim.

In the drawings in which similar reference numerals designate corresponding parts throughout, Figure 1 is a side elevation of a pump with my operating mechanism applied thereto showing the same at the be-

ginning of the stroke. Fig. 2 is a front elevation thereof. Fig. 3 is a side elevation partially in section showing the position of the pump operating mechanism at the middle of the stroke. Fig. 4 is a like view showing the position of the mechanism at the end of the stroke.

I have illustrated my improved pump actuating mechanism which as a whole is designated by 1 as secured to and supported by the customary form of pump casing 2, the supporting means consisting of the two members 3 and 4 of a split collar 5 adapted to be secured around the top of the pump casing 2 by means of bolts 6 passed through the outwardly extending ears 7. Each of the members 3 and 4 is provided with an upwardly extended member 8 terminating at their upper ends with the inwardly directed portions 9 which are provided with laterally extending ears 10 adapted to be secured together by means of bolts, rivets or other preferred fasteners 11. A pump rod here designated as 12 has one end extended upwardly from the pump casing and is reciprocally mounted in this frame with its free end extending above the terminals of the side members 3 and 4, these terminals being adapted to form a bearing for the rod. A helical spring 13 surrounds the extended portion of the pump rod with its lower end resting upon this bearing and its upper end resting against a slidable collar 14 which is mounted upon the pump rod 12 and secured in adjusted position by means of the set nut 15. A second collar 16 similar in construction to the first but provided with two oppositely extending studs 17 is also mounted upon the pump rod, between its upper and lower bearing and secured in place by a set nut 18.

A pair of bell crank levers 19 substantially right-angular in shape and with the arms 20 and 21 are pivotally mounted on the inner sides of the side members 3 and 4 by means of studs 22 formed upon the extended portion 23 of the arms 20, said studs being adapted to be inserted in the aligned apertures 24 and 25 tapped in the lower portions of the side members 3 and 4.

The upper ends of the arms 20 are bifurcated to form elongated forks 26 the sides of which, are provided with a series of aligned bolt receiving apertures. A pair of links 27 are rotatably secured by one end to the studs

17 of the collar 16, the ends of said studs being bored to receive suitable securing means such as split pins 28. The other ends of these links are pivotally secured between the bifurcated member of the lever arm 20 by means of bolts or other preferred securing means 29.

The ends of the arms 21 of the bell crank levers are enlarged to form the sector shaped terminals 30 which are provided with a series of apertures 31. The arms 21 are also provided with an aperture 32, and a pump handle 33 is secured between the arms 21 by means of a bolt 34 and an adjusting pin 35, said adjusting pin in connection with the apertures 31 providing means whereby the handle may be secured at any desired angle to the lever arms 21.

The operation of the pump is easily understood by referring to Figs. 1, 3, and 4 of the drawings and from them it will be seen that as the handle 33 is raised it acts through the medium of the bell crank levers and the connecting links to raise the pump rod, which action is continued until the pump handle has been raised to a position at right angles to the pump, when a further raising of the handle will lower the pump rod to its original position. Upon the reverse stroke of the pump handle the pump rod is again raised and lowered in the same manner. The spring 13 is compressed by each downward stroke of the pump rod 12 and thus stores up energy to assist in the upward raising of the pump rod.

It will be seen that by means of the spaced apart bolt receiving apertures provided in the forked ends of the lever arms 20 I have

provided a simple and effective means by which the length of the stroke may be readily regulated. It will also be seen that the means employed in adjusting the pump handle 23 are such, that the handle may be readily adjusted without disconnecting it from the pump.

It will be seen from the above that I have provided a simple and effective operating mechanism for use with double stroke pumps, and that this mechanism may be used upon all pumps in which a reciprocating pump rod is used and for all purposes to which pumps of that character may be adapted.

What I claim is:—

A pump actuating mechanism, comprising a frame adapted to be secured to a pump casing; a pump rod reciprocally mounted in said frame, a collar adjustably secured to said pump rod and provided with oppositely disposed trunnions, a pair of bell crank levers having outwardly directed trunnions intermediate their length, said trunnions being journaled in the sides of the frame, links adjustably connecting one arm of each of said levers with one of the trunnions of said collar, a pump handle pivoted by one end between the other arm of said lever, and means for additionally and adjustably securing said handle between said lever arms.

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

BENNET OLSON.

Witnesses:

JOHN LUITEN,
WILLIAM C. BURTMAN.