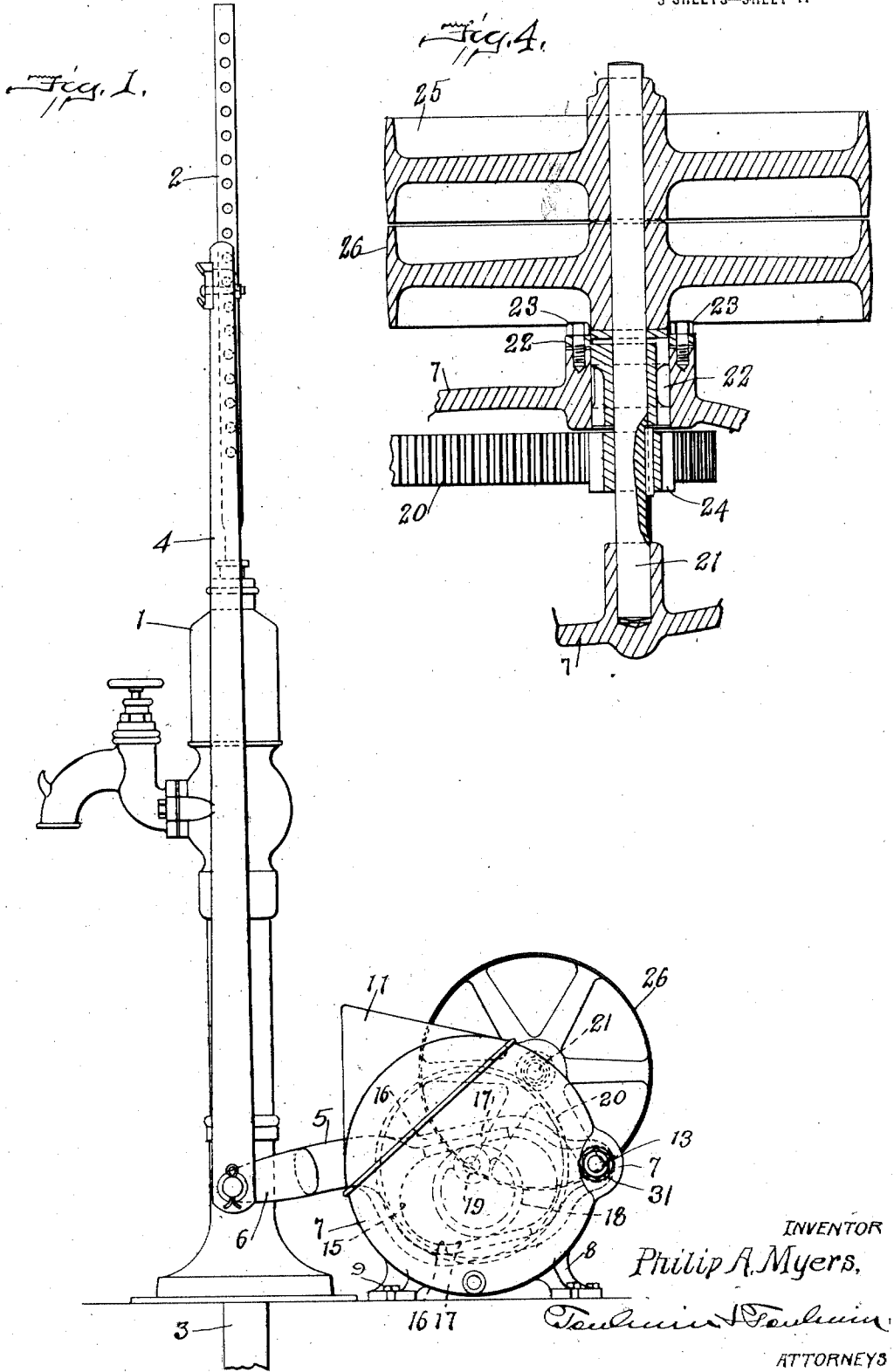


1,385,146.

Patented July 19, 1921.

3 SHEETS—SHEET 1.



1,385,146.

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3 SHEETS—SHEET 2.

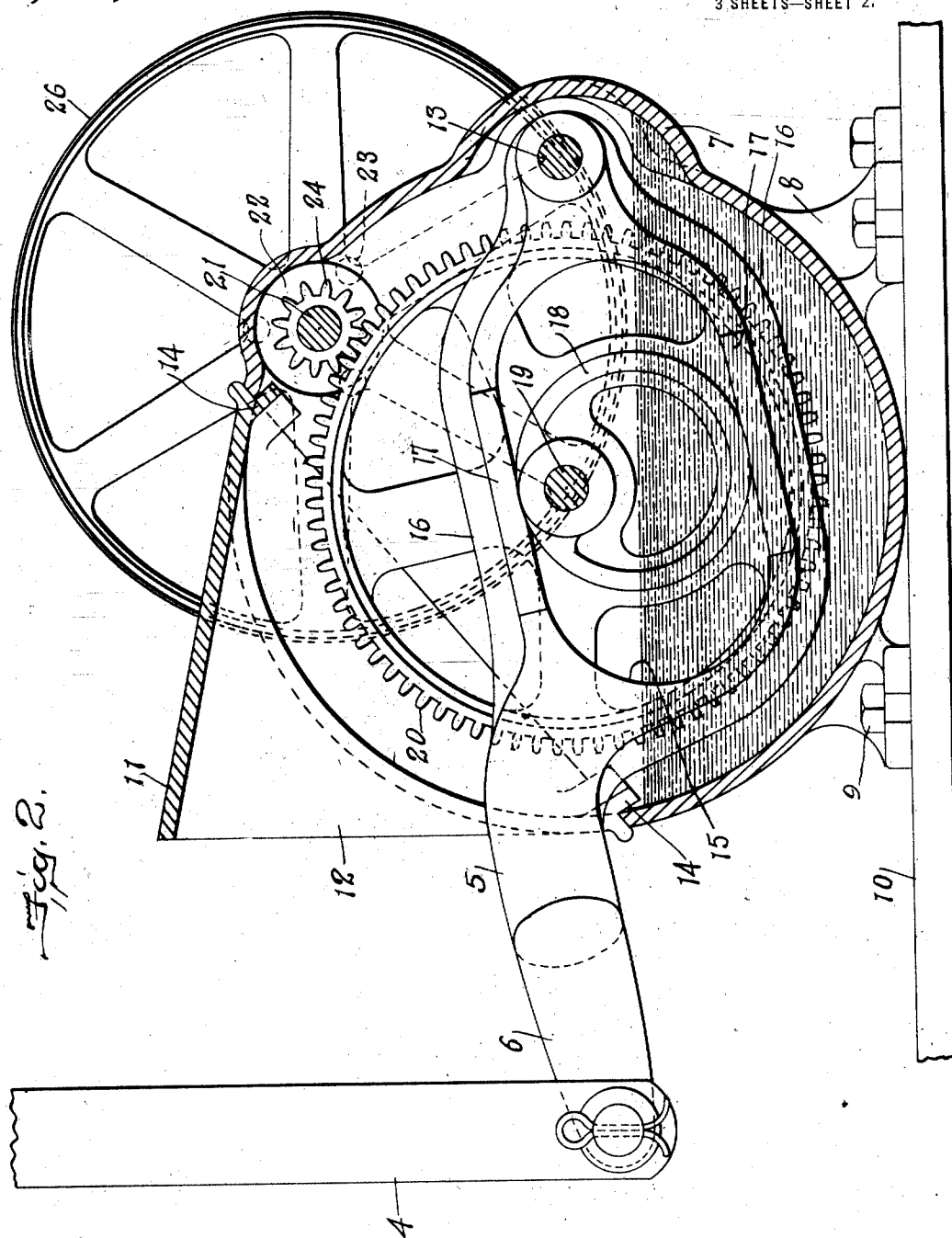


Fig. 2.

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P. A. MYERS.
POWER HEAD.
APPLICATION FILED SEPT. 27, 1920.

1,385,146.

Patented July 19, 1921.
3 SHEETS—SHEET 3.

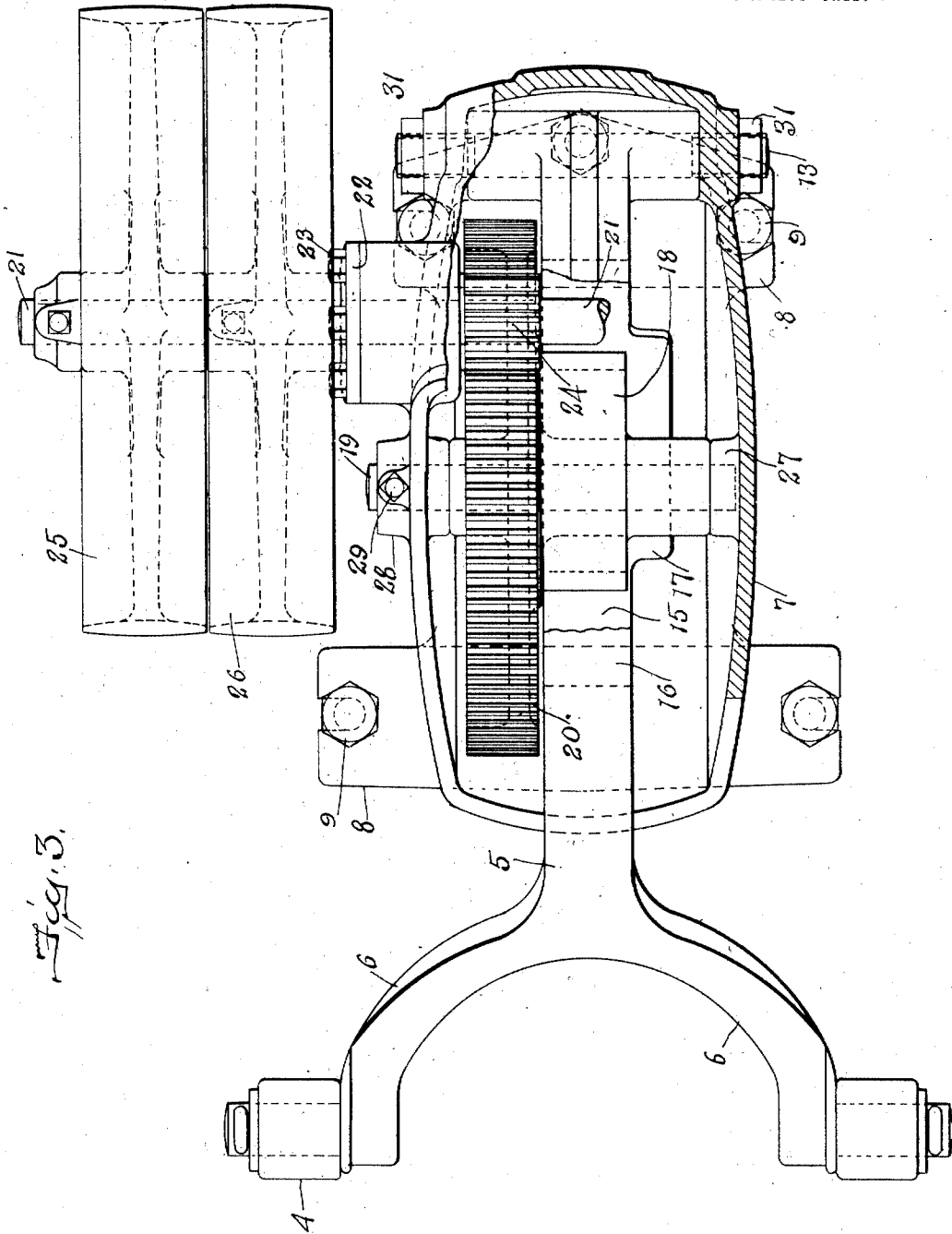


Fig. 3.

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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 CONSISTING OF FRANCIS E. MYERS AND PHILIP A. MYERS.

POWER-HEAD.

1,385,146.

Specification of Letters Patent.

Patented July 19, 1921.

Application filed September 27, 1920. Serial No. 413,022.

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 Power-Heads, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to improvements in power heads for use in operating the piston or pumping rod of water pumps.

The general objects of my invention are to make the power head efficiently self-oiling; to make the operating mechanism lift the pump rod slowly, comparatively, on the upstroke, when it is subject to the load of its own weight and engaged in "lifting" the water, while to accelerate the speed of the descent of the pumping rod for the general purpose of hastening the cycle of operation and thus make the pump deliver more water in a given time; to enable the ready removal of the operating parts from within the casing for the substitution of new parts in case of wear or breakage of the originals; and to so shape and arrange that part of the device which I term the walking beam, as will appear later, that it will readily receive or embrace the pump head or stand adjacent to which this power head will be located in practice; this arrangement enabling me to place the pitmen in substantially vertical position so that on the up or labor stroke they will lift directly upward and avoid causing any side thrust incident to their lifting movement.

These and other incidental objects I carry into full effect by that form of my invention which I illustrate and set forth herein, with the result that in practice this power head has proved to be very effective and efficient, acting without undue vibration and with marked smoothness, thus prolonging its life, while transmitting the power, delivered from the driving belt, to the pumping rod with economy and very great mechanical and commercial satisfaction.

In the accompanying drawings:

Figure 1 is a side elevation of my power head shown and arranged in relation to a "Myers pump", a type of pump manufactured by my assignee, F. E. Myers & Bro.;

Fig. 2 is an enlarged vertical sectional view of the power head itself;

Fig. 3 is a partial plan and horizontal view of the same; and

Fig. 4 is a detail sectional view showing the bearings for the driving shaft.

The numeral 1 indicates a "Myers pump" such as is operated by this power head. A pump rod 2 descends through the head of the pump and connects with the usual piston rod which passes down through the water pipe 3. Pitmen comprising bars 4, are connected at their upper ends with the pump rod and at their lower with the walking beam 5 of the power head, the arms 6 of which, shown best in Fig. 3, are spread apart to afford a space within which the pump head will stand in practice. This enables the pitmen to so far embrace the pump stand as to bring the point of connection between the walking beam and the pitmen 4 at a place which will position the pitmen substantially vertically.

Therefore, when the up-stroke is given the pitmen, which is the laboring or major pumping stroke, the lift will be so nearly vertical as to avoid lateral thrusts on the pump rod which, if not avoided, tend to wear the rod in the stuffing box or to bend the rod and otherwise impede its free reciprocation.

The numeral 7 designates a casing, preferably of cast iron, which constitutes the body of the power head, having feet or lugs 8 adapted to be secured by bolts 9 to the well platform 10 or other suitable base. This casing in its major portion is made of one piece, but is provided with a removable hood section 11 open at the end 12 for free up and down movement of the walking beam 5 which is pivoted to the casing on a shaft 13. The hood section 11 is flanged, as shown at 14, so as to fit within the casing and retain its position, and yet be readily removable, as occasion may require.

Within the casing a suitable lubricant is placed, so that the operative parts are all self-oiled, that is, they are oiled by reason of the motion of some of the parts through the body of the lubricant.

The walking beam is fashioned with a large slot 15 to lighten it, yet leaving ample strength in the members 16. Bearing surfaces 17 are carried by the bars or members 16 for contact with an eccentric 18 mounted on a shaft 19 of a driven gear wheel 20. When this gear wheel is rotated its shaft

revolves the eccentric and causes it to lift the walking beam on one stroke of the eccentric and to reverse it and move it downward on the other stroke. I have already stated that on the up-stroke of the walking beam the pitmen are lifted in a nearly vertical position. To this is added the slow upward movement of the walking beam by reason of the eccentric, on the up-stroke of the walking beam, acting thereon at points farther removed from the pivotal point of the walking beam, while on the down stroke the eccentric is acting on the walking beam at points nearer the pivot which gives the walking beam a more rapid descent. The eccentric turns clockwise.

A driving shaft 21 is also mounted in the casing in the manner indicated in Fig. 4 in which one end of the shaft is shown seated in a step bearing, while the body of the shaft is within a removable bushing 22 fitted in an opening in the side wall of the casing and held by suitable bolts 23. In this way, by unscrewing the bolts 23 and removing the bushing the shaft 21 and its driving pinion 24 can be readily removed. Exterior to the casing the driving shaft 21 carries a loose pulley 25 and a tight or fast pulley 26 for receiving the driving belt.

The shaft 19 of the driven gear 20, as seen in Fig. 3, is seated at one end in a step bearing 27 and at the other in an open bearing 28 where it is held by a set screw 29. By untightening the screw and withdrawing the shaft 19 the gear 20 and the eccentric can readily be removed, the shaft 13 which constitutes the pivot for the walking beam being also removed by sliding it laterally out of the casing on unscrewing one or the other of the nuts 31.

Thus it will be seen that all of the interior parts may be readily removed, should occasion require. And also that these constructions facilitate in a high degree the ready assembling of the parts in process of manufacture, an advantage which tends to economy in cost of production.

I have indicated a quantity of lubricant within the casing by means of the conventional dotted or water lines, as shown in Fig. 2.

From the foregoing description it will readily be observed that my improved power head has the advantages of high efficiency

in operation, great durability and yet marked simplicity as a whole and in respect of each of its component parts so that its manufacture is economically facilitated both as regards production of the parts and their assembly.

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

1. In a pump head, a casing having bearings for shafts and adapted to contain operating mechanism and a quantity of lubricant and having one portion open, of a hood section adapted to close said opening and fashioned with an open side to accommodate the part of the mechanism projecting beyond the casing.

2. In a pump head, the combination with a casing having one side partially open, of a hood section removably fitted in said opening and fashioned itself with an open side for the purposes set forth.

3. In a pump head, the combination with a casing having one side partially open and a hood section removably fitted in said opened portion and fashioned itself with an open side, of bearings for shafts fitted in one side of said casing, and adapted to be removed therefrom so as to permit of the insertion and removal of parts within the casing.

4. In a power-head, the combination with a casing having bearings for shafts and adapted to contain operating mechanism and a quantity of lubricant and having one portion open, a hood section adapted to close said opening and fashioned with an open side, of a walking beam projecting through and beyond the casing adapted to be actuated by the operating mechanism contained within the casing.

5. In a power head, the combination with a casing having bearings for shafts and adapted to contain operating mechanism and a quantity of lubricant and having an open portion and having an open side, of a walking beam projecting through and beyond the casing and attached to a pump standard, said beam being actuated by the operating mechanism contained within the casing.

In testimony whereof, I affix my signature.

PHILIP A. MYERS.