

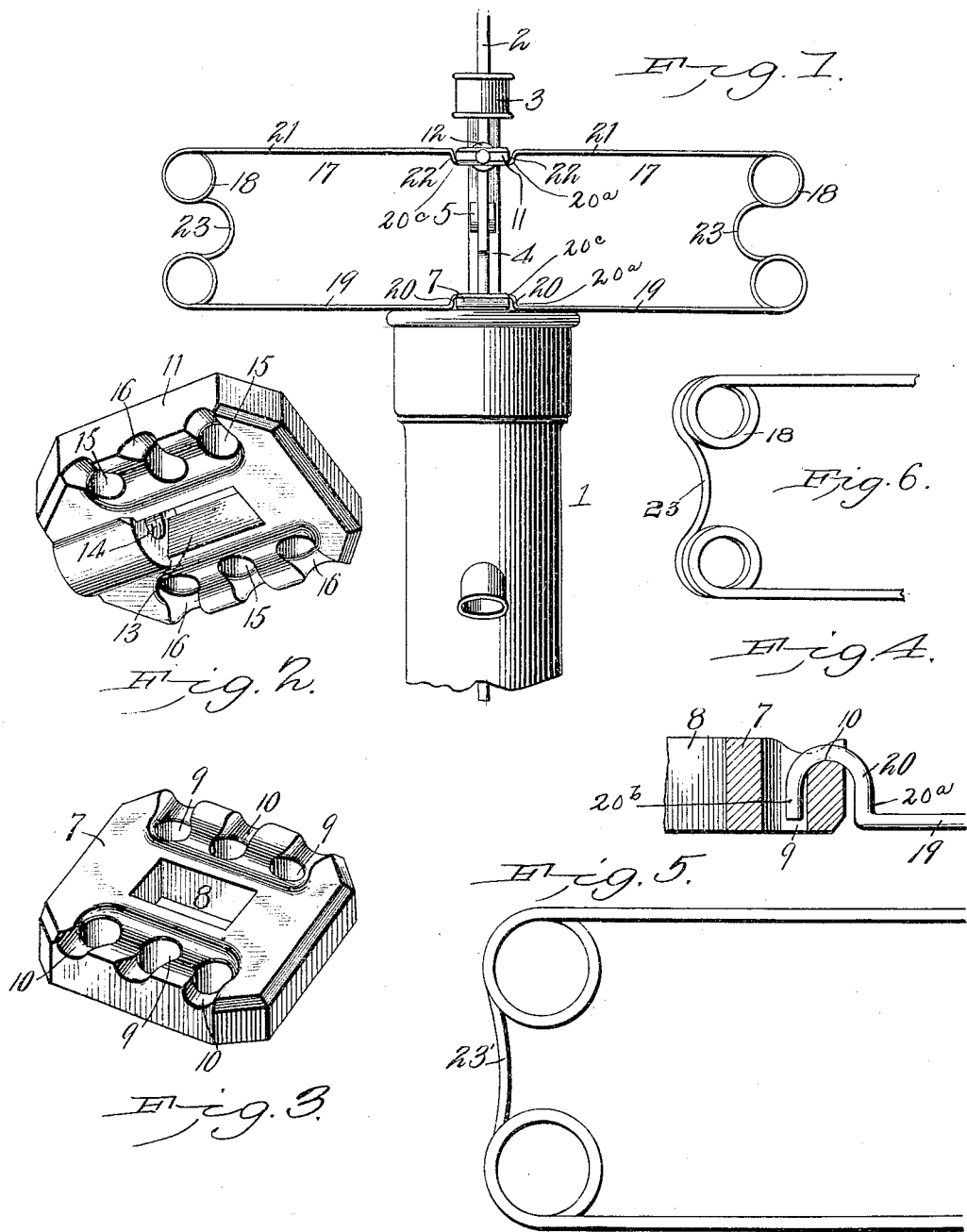
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F. G. REEVERTS.
PUMP ROD ATTACHMENT.

APPLICATION FILED JULY 25, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

FRED GEERD REEVES, OF BYRON, ILLINOIS.

PUMP-ROD ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 768,885, dated August 30, 1904.

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To all whom it may concern:

Be it known that I, FRED GEERD REEVES, a citizen of the United States, residing at Byron, in the county of Ogle and State of Illinois, have invented a new and useful Pump-Rod Attachment, of which the following is a specification.

This invention relates to an attachment for pump-rods whereby the power expended upon the up-and-down strokes of the rod may be equalized, thus obviating the jerky and uneven motion usually attendant upon the operation of such devices and assisting on the up-stroke of the pump-rod in lifting the pump-rod and the fluid that is being raised by the piston, thus facilitating the operation of the pump.

The invention has among its objects to produce a device of this class which shall possess superior advantages in point of simplicity, durability, and general efficiency, which may be readily adjusted as circumstances require, and one in which the springs which constitute an essential feature of the attachment shall be of an improved construction, whereby the spring-arms having engagement, respectively, with the pump-rod and with a supporting-plate mounted upon the pump shall be disposed in the same vertical plane, so that all tendency to lateral or side action shall be overcome, thereby avoiding the possibility of twisting the springs.

With these and other ends in view, which will readily appear as the nature of the invention becomes better understood, the same consists in the improved construction and novel arrangement and combination of parts, which will be hereinafter fully described, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation of a pump having my attachment applied thereto. Fig. 2 is a perspective view of the upper bearing member. Fig. 3 is a similar view of the lower bearing member. Fig. 4 is a detail view partly in section. Fig. 5 is a side elevation of a slightly-modified form of spring. Fig. 6 is a perspective detail view of a portion of one of the springs.

Corresponding parts in the several figures are indicated by similar numerals.

In the drawings, 1 indicates a pump, and 2

the pump-rod, which is adapted for vertical reciprocation and which may have connection with a wind-wheel. (Not shown.) The rod preferably works in a guide-bearing 3, carried by a vertical standard 4, which is connected at its lower end with the pump. The pump may be operated by means of a handle 5, pivoted to the rod and connected with the pump by a link. These parts may all be of any usual and well-known construction, and they constitute no part of the invention, which resides wholly in the attachment now to be described.

7 indicates a lower bearing member, which is preferably in the form of a plate resting upon the upper end or cap of the pump and is provided with a central opening 8, through which the pump-rod passes loosely for free working movement, said opening being shown as of rectangular form. The plate 7, which is approximately rectangular in shape is provided along opposite edges with perforations 9, the upper face of the member being provided between the openings 9 and the periphery of the plate with semicircular depressions 10, the bearing-face of which is rounded or convex, as shown in Fig. 4.

11 is an upper bearing member secured upon the pump-rod 2 by means of a set-screw 12, said member being provided with a central opening 13 for the reception of the rod and through its wall at one end of the central opening with a screw-threaded opening 14 for the reception of the set-screw, the upper and lower faces of the member being suitably enlarged at the point of passage of the set-screw. The upper member is provided with a series of perforations 15, arranged along its side edges and adapted when the parts are assembled as in Fig. 1 to register vertically with the similar openings in the lower member 7. The said upper member 11 is also provided between the openings 15 and the adjacent edges with semicircular depressions 16, the edges of which are rounded or convex in order to avoid wear either upon the plate or member 11 or upon the springs engaging the same, as will be presently described.

17 indicates a spring provided at each end of its body portion with a coil 18, both of said coils being formed at one side of the central body portion. The lower coil terminates in

an arm 19, provided at its extremity with an engaging hook 20, which is seated in one of the openings 9 of the lower bearing member, while the upper coil of the spring terminates
 5 in an arm 21, having at its extremity an engaging hook 22, seated in one of the openings 15 of the upper bearing member. The hooks 20 and 22 are U-shaped, being provided with inner and outer parallel members 20^a and 20^b,
 10 connected by the bent portions 20^c, which latter engage the semicircular depressions 10 and 16, the bent portions of the hooks being fitted to engage the rounded or convex surfaces of said depressions, while the inner hook mem-
 15 bers 20^b engage, respectively, the openings 9 and 15. Each of the hooks 20 and 22 will include between its inner and outer members a portion of the wall of the member with which it is connected, and displacement or accidental
 20 disconnection of the parts when the device is in operation will thus be rendered practically impossible. An extremely important feature of the device, however, resides in the fact that the spring-arms 17 and 19 of each spring are
 25 disposed in the same vertical plane, owing to the fact that the coils upon the body portions of the springs are disposed at the same side of said body portions, and being naturally each composed of an equal number of coils it
 30 follows that the said spring-arms will both be disposed in the same vertical plane as described. Hence during the operation of the pump there will be no tendency for the spring-arms to twist laterally, and a fruitful
 35 source of vexation and annoyance and one which frequently results in quickly displacing the springs is thus avoided.

In order to insure the best results, the hooks 20 and 21 are each disposed with their inner
 40 members 28 at right angles to the spring-arms 17 and 19, respectively. It is also to be understood that in practice any necessary number of the springs may be employed, according to the weight of the pump-rod and the
 45 conditions under which the same is operated. In the preferred form of spring (shown in Fig. 1) the body portion between the coil 18 is curved inward, as at 23, whereby there may be a certain amount of resiliency or yielding
 50 of the body member between the coils, so that the central portion will bear a portion of the strain upon the coils incident to the operation of the device.

In Fig. 5 has been shown a modified form of spring in which a substantially straight
 55 connecting portion 23' extends between the coils in lieu of the central bend 23, the spring being in other respects identical with that above described.

60 In practice downward movement of the rod 2 serves to depress the arm 21 of the spring in the direction of the arm 19, the spring being thus caused to offer resistance to the downward movement of the rod, and such resist-
 65 ance may be regulated to equalize it with the

lifting force necessary to raise the rod by varying the number of springs and coils and by adjusting the member 11 upward or downward upon the rod. It will be seen that the rod may be so balanced as to require the same
 70 amount of energy for its downstroke as for its upstroke, thus entirely obviating the usual irregular motion attendant upon the operation of this class of devices.

An important feature of the invention re-
 75 sides in the fact that each spring is provided with two coils each having an arm which extends for operative engagement with the members mounted upon the pump and the pump-rod, respectively. Each of these arms will thus
 80 have an independent coil from which it derives its power of resistance, thus rendering the movement of the arm uniform and the operation of the spring more perfect than in instances where both arms derive their force
 85 from the same coil. The spring-arms, as hereinbefore specifically pointed out, are also both located in the same plane, and the advantage of this fact has been already fully brought
 90 out in the specification.

Having thus described the invention, what is claimed is—

1. In a pump-rod attachment of the class described and which includes an upper mem-
 95 ber mounted upon and movable with the rod and a lower member through which the rod works, said members being provided with perforations near their outer edges and with de-
 100 pressions in alinement with said perforations, a spring consisting of a central or body portion, coils formed at both ends and upon the same side of said body portion, and arms ex-
 105 tending from said coils, both in the same vertical plane, said arms being provided with hooks for engagement with alining perfora-
 110 tions of the upper and lower members, respectively.

2. In a pump-rod attachment of the class described, a spring comprising a central body
 115 portion, coils formed at the ends and both upon the same side of said body portion and arms extending from said coils and in the same vertical plane, said arms being provided at
 120 their extremities with U-shaped hooks disposed at right angles to said arms, in combination with spring-engaging members connected respectively with the pump and the pump-rod, the member connected with the pump being perforated for the passage of the pump-rod and said members having hook-re-
 125 ceiving perforations and convex-faced depressions between said perforations and the edges of said members.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in
 125 the presence of two witnesses.

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Witnesses:

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 HORACE DEXTER.