E. RHODY.

PUMPING JACK.

APPLICATION FILED MAY 1, 1918.

1,288,198. Patented Dec. 17, 1918.

Fig. 1.

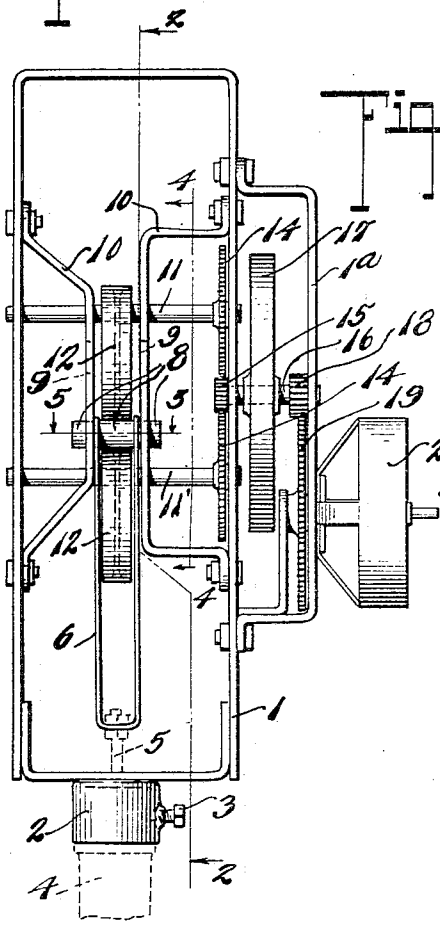


Fig. 2.

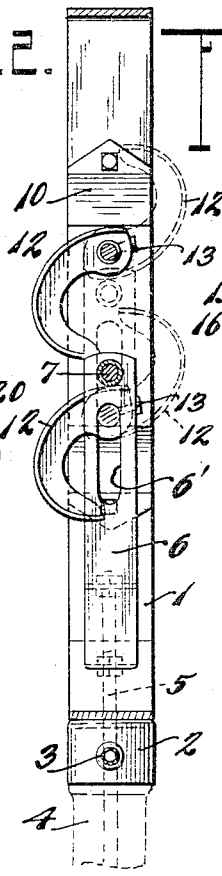


Fig. 3.

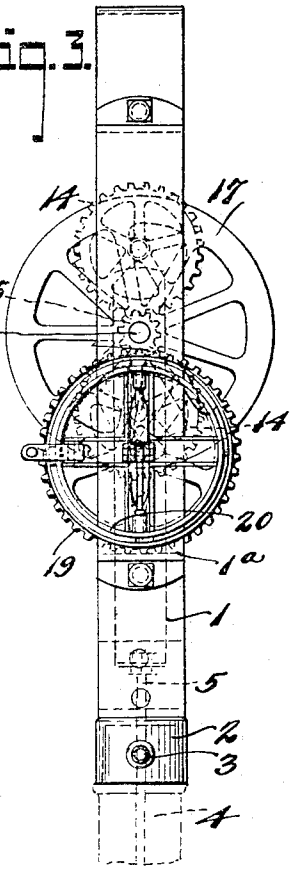


Fig. 4.

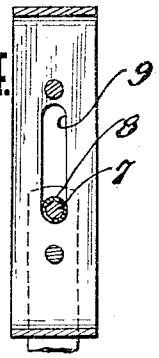
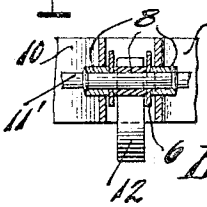


Fig. 5.



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UNITED STATES PATENT OFFICE.

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PUMPING-JACK.

1,288,198. Specification of Letters Patent. Patented Dec. 17, 1918.

Application filed May 1, 1918. Serial No. 231,925.

To all whom it may concern:

Be it known that I, ELZA RHODY, a citizen of the United States, residing at Farmland, in the county of Randolph and State of Indiana, have invented certain new and useful Improvements in Pumping-Jacks, of which the following is a specification.

The present invention relates to improvements in pumping jacks capable of being operated either manually or from a suitable source of power.

My object has been to provide a simple construction comprising rotary driving instrumentalities embodying cam elements so arranged as to impart reciprocatory motion to a pump operating element, said construction affording a very smooth action and eliminating the sudden or jerky actuation of the pump operating element as is usually the case in conventional types of pumping jacks.

With the above and other objects in view, this invention consists in the construction, combination and arrangement of parts, all as hereinafter more fully described, claimed and illustrated in the accompanying drawing, wherein:

Figure 1 is a front elevation of a pumping jack constructed in accordance with my invention.

Fig. 2 is a vertical sectional view on the line 2—2 of Fig. 1.

Fig. 3 is a side elevation; and

Figs. 4 and 5 are sectional views on the lines 4—4 and 5—5 respectively of Fig. 1.

Referring to the drawings and specifically describing the device, 1 indicates a frame which in the present instance is rectangular in shape and has at its base a socket or sleeve 2 carrying a set screw 3 by means of which the frame with its mechanism supported thereby may be mounted upon a well casing, pipe or the like indicated at 4. The usual pump rod 5 shown in dotted lines is designed to be actuated by the mechanism now to be described. Said rod is connected to one end of what I term for the purposes of this description a connecting member 6. The upper end of the last-named member is provided with a cross-head or pin 7 preferably having anti-friction rollers 8 thereon. The head projects laterally into slots 9 of brackets 10, there being one of such brackets secured to the inner side of each side member of the frame 1. Also mounted in the frames and in spaced relation to each other are upper and lower shafts 11, 11′, the latter extending through slots 6′ in the pump rod connector 6, each of said shafts carrying wiper cams or volute cams 12. The cams are secured to their respective shafts by means of set screws 13 and obviously they may be adjusted with respect to their relative positions by means of the set screws just mentioned.

At one end each of the shafts 11, 11′ carries a relatively large gear 14 and a pinion 15 arranged intermediate the two gears and meshing therewith provides for the rotation of the shafts 11, 11′ and cams mounted upon the same. The pinion 15 is carried by a short shaft 16 journaled in one side of the frame 1 and a suitable bracket 1^a, said shaft having mounted thereon a fly-wheel 17 and a further pinion 18 operable by the drive gear 19. The last-mentioned gear is suitably actuated either by a source of power or manually through the instrumentality of the clutch pulley 20, the details of the construction of which are not herein given inasmuch as they form the subject mattter of a separate application.

The operation of the device will be apparent from the foregoing description, it merely sufficing to state that the cams 12 are arranged to impinge the crosshead 7 of the connector 6 for the pump rod so as to positively move the same upwardly and downwardly, guided by the brackets 10, and the coaction of the shafts 11′ with the slots 6′ the wiping action of the cams being so adjusted that when one is about to leave the cross head the other contacts therewith for actuation of said head in the opposite direction.

The device is simply constructed and is designed to take the place of the ordinary pump in respect to the well casing or the pumping jack may be otherwise operatively connected so as to actuate the pump rod in the manner hereinbefore described.

Having thus described my invention, what I claim as new is:

1. In pumping apparatus of the class described, the combination with a pump rod, of a frame, a pump rod connector connected at one end with the pump rod and having a cross pin at its other end, guide brackets attached to the frame and slotted to receive the cross pin, cams mounted in the frame between the brackets and at opposite sides of the cross pin for impinging the latter to

impart reciprocatory motion to the connector and pump rod, and means for revolving said cams.

2. A pumping jack of the class described, consisting of a unitary structure comprising a suitable frame, adapted to be disposed in coacting relation to a pump rod, shafts mounted in said frame in spaced relation to each other, a wiper cam mounted upon each shaft, a pump rod connector having its end portion arranged intermediate the cams for impingement thereby as the said cams are operated, guide means for said connector, gear elements for actuating said shafts, and means for driving said gear elements.

3. A pumping jack of the class described comprising a frame having attaching means at its base portion, a guide bracket secured to each side of said frame and projecting inwardly thereof, cam shafts journaled in said frame, volute cams adjustably secured to said shafts, a pump rod connector arranged to move vertically between the brackets aforesaid and having a cross pin at one end slidably engaging the brackets to guide the connector, a relatively large gear mounted upon each of the shafts, and a driving pinion arranged intermediate the said gears for actuating the same and driving the cams in the same direction, and means for actuating said gear elements.

4. A pump jack attachment comprising a suitable frame having attaching means at its base, upper and lower cam shafts journaled in said frame, a pump rod connector slotted to receive one of said shafts for guiding purposes and having a cross pin at its upper end arranged between the shafts, cams on said shafts adapted to engage the pin for actuating the pump rod in opposite directions, and guide means on said frame with which the pin co-acts to sustain the connector in proper position during reciprocation.

In testimony whereof I affix my signature.

ELZA RHODY.