

1,329,137.

Fig. 1

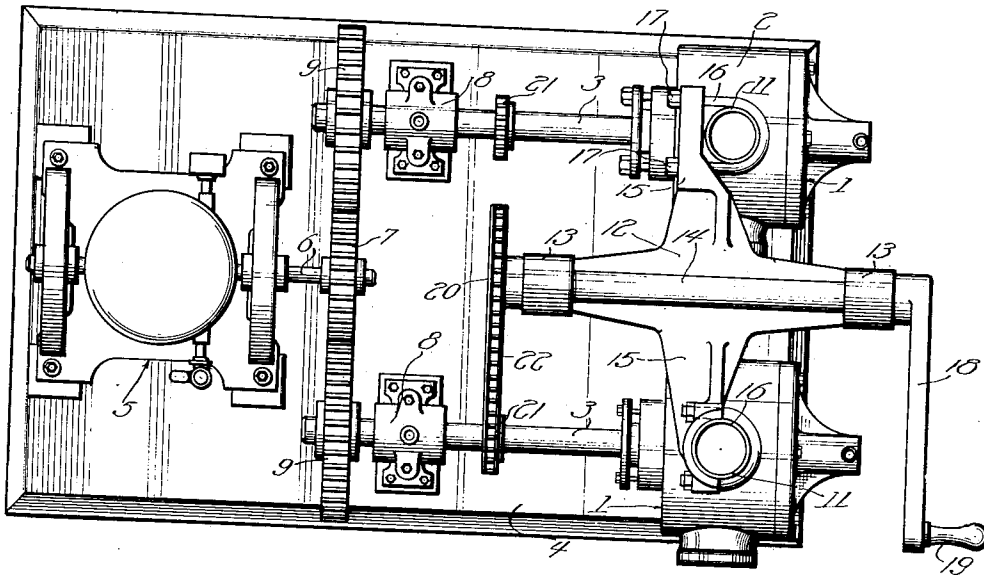
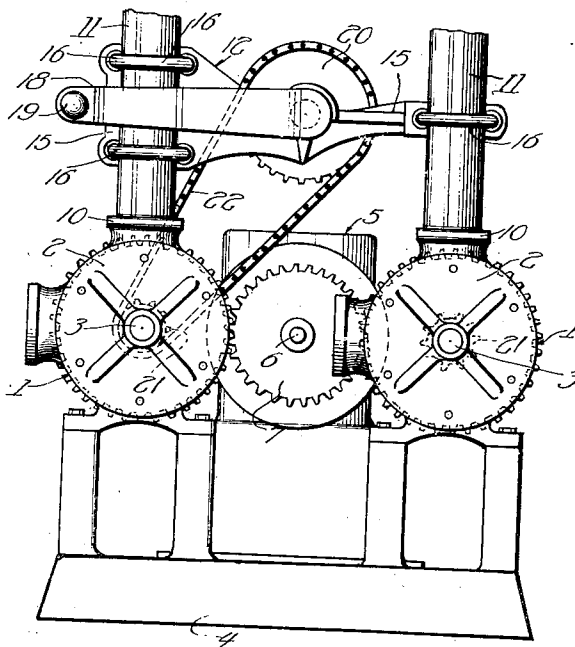


Fig. 6



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UNITED STATES PATENT OFFICE.

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HAND-OPERATING ATTACHMENT FOR PUMPS.

1,329,137.

Specification of Letters Patent.

Patented Jan. 27, 1920.

Application filed September 13, 1919. Serial No. 323,563.

To all whom it may concern:

Be it known that I, JOHN H. OLDHAM, a citizen of the United States, and a resident of Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Hand-Operating Attachments for Pumps, of which the following is a specification.

This invention relates to improvements in auxiliary operating devices for pumps and the like and more particularly to a hand operated device adapted for attachment to a motor driven pump unit whereby the unit may be manually operated in the event of failure of the motive power from breakage or other reasons.

The object of my invention is to provide an attachment of the character described which may be readily applied to and supported upon a pump or like unit, and including members which may be quickly and easily connected to permit the pump to be operated by hand. The features of my invention are hereinafter fully described and illustrated in the accompanying drawing, wherein—

Figure 1 is a view in elevation of a pump installation equipped with the device embodying the features of my invention, and Fig. 2 is a view in end elevation of the pump units and the hand operating device attached.

Referring to the drawings, the device embodying the features of my invention is illustrated in connection with a pump unit or installation ordinarily used in the pumping of liquids of various character. This installation consists of two pumps 1 preferably of the rotary type each comprising a casing 2 which contains the rotary buckets or similar elements which are mounted upon the shaft 3 which extends horizontally from one end of the pump. These pumps are mounted upon a base 4 and in parallel relation, that is to say, they are arranged side by side with the rotative shafts 3, 3 in parallel relation to each other. At the opposite end of the base 4 is an internal combustion engine 5, the same being of the ordinary stationary type and comprising a driving shaft 6 upon which is mounted a driving gear wheel 7. Securely fastened to the base 4 are shaft bearings 8, 8 which support the pump shafts 3, 3 adjacent to their outer ends. Mounted at the extreme ends

of the shafts 3, 3 are gear wheels 9, 9 which mesh with the driving gear 7 of the internal combustion motor and by means of which power is transmitted to the pump shafts. On the upper surface of each of the casings 2 of the pumps 1 are provided discharge connections 10 to which are connected discharge pipes 11, said discharge pipes extending vertically upward and in parallel relation with each other. Securely attached to the discharge pipes 11 is a frame 12, said frame comprising a member of metal extending longitudinally between the pipes 11, 11 and having at its ends bearings 13, 13 in which is supported a shaft 14. Integral with the frame are two laterally extending arms 15, 15, said arms being adapted to be connected to the pipes 11, 11 by means of a plurality of U-bolts 16. As shown in Fig. 2, one of the arms 15, namely the one extending to the right, is designed to receive a single U-bolt 16 whereas the oppositely extending arm 15 is constructed of considerably greater width and designed to receive two U-bolts 16 arranged one above the other at a considerable distance apart. The purpose of this arrangement is to afford a greater security in attaching the frame to the vertical pipes and to prevent their vertical movement thereon.

The frame is readily attached or detached by removing the nuts 17 from the ends of the U-bolts, thus disconnecting the same from the frame. Referring further to the shaft 14, which is mounted in the bearings 13, 13 of the supporting frame 12, there is provided at the outer end of said shaft a crank 18 having at its end a handle 19. At the opposite end of the crank is securely mounted on the end of said shaft 14 a large sprocket wheel 20. Fixed on each of the shafts 3 of the pumps is a smaller sprocket wheel 21, said sprocket wheels being preferably located thereon to lie substantially in the plane of rotation of the large sprocket wheel 20. Connecting the large sprocket wheel 20 and one of the smaller sprocket wheels 21 is an endless chain 22, said chain being of the ordinary type used in a sprocket wheel form of drive. The frame 12 and the crank shaft 14 are preferably designed to be attached to the pump unit in such a manner that the axis of rotation of the crank shaft is located above and substantially midway between the shafts 3, 3

of the pump. This enables the crank shaft to be connected to either shaft 3 by transferring the sprocket chain 22 from one of the sprocket wheels 21 to the other, said chain being preferably provided with suitable connecting links which will permit the chain to be readily broken and again connected in the act of transferring the chain from one of the smaller sprocket wheels 21 to the other.

By employing an attachment such as herein described in a pump unit consisting of a pump or other similar device together with a prime mover such as an internal combustion engine, it is possible to insure the continuous operation of the pump in the event that breakage occurs in the prime mover, which would otherwise interrupt the operation of the pump. In the event that the motive power fails the frame may be readily attached to the pump unit in the manner described and the chain connected to one of the sprocket wheels and thus the operation of at least one of the pumps may be continued. It is to be understood, however, that in operating one of the pumps by man power through the medium of the crank shaft 18 the internal combustion engine is disconnected from said pump by moving the driven gear wheel 9 of the hand-operated pump endwise in such a manner as to disengage said gear wheel from the driving gear wheel 7. Obviously, the hand-operating attachment may be permanently connected to the pump unit in the manner shown with the sprocket chain 22 removed, hence the attachment will be inoperative while the pumps are normally operated by the internal combustion engine, and, in the event of interruption in the motive power the hand-operating attachment will be in readiness to operate either of the pumps by applying the sprocket chain to the small sprocket wheel 21 of the pump desired to be operated.

Although I have shown and described a particular form of the device embodying the features of my invention, it is to be under-

stood that the same may be variously modified without departing from the spirit of the invention. Therefore, I do not wish to be limited except in so far as my invention is specifically set forth in the appended claims.

I claim as my invention:

1. In a pump unit, the combination of a plurality of pumps comprising pump shafts arranged in parallel relation, a prime mover operatively connected with said pumps, a supporting frame adapted to be removably attached between said pumps, a manually operable crank shaft journaled in said supporting frame, and means for operatively connecting said crank shaft with either of said pumps.

2. In a pump unit, the combination of a plurality of pumps provided with shafts, a prime mover operatively connected with said pumps, a manually operable crank shaft, a supporting frame therefor adapted to be attached intermediate said pumps, a sprocket wheel mounted on said crank shaft, sprocket wheels mounted on said pump shafts, a chain carried by the sprocket wheel of said crank shaft, and to be connected to either of said sprocket wheels on said pump shafts.

3. In a pumping unit, the combination of a plurality of pumps comprising rotative pump shafts arranged in parallel relation and discharge pipes communicating with said pumps, a prime mover, normally in driving connection with said pumps, a supporting frame having a manually operative crank shaft journaled therein and adapted to be removably clamped between said pipes, driving members carried by said pump shafts, and means for operatively connecting said crank shaft with either of said driving members to effect the operation of said pumps by said crank shaft.

In witness whereof I hereunto subscribe my name this tenth day of September, A. D., 1919.

JOHN H. OLDHAM.