This invention relates to band wheels or other driving gear for pumps and has for its object to provide a counter-balanced construction which will actually cushion and counter-balance the up and down motion of the sucker rod in the well.

A further object of the invention resides in such a construction in which the counter-balancing weights may be varied in order to meet practical conditions in a particular well.

Another object of the invention consists in the provision of means which will relieve the wheel structure of much of the centrifugal force caused by the counter-balancing weights on the band wheel.

Other objects and advantages of the invention will be apparent from the following description when taken in connection with the accompanying drawings, in which:

Figure 1 is a side elevation of one embodiment of the invention applied to a band wheel, and;

Figure 2 is an enlarged section taken on the line 2—2 of Fig. 1.

Referring to the drawings in greater detail the numeral 1 indicates the axle of the band wheel or other driving gear 2, and which may be mounted in any conventional type of bearings (not shown) supported above the well pump.

In the present embodiment of the invention the wheel 2 is provided with a wide smooth tread 3 on which is mounted a band or belt 4 which is operated from any suitable source of power (not shown). It will be understood of course, that a gear wheel and chain may be substituted for these elements if found desirable.

Associated with the wheel 2 is a crank or arm 5 with which a pitman 6 is adjustably connected. This pitman is, of course, operatively connected with the polish or sucker rod of the pump in the usual manner.

One of the difficulties encountered in operating pumps is that unless the sucker rod is reciprocated rather slowly the same will be broken due to the sudden strains or jars placed thereon by the operating mechanism. By the present construction about to be described these sudden strains are substantially eliminated by a novel arrangement of weights associated with the crank arm.

A pair of counter-balance weights 7 are connected to one or both faces of the band wheel by means of bolts 8, and are each composed of a plurality of L-shaped sections 9 which may be stacked one upon another until sufficient weight for the particular pump is supplied. When the proper number of sections are applied to the wheel the bolts 8 are inserted through the holes provided for that purpose and the counter-balance thus locked to the wheel.

Obviously, considerable centrifugal force is generated when the wheel, which is sometimes composed of wood, rotates rapidly, therefore, it has been found desirable to provide means to eliminate this strain from the wheel. To this end a tie rod 10 is provided which has its respective ends anchored in the short arms 11 of the L-shaped weights and its intermediate portion encircling a portion of the axle 1, whereby transmitting the centrifugal force to the axle and relieving the strain on the wheel 2 and bolts 8.

From an inspection of Figure 1 of the drawings it will be observed that the weights 7 are disposed adjacent each side of the crank arm 5 and thereby provide the maximum effect in counter-balancing the sucker rod and in cushioning and counter-balancing the pull of the up and down movement of the sucker rod in the well casing. Thus it will be apparent that sudden strains or jars on the sucker rod are obviated.

From the foregoing description taken in connection with the accompanying drawing it will be seen that an exceedingly simple construction of band wheel has been devised in which the counter-balance weights are arranged so as to eliminate strains on the well mechanism, that the counter-balance weights are so constructed that they may be varied to suit varying conditions in operation, and that the centrifugal force generated by the weights is transmitted to the axle so as to relieve the wheel and related parts from the strain.

In accordance with the patent statutes I have described what I now believe to be the best embodiment of the invention, but I do not wish to be understood thereby as limiting myself or the scope of the invention, as many changes and modifications may be made without departing from the spirit of the invention; all such I aim to include in the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent is:

1. A pump jack for wells including a
2. A pump jack for wells including a wheel mounted for rotation, a crank associated therewith, a pair of counter-balance weights connected to said wheel adjacent to said crank and disposed on opposite sides of the latter, and a tie rod connecting said weights and encircling a portion of the wheel axle.

3. A pump jack for wells including a wheel mounted for rotation, a crank associated therewith, a pair of counter-balance weights connected to said wheel adjacent to said crank and disposed on opposite sides of the latter, and a tie rod connecting said weights and encircling a portion of the wheel axle.

CHARLES PAGGI.