Sept. 9, 1930. C. EURIT 1,775,390

OIL WELL PUMPING AND DRILLING RIG

Filed Feb. 8, 1929

Fig. 1.

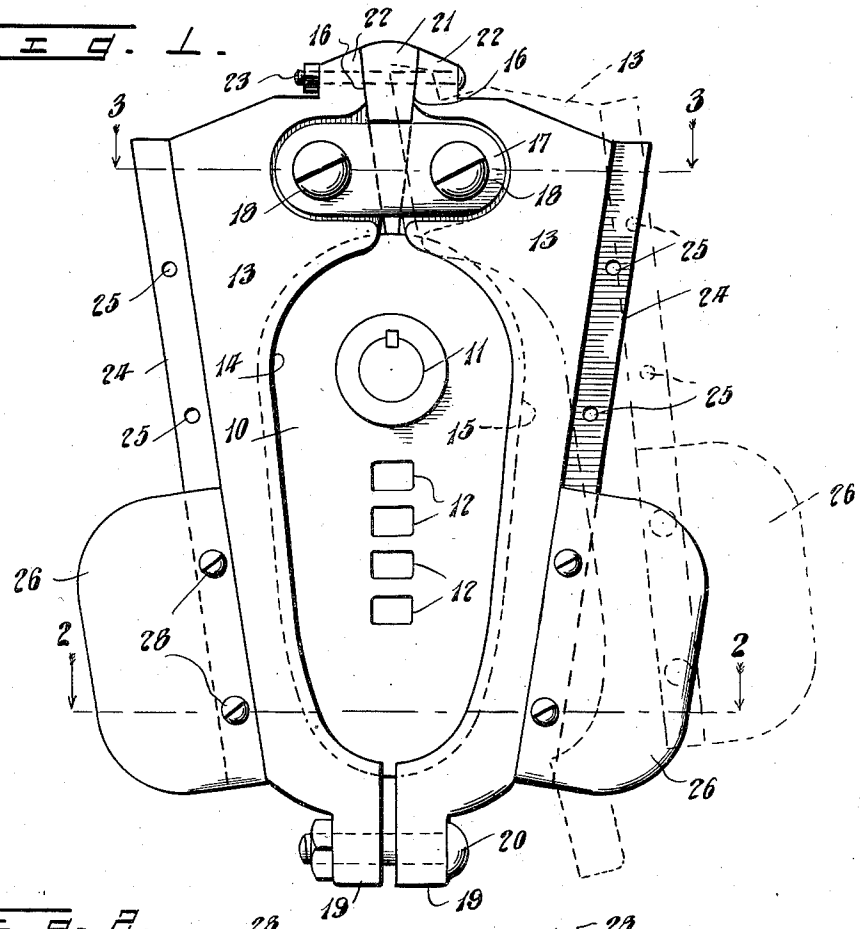


Fig. 2.

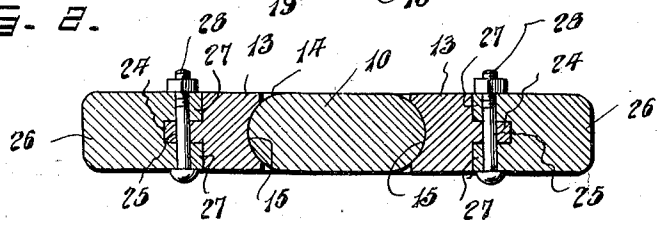
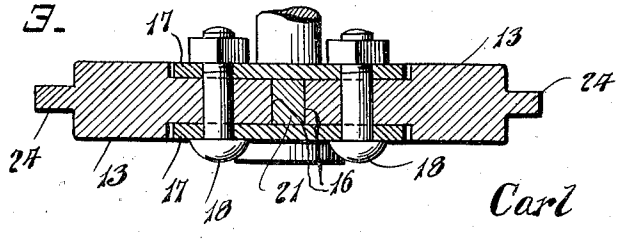


Fig. 3.



Inventor
Carl Eurit.

By U. S. J. Dunbar

Attorney

Patented Sept. 9, 1930 1,775,390

UNITED STATES PATENT OFFICE

CARL EURIT, OF TULSA, OKLAHOMA

OIL-WELL PUMPING AND DRILLING RIG

Application filed February 8, 1929. Serial No. 338,494.

This invention relates to oil well pumping and drilling rigs, and more particularly to a means for counterweighting the crank arms of pumping rigs to counterbalance the weight of the sucker rods and thus enable a smoother and more efficient operation of the rig.

Counterweights for oil well pumping apparatus are in fairly common use and have assumed a number of forms. All of these with which I am familiar, however, are carried by or directly associated with the walking beam of the pumping apparatus. As these counterweights must be made of very considerable weight and must be removed at each time that the rig is changed from pumping to drilling or cleaning, they become considerable of a nuisance at times and often require the services of three or four men at the well where one would ordinarily prove sufficient. Furthermore, a weight placed upon the walking beam is difficult to position and adjust and is, for this reason, objectionable. An important object of this invention is to provide a device of this character which may be directly applied to the crank arm and which is of such construction that it may be very readily adjusted to vary the effective weight provided to counterbalance the rod weight.

A further object of the invention is to produce a device of this character which, when applied to the crank arm, will be very firmly and securely held thereon and will have no tendency to separate therefrom and which, at the same time, may be removed as a unit whenever its complete removal becomes necessary.

These and other objects I attain by the construction shown in the accompanying drawings, wherein for the purpose of illustration is shown a preferred embodiment of my invention and wherein:—

Figure 1 is a front elevational view of the counterweight operatively engaged with the crank arm;

Figure 2 is a transverse sectional view taken on line 2—2 of Figure 1; and

Figure 3 is a similar view taken on line 3—3 of Figure 1, looking in the direction of the arrows.

Referring now more particularly to the drawings, the numeral 10 generally designates a crank arm having the usual shaft receiving opening 11 and a plurality of openings or sockets 12 for the interchangeable reception of a crank pin (not herein shown). Such crank arms usually have their side and end edges slightly rounded, as more clearly shown in Figure 2. In accordance with my invention, I provide a yoke formed in two similar ssections 13 combining when in assembled relation to produce a central opening 14 of slightly less size than the overall size of the arm. The inner edges of the yoke sections are channeled, as at 15, to receive the side and end edges of the arm so that when the sections are clamped together upon the arm, the yoke will be very firmly held against displacement with relation thereto. At their upper ends, the sections of the yoke have their adjacent faces 16 spaced from one another to provide a gap therebetween, and this gap is bridged at opposite faces of the sections by links 17 connected to the sections by pivot bolts 18 about which the section may swing. The opposite ends of the sections are provided with opposed ears 19 through which is directed a clamping bolt 20. With the clamping bolt 20 in position, the sections will be very firmly held upon and clamped against the arm, but with this bolt removed, the sections may swing about the pivot bolts 18, so that the yoke may be bodily withdrawn from the arm by a hoist. At this time, the links 17 may act as a convenient attaching point for a grapple or other means of supporting the yoke during the withdrawing operation.

In order to prevent accidental separation of the yoke from the arm in event the bolt 20 should become loose and fall from its position I provide a block 21 preferably in the form of a wedge.

This wedge tightly fits against the adjacent faces 16, and while in position therebetween, effectually prevents any pivotal movement of the sections. Accidental displacement of this block may be prevented in any suitable manner, the sections in the present instance being disclosed as provided with ears 22 opposing the side faces of the block and a bolt 23 being shown as extended through these ears and the

block. By removing this bolt, the block 21 and bolt 20, the assemblage can be removed from the crank arm as a unit.

Each section 13 has upon its outer face a longitudinally extending rib 24 having a series of uniformly spaced openings 25 formed therein. Counterweights 26 are provided, each having at least one rib 27 for opposition to the associated rib 24 which is to be held thereto by bolts 28 passing through openings in the ribs 27 and 24. In the present instance, the counterweights 26 are shown as each provided with a pair of parallel ribs 27 in which the ribs 24 interdigitate.

It will be obvious that with a construction of this character, the counterweight may be very readily applied and removed and the effective weight thereof may be very readily regulated by adjustment of the weights 26 longitudinally of the arm.

It will also be obvious that the construction hereinbefore set forth is capable of a certain range of change and modification without materially departing from the spirit of the invention and I accordingly do not limit myself to such specific structure except as hereinafter claimed.

I claim:—

1. In combination with a crank, a yoke embracing the crank and coplanar therewith, counterweights adjustable longitudinally of the sides of the yoke, said yoke being formed in two sections, a pivotal connection between the sections at one end, a securing means connecting the opposite ends thereof.

2. In combination with a crank, a yoke embracing the crank and coplanar therewith, counterweights adjustable longitudinally of the sides of the yoke, said yoke being formed in two sections, a pivotal connection between the sections at one end, a securing means connecting the opposite ends thereof, and removable means engaging the yoke at the pivotal connection of the sections preventing pivotal movement of the sections when said securing means is removed or displaced.

3. In combination with a crank, a yoke embracing the crank and coplanar therewith, counterweights adjustable longitudinally of the sides of the yoke, said yoke being formed in two sections, a pivotal connection between the sections at one end, a securing means connecting the opposite ends thereof, the pivotal connection between the sections maintaining adjacent faces thereof at the connection in spaced relation to one another, and a block inserted between the faces of the sections at the pivotal connection and secured thereto.

In testimony whereof I affix my signature.

CARL EURIT.