

J. E. VILKIE.

ANTIFRICTION ECCENTRIC.

APPLICATION FILED SEPT. 26, 1910.

1,018,142.

Patented Feb. 20, 1912.

FIG. 1.

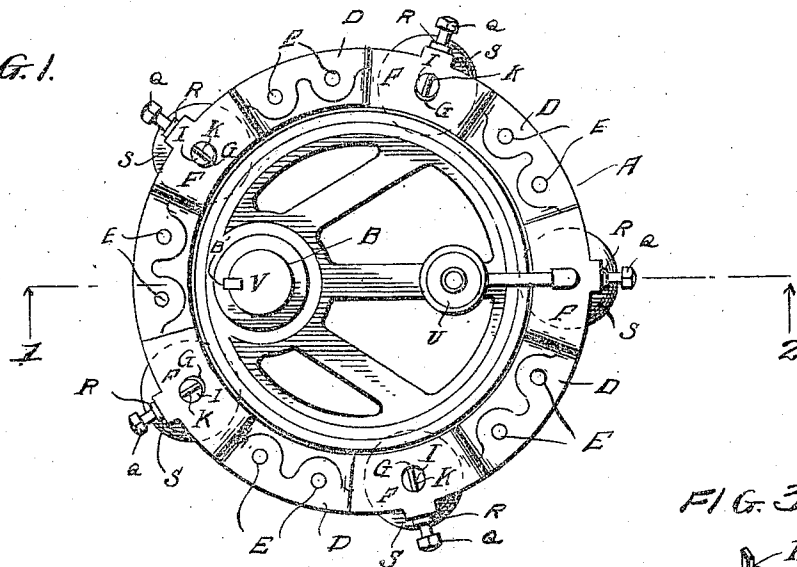


FIG. 3.

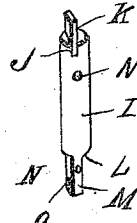


FIG. 2.

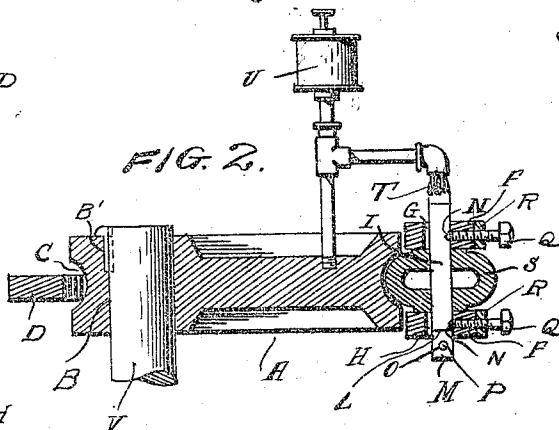


FIG. 4.

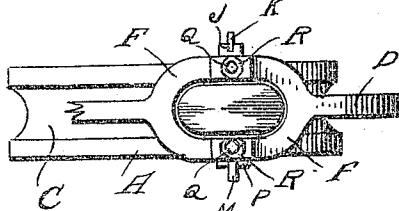
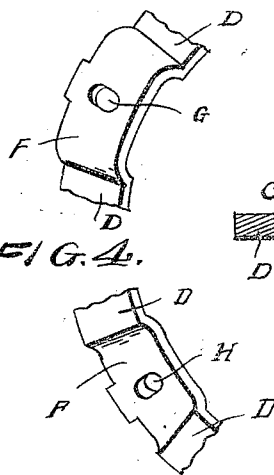


FIG. 5.

WITNESSES

A. H. Davis
M. E. Moore

Joseph E. Vilkie
INVENTOR

By *Charles H. Moore*
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH EUGENE VILKIE, OF TITUSVILLE, PENNSYLVANIA.

ANTIFRICTION-ECCENTRIC.

1,018,142.

Specification of Letters Patent.

Patented Feb. 20, 1912.

Application filed September 28, 1910. Serial No. 533,351.

To all whom it may concern:

Be it known that I, JOSEPH EUGENE VILKIE, a citizen of the United States, a resident of the city of Titusville, in the county of Crawford and State of Pennsylvania, (whose post-office address is No. 116 Bank street,) have invented new and useful improvements in the design and workings of oil-wells and connecting the same to the oil-well-pumping power-machine or other device used in the transmission of power, wherein a reciprocating motion is required to be distributed to several distant points located in different directions, by means of rods, wires, or cables leading from the power-house, where the oil-well-pumping power-machine or similar device is stationed and connected to the pumping apparatus at the several wells, of which the following is a specification.

My invention relates to that class of eccentrics, which are used in connection with the oil well pumping power machines, so called, now used so extensively on oil properties; where it is desirable to pump a number of oil wells from the power generated by one engine; and the same is applicable to similar machines or devices, used in the transmission of power, where a reciprocating motion is required to be distributed as set forth above.

The object of my invention is to overcome and minimize the loss of power through the excess of friction due to the attrition of parts; together with the unnecessary strain upon the pumping power machine, or other device, caused by the jerking motion of the connecting rods, where the old style eccentric wheel and ring are in use. I refer to that type of eccentric wheel having an extension in the outer rim near the bottom, extending outward from the face, which serves as a support, on which the ring rests, the inner face of said ring being fitted to the outer face of the eccentric wheel above said support.

In my improved eccentric, I accomplish the objects set forth, by using in combination: an eccentric wheel having a groove in the outer face of the rim, so shaped, that it conforms to the contour of adjustable wheel bearings, for which the said groove serves as a runway and support; so that an odd number of the wheel bearings, three or more, I prefer five, being placed in position, prop-

erly assembled and adjusted in conjunction with the outer ring, and balanced by the proper arrangement of swivels or other device, used in connecting the rods, wires or cables, leading to the several wells; the revolving of the eccentric wheel keyed to the vertical shaft of the pumping power machine, working in conjunction with the wheel bearings and the outer ring, causes a steady reciprocating motion, on each connecting rod in turn, of sufficient forward, backward, and lateral swing, to insure the proper stroke required to pump each well, or other device connected thereto.

In the drawings hereto attached and made part hereof: Figure 1, is a top section view showing the general appearance of my improved eccentric with the several parts assembled in position. Fig. 2, is a cross section view on the line 1, 2, in Fig. 1, showing the method of assembling the several parts of each adjustable bearing in the elliptical shaped supports of the outer ring, the groove in which the wheel bearings rotate, the arrangement of a suitable oiling device, and the relative position of the vertical shaft of the power machine. Fig. 3, shows the component parts of each of the adjustable wheel bearings. Fig. 4, shows the shape of the adjusting slots in the top and bottom portions of the outer ring, which serve as elliptical shaped supports for each of the adjustable bearings. Fig. 5, is a sectional view of the outer face of my improved eccentric, showing the grooved runway in the face of eccentric wheel; together with a portion of the outer ring which shows one member of the wheel bearings assembled in position.

Similar letters refer to similar parts throughout the several views.

The eccentric wheel A, having hole B, and key seat in the hub fitted to receive the large shaft of the pumping power machine see Fig. 1, and Fig. 2, and having a groove in the outer face C; so shaped, that it conforms to the contour of, and serves as a runway for the wheel bearings S, which revolve around the small shafts I, having a shoulder L, near the bottom, which rests upon the inner face of the bottom portions of the elliptical shaped supports F, (see Fig. 3, and Fig. 5,) in the outer ring D, and a rectangular extension M, through which the hole O, (see Fig. 2,) is drilled near the end, to receive a cotter pin P, designed to hold the

small shaft in position; the said small shaft I, having two conical recesses N, in the outer face, in line with and fitted to the convex points of set screws Q, held in place by lock nuts R, (see Fig. 2, and Fig. 3,) to provide for the necessary adjustment of the same in the slots G and H, in the elliptical supports F, (see Fig. 2, and Fig. 4,) and being equipped with a slot J, in the top of each small shaft I, in which a thin metal wiper K, is inserted, (see Fig. 3,) the latter at each revolution of the eccentric wheel A, coming in contact with the wick T, attached to the oiling device U, (see Fig. 2,) insures the proper lubrication of the several parts, when sufficient lubricant is supplied, and the whole properly assembled is attached in position to the vertical shaft of the oil well pumping power machine or other device, and the motive power is applied.

The letter A designates the eccentric wheel as a whole, having the opening B and the key seat B' in the hub adapted to receive the large shaft V connected to a suitable driving source. The wheel A has the grooves C in its outer faces conforming with in contour and serving as a runway for the rollers S, secured upon the rims D, mounted as at E upon the wheel A, and the rims D are suitably bent to form the elliptical recesses F therein, which serve as a housing or casing for said rollers S. Passing through said elliptical recesses F and adjustably mounted in slots G and H in said rims D are the shafts I, having the lower shoulders L resting upon the inner faces of the said recesses F, and the rectangular extensions M having openings O drilled therein near one end to receive cotter pins P, designed to retain the said shafts in position. It will be understood that the rollers S are mounted upon said shafts I and are rotatable to the elliptical recesses F of the rim D, and to provide for the adjustment of the said shafts in the slots G and H, the shafts have the two conical recesses N in their outer faces, alining with and fitted to the convex ends of the set screws Q, which are held in place above and below said rollers S by means of the lock nuts R.

To insure the proper lubrication of parts, I provide each shaft I with a slot J, having

a thin metal wiper K inserted therein and adapted to contact with the wick T of an ordinary oiling cup and pipe U, at each revolution of the eccentric wheel A.

I am aware that prior to my invention, eccentric wheels operating in conjunction with outer rings, also that oiling devices of the same or similar pattern as shown have been made and used. Therefore I do not claim such a combination broadly; but

I claim:

1. In a device of the character described, the combination with the eccentric wheel, the slotted rims having elliptical recesses formed therein, the rollers revolubly mounted in said recesses, and the slotted shafts upon which the rollers are mounted adjustable in the slots in said rims, said shaft having the conical recesses in its outer face, the shouldered portion adapted to rest upon the lower portion of the recesses in said rims, the rectangular extension having the opening therein for the reception of the cotter pin for securing the shaft, and a wiper mounted in said slot in the shaft and adapted to contact with a suitable oiling device.

2. In an eccentric wheel, the combination with the slotted rims having recesses therein, and the rollers revolving in said recesses, of slotted shafts passing through said slotted rims and carrying said rollers, wiper plates on said shafts adapted to contact with a suitable lubricating device, shouldered portions near the lower ends of said shafts, downwardly extending rectangular portions having openings therein, pins passing through said openings, and means for adjustably securing said shafts in position.

3. The combination in an eccentric of the wheel, the slotted recessed rims, the rollers in said recesses, the slotted shafts carrying said rollers, the securing means for said shafts, the oil cup mounted above said eccentric wheel, the pipes leading therefrom, the wicks secured upon the ends of the pipes, and the wipers secured in the slots in said shafts contacting with said wicks.

JOSEPH EUGENE VILKIE.

Witnesses:

J. E. MURRAY,
E. J. VINOPAL.