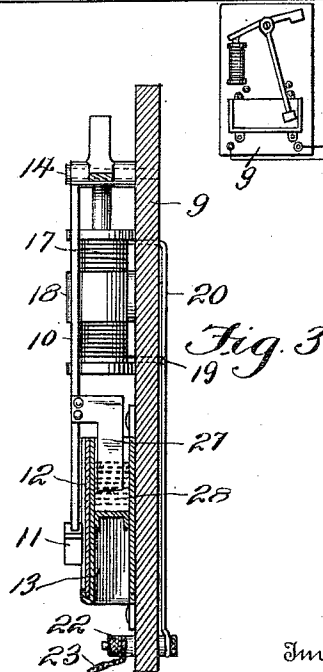
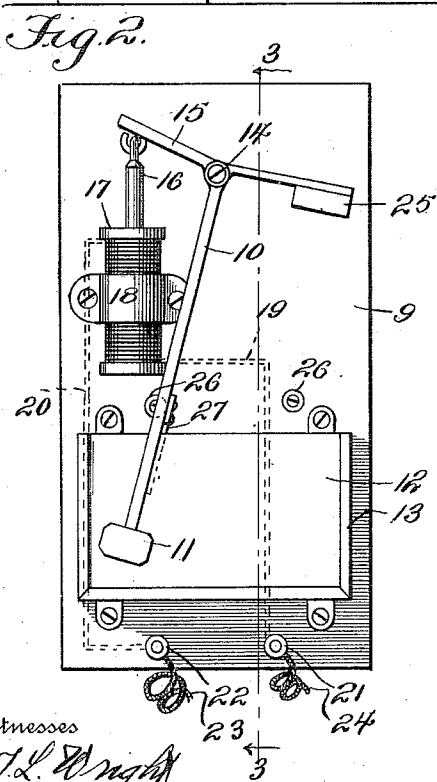
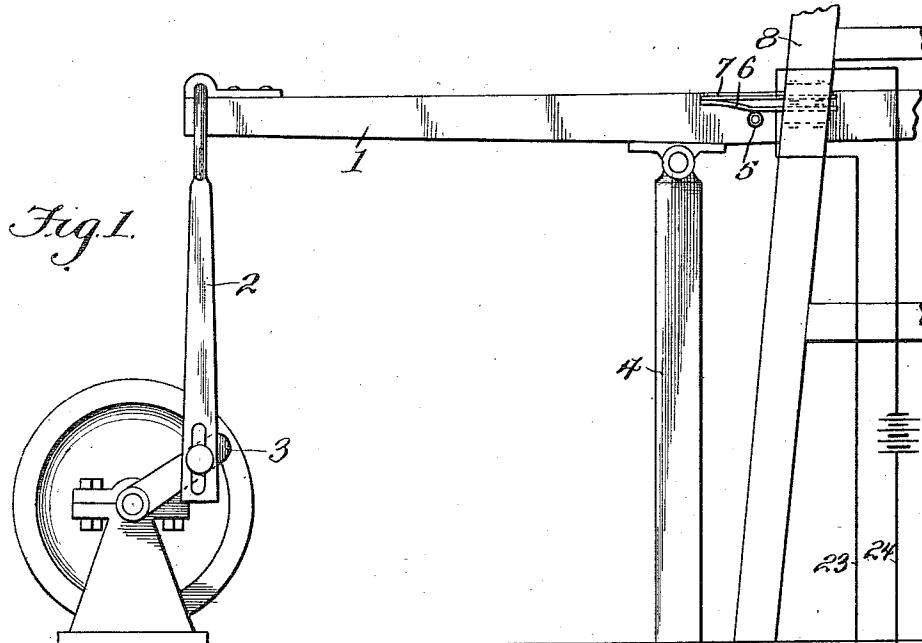


E. W. BISHOP.
ELECTRICAL INDICATOR.
APPLICATION FILED APR. 26, 1910.

994,712.

Patented June 13, 1911.



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EDWARD W. BISHOP, OF BAKERSFIELD, CALIFORNIA.

ELECTRICAL INDICATOR.

994,712.

Specification of Letters Patent. Patented June 13, 1911.

Application filed April 26, 1910. Serial No. 557,774.

To all whom it may concern:

Be it known that I, EDWARD W. BISHOP, a citizen of the United States, residing at Bakersfield, in the county of Kern and State of California, have invented new and useful Improvements in Electrical Indicators, of which the following is a specification.

This invention relates to an indicating device adapted especially for use in well pumps of that type including walking beams, and is designed to enable the attendant to determine how the different pumps are operating without having to personally inspect the various pumps.

The invention has for one of its objects to provide an extremely simple, practical, and inexpensive device of this character, and one which can be readily applied to any pump structure now in use.

Another object of the invention is the provision of an indicator including an oscillatory hand which is electrically operated each time a walking beam oscillates, there being a circuit closer at the walking beam which closes and opens the circuit by the movement of the walking beam.

With these objects in view, and others as will appear as the description proceeds, the invention comprises the various novel features of construction and arrangement of parts which will be more fully described hereinafter and set forth with particularity in the claims appended hereto.

In the accompanying drawings, which illustrates one embodiment of the invention, Figure 1 is a fragmentary view of a walking beam and operating mechanism, and the indicating apparatus. Fig. 2 is an enlarged view of the indicating device. Fig. 3 is a sectional view taken on the line 3—3.

Similar reference characters are employed to designate corresponding parts throughout the several views.

Referring to the drawings, 1 designates an ordinary walking beam for oil wells which is connected by a pitman 2 with a crank arm 3, the walking beam being fulcrumed on a post 4. On the walking beam is a projecting member 5 which is adapted to engage a spring contact 6 to move the latter into engagement with another contact 7. These contacts form a circuit closer which make and break the circuit of the indicating device. These contacts are mounted on a suitable part of the derrick 8 of the well and are brought into engage-

ment with each other at the time the crank arm 3 has passed the upper dead center about one eighth revolution, and the circuit is maintained closed until the crank arm is about one eighth revolution from the upper dead center on the approach side thereof.

The indicator comprises a supporting plate 9 arranged within the boiler house or any other convenient place close to or remote from the well, as occasion requires, and on this plate is pivoted an arm or lever 10 that carries a target 11 which moves back and forth and in front of a white background or card 12 disposed in a holder 13 secured to the support 9. The target carrying arm 10 is pivoted at 14, and has a short laterally extending arm 15 which carries a solenoid core 16. This core moves back and forth in the hollow of a solenoid coil 17 secured to a bracket 18 to the plate 9. The coil is connected by wires 19 and 20 to binding posts 21 and 22 respectively, and between these binding posts and spring contacts 6 and 7 are conductors 23 and 24. Hence when the circuit is completed the solenoid will be energized so as to cause the core 16 to be drawn into the solenoid and thereby swing the vane to the right. The opposite movement of the vane is effected by a counter-balanced weight 25 secured to the arm or lever 10. The swinging movement of the said arm is limited by space stops 26 on the plate 9.

In order to retard the movement of the vane carrying arm the same is provided with a blade 27 which moves back and forth in a trough 28 that contains oil or other fluid, and by means of this retarding device the vane will move gradually from one position to the other.

With an indicating device of this character the engineer can observe at a glance whether or not the pumps are properly operating since the targets of the various indicators will move back and forth in synchronism with the oscillations of the walking beams.

From the foregoing description taken in connection with the accompanying drawings, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention relates, and while I have described the principle of operation of the invention, together with the device which I now consider to be the best embodiment

thereof, I desire to have it understood that the device shown is merely illustrative and that such changes may be made when desired as are within the scope of the claims.

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

1. In an indicating device of the class described, the combination of a support, a swinging element mounted thereon, a position-indicating means over which the element moves, means for actuating the element, a trough disposed behind the first-mentioned means, and a member secured to the element and extending into the trough
10 to retard the movement of the element.
15

2. In an indicating device of the class described, the combination of a support, a swinging element mounted thereon, a position-

tion-indicating means located behind the free end of the element and over which the latter moves, an electrical device responsive to current for moving the element from its normal position, means for opposing the movement of the element and returning the latter to normal position when the said device is deenergized, a trough disposed behind the said position indicating means, and a member rigid on the element and extending into the trough for retarding the movement of the element. 20 25 30

In testimony whereof I affix my signature in presence of two witnesses.

EDWARD W. BISHOP.

Witnesses:

K. A. ERICSON,
MAX FLEISCHMAN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
