

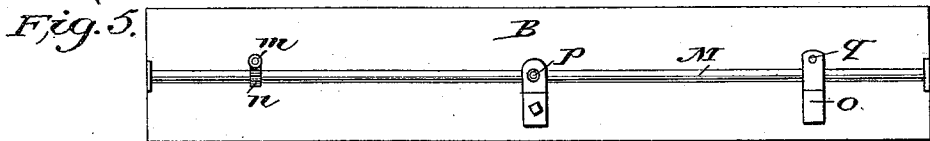
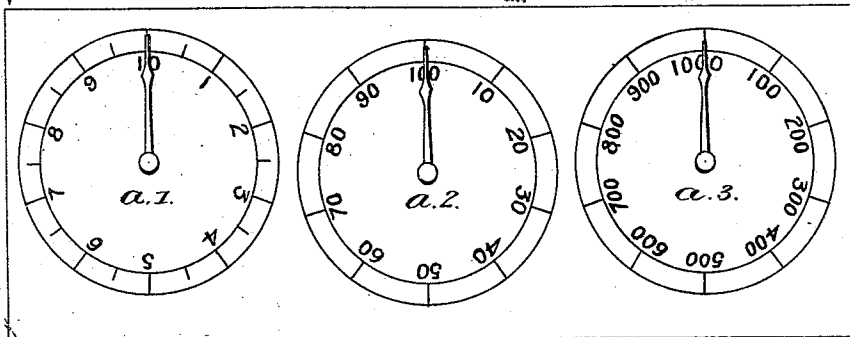
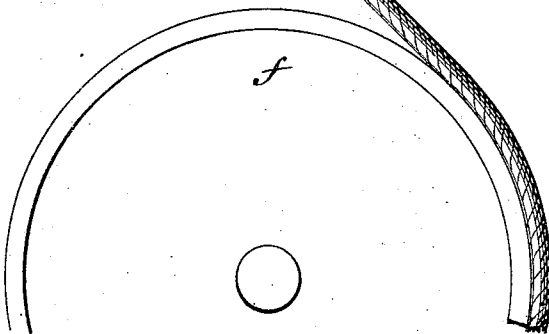
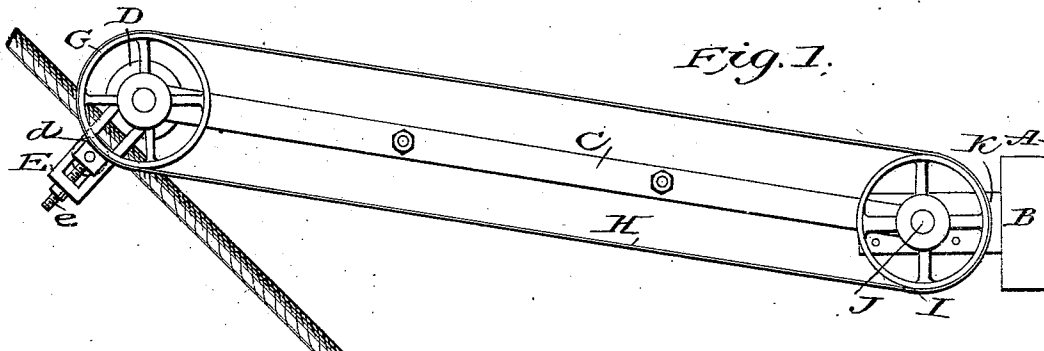
(No Model.)

2 Sheets—Sheet 1.

C. JOHNSON.
INDICATOR FOR HOISTING WORKS.

No. 554,782.

Patented Feb. 18, 1896.



Witnesses.

John L. Rand
Will R. King

Fig. 6.

per

Inventor.

Charles Johnson
Arthur Philbrick
Attorney

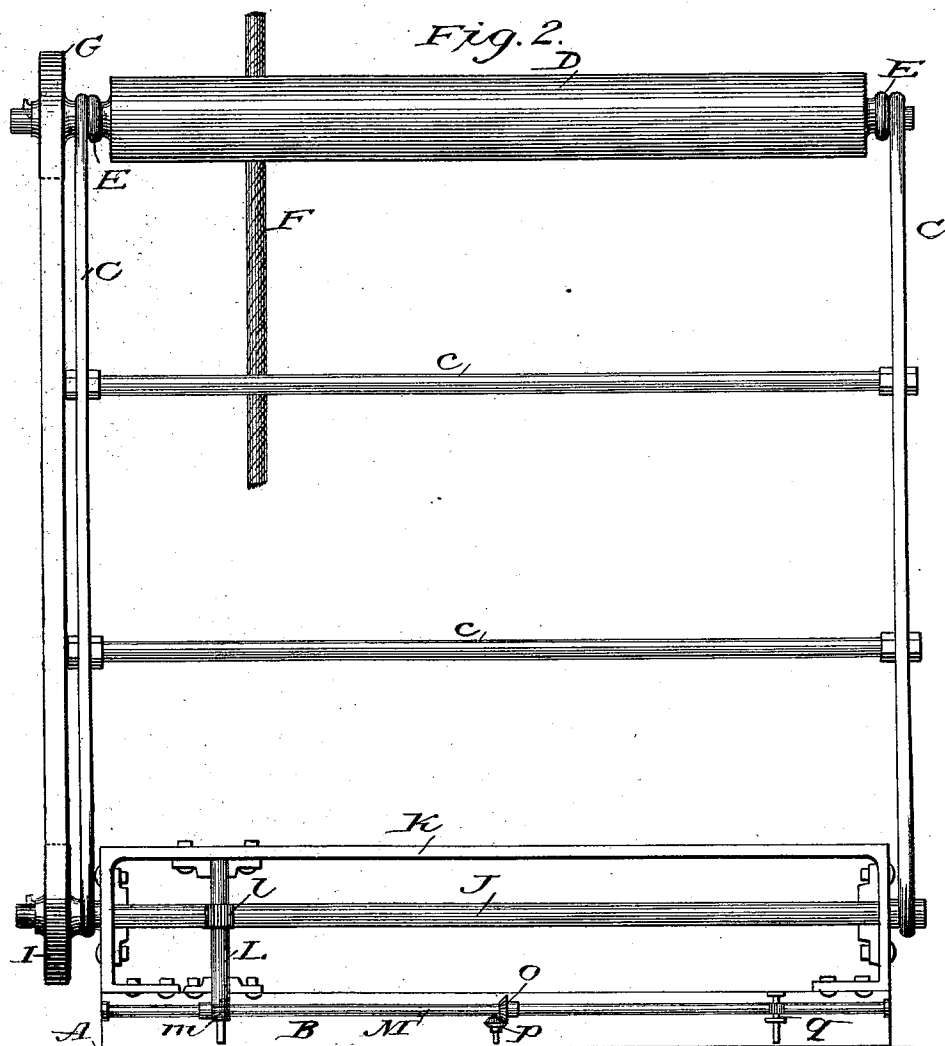
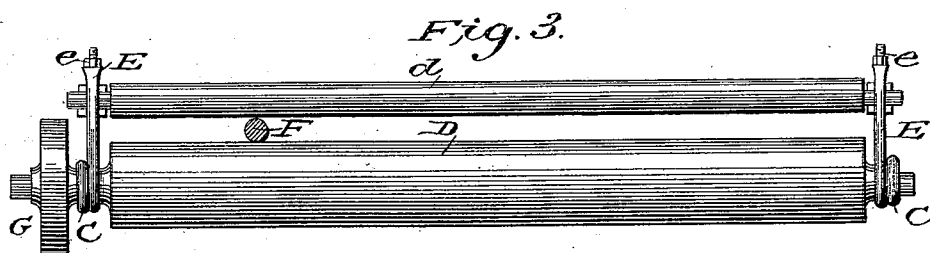
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INDICATOR FOR HOISTING WORKS.

No. 554,782.

Patented Feb. 18, 1896.



Witnesses:
John R. Paul
Will R. King

Inventor:
Charles Johnson
per Arthur Philbrick
Attorney.

UNITED STATES PATENT OFFICE.

CHARLES JOHNSON, OF BOURNE, OREGON.

INDICATOR FOR HOISTING-WORKS.

SPECIFICATION forming part of Letters Patent No. 554,782, dated February 18, 1896.

Application filed January 30, 1895. Serial No. 536,737. (No model.)

To all whom it may concern:

Be it known that I, CHARLES JOHNSON, residing at Bourne, in the county of Baker and State of Oregon, have invented a new and useful Indicator for Hoisting-Works, of which the following is a specification.

My invention relates to improvements in indicators for hoisting-works in which an accurate record is kept continually in plain view of the engineer at the hoisting-engine, showing him at a glance the exact distance which the hoisting-rope has traveled, whether the rope be loaded or empty and either hoisting or lowering, thus indicating the true distance and position of the load at the end of the rope, and being extremely useful in connection with hoisting-works for mines and other hoisting machinery in which the load is not in full view of the engineer at the hoisting-engine. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is an end view of the machine. Fig. 2 is a plan of the machine. Fig. 3 is a plan of the end of the machine, showing the connection with the hoisting-rope. Fig. 4 is a front view of the indicator showing the indicator dials and hands. Fig. 5 is a plan of the box opened to show the mechanism of the parts. Fig. 6 is a detail of the indicating-shaft.

Similar letters refer to similar parts throughout the several views.

The indicator-plate A is fastened to a box B, which is bolted to a frame K, which carries a shaft J (see Fig. 2) to which is hinged a movable framework C C connected together by the rods c c. This movable framework is also hinged to the axis of a measuring-drum D, which permits the end of the machine carrying the measuring-drum D to rise and fall with the rope F.

The machine is placed in position in plain view of the engineer at the hoisting-works engine and is held in place firmly by bolts from the stationary frame K to any convenient timber about the hoisting-works.

The parts E E are yokes hung on the journals of the drum D and serving as guides for adjustable blocks in which the roller d is journaled, by means of which the roller d is kept constantly pressed tight against the rope

F, which turns the drum D. Thus the exact speed of the rope F is transmitted to the drum D. This speed is then accurately transmitted to the pulley G, as it is fastened on the axis of the measuring-drum D, which drives the belt H, which in turn drives the pulley I, which in turn drives the counter-shaft J. (See Fig. 2.) This counter-shaft J transmits the speed to the cross-shaft L by means of a worm on the counter-shaft J, which works in a gear with ten teeth l on the cross-shaft L, thus decreasing the speed of the cross-shaft L ten times. On the end of this cross-shaft L the hand of the indicator a' is attached. The cross-shaft L transmits the speed to the indicating-shaft M by means of a worm which works in a gear n with ten teeth on the indicating-shaft M, reducing the speed of the indicating-shaft M ten times. This speed is transmitted direct to the indicator a² by means of a bevel-gearing o p, each containing ten teeth and operating the hand of the indicator a², which is attached to p.

The shaft M reduces the speed ten times again by means of a worm and gear at q, with ten teeth set exactly the reverse of the gearing at m. The little shaft q runs the indicator-hand a³, which is attached thereto. Thus, referring to Fig. 4, when the machine is operating the indicator a' registers one foot and fractions to ten feet, indicator a² registers ten feet to one hundred, and indicator a³ registers one hundred feet to one thousand.

As all the connections for recording speed are fixed, the indicator-hands move forward from 0 to 1,000 when the rope is lowering, and reverse this action when the rope is hoisting.

This machine can be built by any competent machinist out of iron and steel; and the sizes and dimensions of the various parts can easily be adjusted to meet the requirements of all kinds of hoisting machinery.

I am aware that prior to my invention indicating-machines have been made for elevators similar to mine in the reducing device by gearing. I therefore do not claim such a combination broadly, but

What I do claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, with indicating devices, a drum and a hoisting-rope, of connections between said drum and said indi-

cating devices, and means for keeping the rope against the drum so that the movement of the rope will turn the drum, substantially as described.

- 5 2. The combination, with indicating devices, a hoisting-rope and a drum bearing on said rope, of a framework in which at one end of said framework said drum is journaled, a shaft on which the other end of the

framework is hung, connections between said shaft and said indicating devices, and driving connections between said drum and said shaft, substantially as described.

CHARLES JOINSON.

Witnesses:

GEO. H. SHINN,
ARTHUR PHILBRICK.