

(No Model.)

T. BLANCHARD.

SPEED INDICATOR.

No. 282,487.

Patented Aug. 7, 1883.

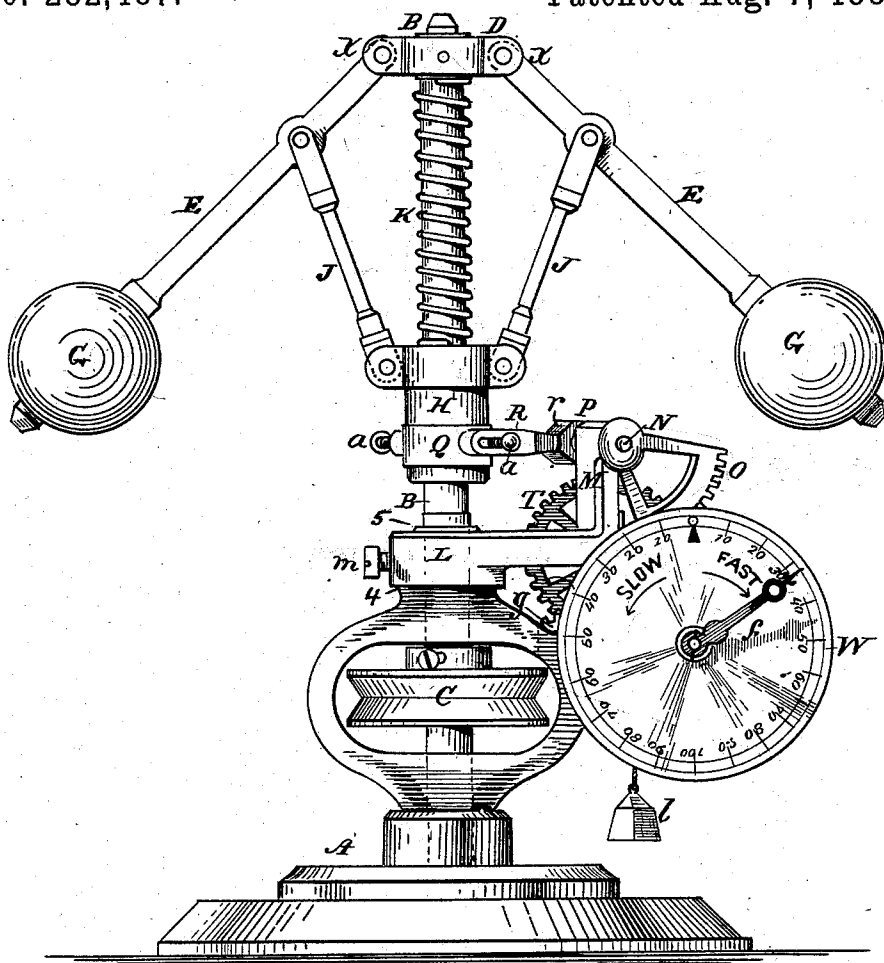


Fig. 1.

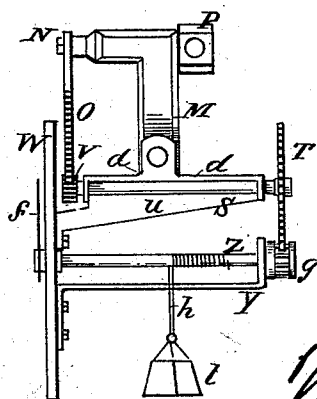


Fig. 2.

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UNITED STATES PATENT OFFICE.

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SPEED-INDICATOR.

SPECIFICATION forming part of Letters Patent No. 282,487, dated August 7, 1883.

Application filed March 29, 1883. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BLANCHARD, of Stoughton, in the county of Norfolk, State of Massachusetts, have invented a certain new and useful Improvement in Speed-Indicators, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is an isometrical perspective view, representing the indicator in use; and Fig. 2, a side elevation, showing the dial mechanism and counter-balance.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

My invention relates to that class of indicators which are employed for indicating the speed of shafting machinery, &c.; and it consists in a novel construction and arrangement of the parts, as hereinafter more fully set forth and claimed, by which a more effective device of this character is produced than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation, its extreme simplicity rendering an elaborate description unnecessary.

In the drawings, A represents the body of the indicator, in which the shaft B is journaled vertically, and provided with the whirl C. Attached to the upper part of the shaft, and arranged to turn with it, there is a cross-bar, D, carrying the arms E, which are jointed to the bar at *x*, and provided at their outer ends with the gravitating balls G. A sleeve, H, is fitted to slide on the shaft, the upper end of the sleeve, on either side, being connected to the arms E by the jointed bars J, and a spring, K, interposed between the sleeve and bar D, the spring acting expansively to force the sleeve down or in the direction of the body A. A swinging bracket, L, resting on a shoulder or bearing, 4, on the body A, is fitted onto the hub 5 and provided with the set-screw *m*. This bracket has an upwardly-projecting arm, M, at its outer end, in which there is a shaft, N, journaled horizontally, and carrying at one of

its ends the segment O, and at its other the collet P, the segment and collet being rigidly attached to said shaft. The sleeve H is provided with an annular groove near its lower end, and in this groove is fitted to work the loose collar Q. A bifurcated lever, R, is pivoted to the collar by the screws *a a*, its outer end being provided with a stud, *r*, which is fitted to work in a hole in the collet P without being withdrawn therefrom as the sleeve H rises and falls on the shaft B. Attached to the outer end of the bracket M there are two arms, *d d*, and journaled horizontally therein is a shaft, S, provided at one of its ends with the spur-wheel T, and at its other with the pinion *v*, which intermeshes with the segment O. Projecting laterally from the lower part of the bracket M there is an arm, U, carrying at its outer end the dial-plate W, the plate being rigidly attached thereto. An arm or bracket, Y, is secured to the inner face of the dial, and journaled horizontally therein, and in the plate W there is a shaft, Z, carrying at one end the index or hand *f*, and at the other the pinion *g*, which intermeshes with the spur-wheel T. The dial-shaft Z is provided with a cord, *h*, and counter-balance *l*, to keep the pinion *g* in close contact with the wheel T, thereby preventing all backlash, and steadying the hand *f*. The dial-plate is marked with numbers and fractional parts thereof, as shown in Fig. 1, commencing at zero or naught and ending with 100, counting in either direction from the top. It is also prominently marked with the words "slow" and "fast," and with arrows indicating in which directions the hand must move to correspond therewith.

In the use of my improvement the indicator is placed in any convenient position and connected with the machine with which it is to be used by means of a belt passing around the whirl or small pulley C. The whirl being secured to the shaft B, when power is applied to the same the shaft will be revolved, causing the balls G to be thrown outward, thereby drawing up the sleeve H, causing the lever R to turn the shaft N, and through the segment O and intermediate gearing moving the hand *f* over the dial W, to indicate the speed in a manner which will be readily obvious without a more explicit description. The bracket L being loose on the hub 5, and the collet Q on

the sleeve H, permits the dial to be adjusted or set to face in any desired direction to accommodate the workman or person whose duty it is to watch the indicator.

5 I am aware that the body A, shaft B, whirl C, sliding sleeve H, spring K, bars J, arms E, and balls G are common to most centrifugal or ball governors for steam-engines, and I do not, therefore, claim the same when in and of them-
10 selves considered; but,

Having thus explained my invention, what I claim is—

1. In a speed-indicator, the bracket L, shaft N, segment O, shaft S, spur-wheel T, pinion *v*,
15 shaft Z, pinion *g*, hand *f*, and dial W, in com-

bination with means for supporting the bracket, and with operative mechanism, substantially as set forth.

2. The improved speed-indicator herein described, the same consisting of the body A, 20 shaft B, whirl C, sleeve H, collet Q, bars J, arms E, balls G, lever R, collet P, shaft N, segment O, pinion *v*, shaft S, wheel T, pinion *g*, shaft Z, weight *l*, cord *h*, dial W, hand *f*, and brackets Y M, constructed, combined, and ar- 25 ranged to operate substantially as set forth.

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Witnesses:

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