D. S. NEAL.

Time-Signals for Railways.

No. 147,155. Patented Feb. 3. 1874.

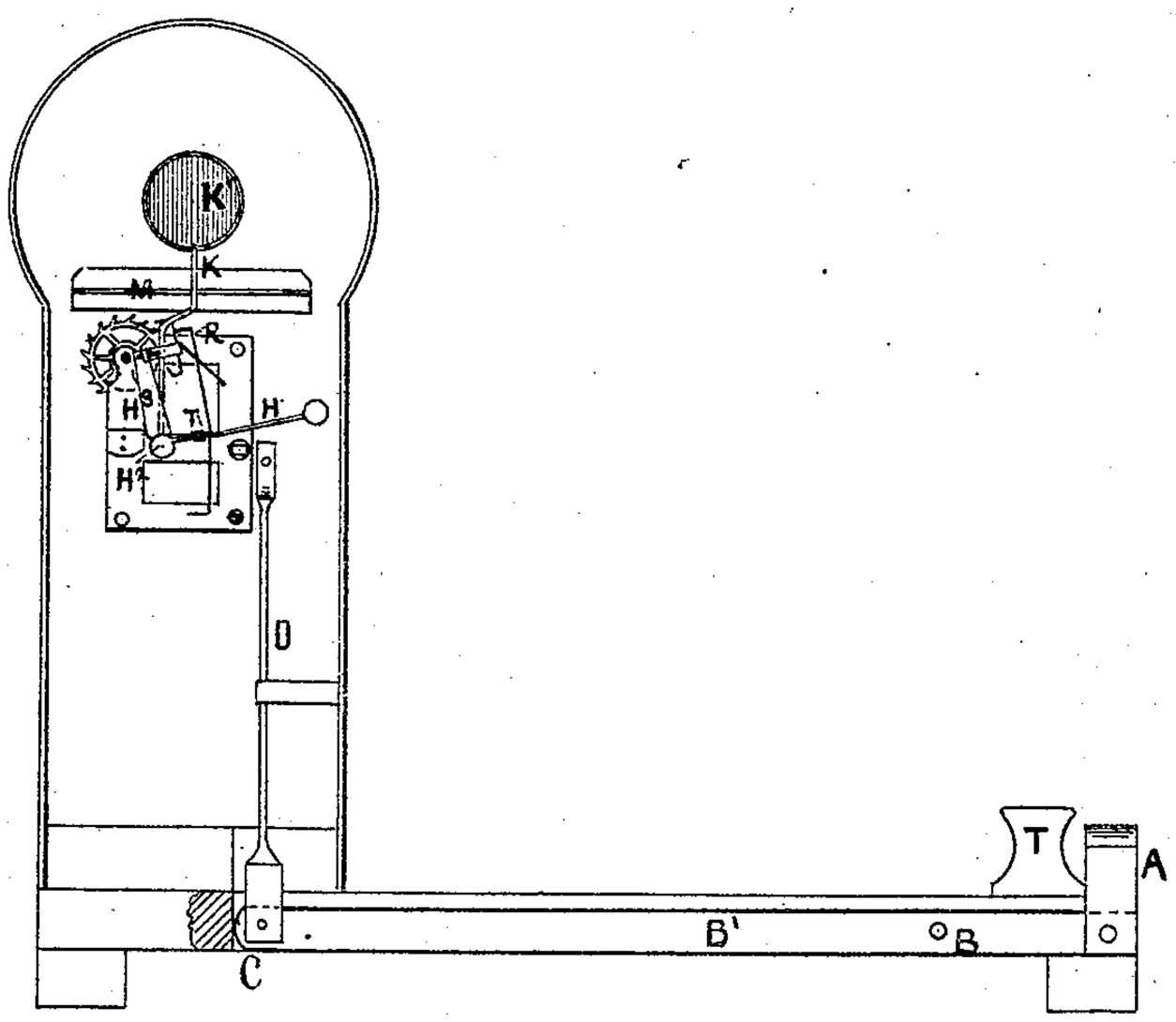

Fig. 1

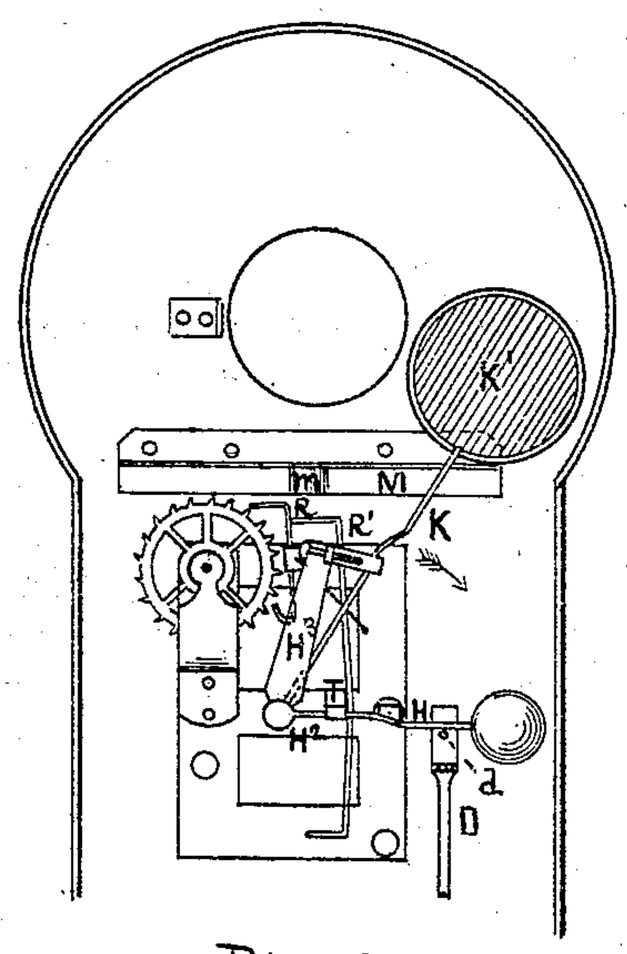

Fig. 2

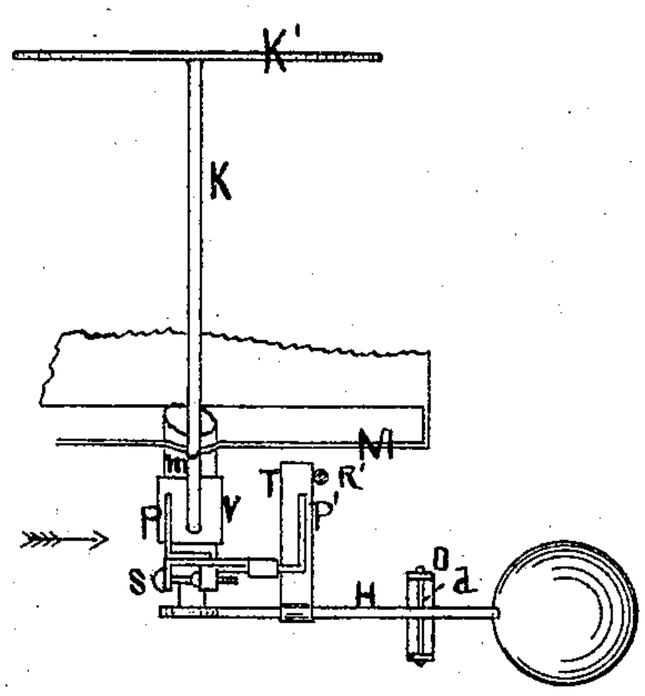

Fig. 3

WITNESSES.

Frank G. Parker

Geo. H. Goodwin, Jr.

INVENTOR.

Daniel S. Neal

William Edson Atty

AM. PHOTO-LITHOGRAPHIC Co. N.Y. (OSBORNE'S PROCESS)

UNITED STATES PATENT OFFICE.

DAVID S. NEAL, OF LYNN, ASSIGNOR OF ONE-HALF HIS RIGHT TO LUKE GOVE, OF STONEHAM, MASSACHUSETTS.

IMPROVEMENT IN TIME-SIGNALS FOR RAILWAYS.

Specification forming part of Letters Patent No. **147,155**, dated February 3, 1874; application filed July 19, 1873.

To all whom it may concern:

Be it known that I, DAVID S. NEAL, of Lynn, in the county of Essex and State of Massachusetts, have invented a certain new and useful Time-Signal for Railways, of which the following is a specification:

The nature of my invention consists in the construction of a device by which the wheels of a passing train throw up a signal, the said signal being thrown back by clock-work after the said signal has remained in position a certain desired length of time.

Figure 1 is an elevation, showing the signal and its actuating device. Fig. 2 is an enlarged view of a part of the same. Fig. 3 shows a part of the same in plan.

Let T represent one rail of the track. B′ is a lever pivoted at B, and having at its end, which projects under the rail T, an upright, A, so arranged that the flange of the wheel of a passing car will strike the same and depress it, thus throwing up the end C of the lever B′. At the end C of the lever B′ I attach the vertical rod D. The upper end of this rod D is forked, as shown in Figs. 2 and 3, across which fork I place an elastic cord, *d*. The function of this rod D is to throw up the signal K′, which it does by acting through the arm H, the shaft H^2, and arm H^3. The signal K′ is attached by the rod K to a hollow shaft, V, Fig. 3, which swings freely around an interior quill about the shaft H^2. The elastic cord *d* transmits the motion from D to H, and, by its elasticity, saves the apparatus from the sudden shock to which it would be otherwise exposed by the passage of the train. M, Fig. 3, is a thin metal spring, arranged with a curve at *m*, Fig. 3, so that when the signal is thrown up it will be held in position by the friction of this spring. The arm H^3 has at its upper end two horizontal projections, P and P′, Fig. 3, one of which, P′, is adjustable by means of a screw, S. Now, as P moves with the arm H, it will be seen by inspection of Fig. 2, that when the arm H is thrown up, P′ will come in contact with the rod K and throw it into a vertical position, which action throws the signal up, where it will be held by the spring *m* until it is started back by the clock-work, as will be hereinafter explained. The shaft H^2, to which the arms H and H^3 are attached, is arranged like the minute-hand arbor of the clock, and is moved by clock-work, motion being communicated through a friction-sleeve in the usual manner. The movement of the clock-work causes the arm H^3 to traverse in the direction of the arrows, Figs. 2 and 3, and as soon as the horizontal projecting arm P comes in contact with the rod K it pushes it off from the spring M, and thus the signal K′ is free to drop back into the position shown in Fig. 3. T, Fig. 3, is an arm projecting horizontally from the arm H, and is so arranged, in connection with the stem R′ of the pallet R, that when the arm H is down—that is, when the signal is down—it, the arm T, contacts with the stem R′, and prevents the movement of the pallet—that is, stops the clock-work; but when the arm H is up, and the signal in position, as shown in Fig. 1, then the arm T is sufficiently far from the stem R to allow it to vibrate, and thus to let the clock-work move, which movement, acting through the arms H^3 and P, as has already been described, causes the signal to drop back, as shown in Fig. 2.

From the above description, it will be seen that the time which the signal will stay up depends upon the distance between the arm P and P′, which in fact measures the amount of angular movement of the shaft H^2 which must take place after the signal has been thrown up before it will be thrown down again, and as P′ is adjustable by the screw S, the time during which the signal will remain up may be varied to suit the case.

I claim as my invention—

The combination of the arms H^3 P and adjustable arm P′ with the rod K, operating in connection with the clock-work, substantially as described and for the purpose set forth.

DAVID S. NEAL.

Witnesses:

FRANK G. PARKER,

WILLIAM EDSON.