J. C. PAIGE.

Railway Time-Signals.

No. 164,475. Patented June 15, 1875.

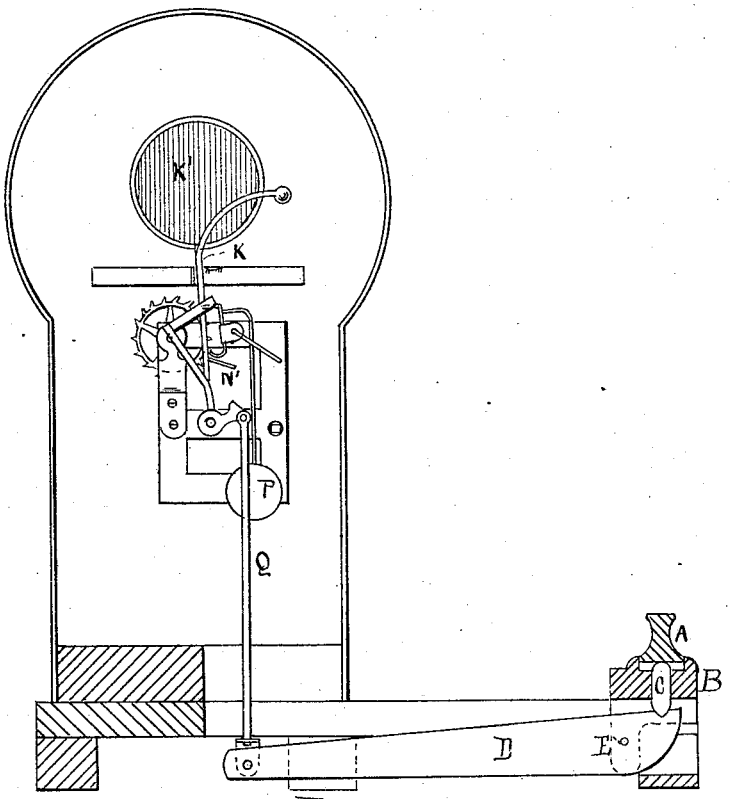

Fig. 1

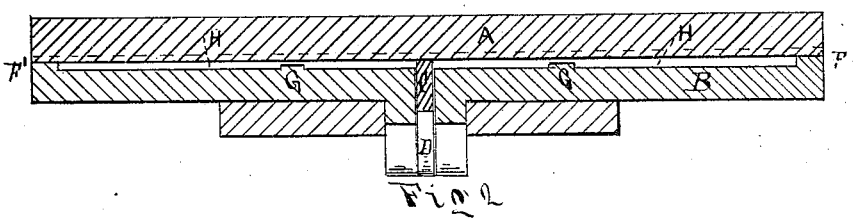

Fig. 2

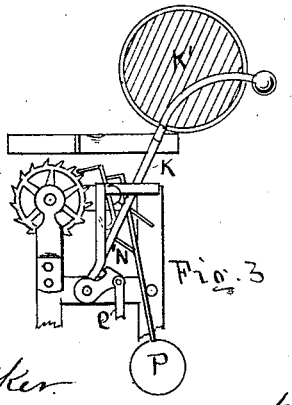

Fig. 3

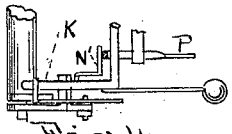

Fig. 4

Witnesses,
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UNITED STATES PATENT OFFICE.

JOHN C. PAIGE, OF STONEHAM, MASSACHUSETTS.

IMPROVEMENT IN RAILWAY TIME-SIGNALS.

Specification forming part of Letters Patent No. **164,475**, dated June 15, 1875; application filed May 12, 1874.

To all whom it may concern:

Be it known that I, JOHN C. PAIGE, of Stoneham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Railway Time-Signals, of which the following is a specification:

My invention consists in a device for holding the rail and signal-lever, so that a slight depression of the rail, caused by the passage of the train, is sure to give motion to the signal-lever, said device consisting of a long chair, extending across several sleepers, and giving at its ends rigid bearing for the rail, the intermediate part having a rubber bearing, and also furnishing a fulcrum for the signal-lever.

Figure 1 is an elevation of the signal, showing the rail in section. Fig. 2 is a longitudinal section through the rail and chair. Fig. 3 is an elevation, showing part in detail. Fig. 4 is a plan, showing the same.

My invention relates to a device for starting the pendulum P when the signal is thrown up, and consists of a short arm, N′, Figs. 1, 3, and 4, which is attached to and extends from the rod K, which holds the signal. This arm N′ is so placed in relation to the stem of the pendulum P that when the signal drops into position shown in Fig. 3, then it the (arm N′) comes in contact with the stem of the pendulum, and swings it to one side, (see Fig. 3,) where it holds it until the signal is thrown up by the passage of the train acting through the rod Q, &c. When this action takes place, the arm N′, being attached to the rod K, is withdrawn from the stem of the pendulum, as shown in Fig. 1, and, as the pendulum has been held by it out of the perpendicular, it (the pendulum) immediately begins to swing, and thus allows the clock-work to act, and, after the proper interval, to throw down the signal, and again hold the pendulum out of its perpendicular, ready to start again upon the passage of a train.

The second part of my invention relates to holding the rail A and the lever D. B is a long chair. (Shown in vertical section in Fig. 2.) This chair B is so long as to bear on several sleepers, and to be rigidly attached to the same. The rail A rests upon solid bearings at the ends of this chair, as shown at F and F′, the intermediate space H H under the rail being packed with rubber or some similar material, so that no ice or other deposit can enter the space. C, Figs. 1 and 2, is a short pintle or toggle, the upper end of which bears against the under side of the rail, while the lower end rests upon the end of the lever D, as shown in Figs. 1 and 2. The lever D swings on a fulcrum, E, Fig. 1, which is supported by the chair B.

From the above it can be seen that when a wheel of the train passes onto that part of the rail A between the two points F and F′, the rail will be depressed, which action will be communicated by the pintle C to the lever D, and from thence through the rod Q to the signal.

To limit the bending of the rail A by the weight of the passing train I place in the space H, Fig. 2, two or more resting-points, G G. The chair B and rail A should be so arranged that the utmost bending of the rail A, caused by the passage of the train, should be within the limit of elasticity, so that there may be no danger of permanent set.

By combining the fulcrum E of the lever D with the long shoe which supports the rail, I guard, as far as possible, against the action of frost—that is, if the chair B is thrown up by the frost, the fulcrum E will move with it, so that the relative distance from the rail to the lever will not be changed; hence the depression caused by the passage of a train will produce the same effect as though the frost had not thrown the chair.

I am aware that the pintle for operating the signaling mechanism has been depressed by the springing of the rails, as shown in patent to J. F. Andrews, April 23, 1872; but in such cases the rail rested upon rubber pillars, which furnished no positive stop to the spring of the rail, and the rails were liable to a permanent set, thus destroying the efficiency of the signal. The object of my invention is to overcome this difficulty, and keep the rail within the limit of elasticity.

I claim as my invention—

1. The combination of the long chair B,

provided with the rail-bearings F and F′, the recesses H H′, and the positive resting-point G G, with the rail A, operating substantially as described, and for the purpose set forth.

2. The combination of the rail A, chair B, positive resting-points G G, pintle C, and the lever D, operating together substantially as described, and for the purpose set forth.

JOHN C. PAIGE.

Witnesses:
FRANK G. PARKER,
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