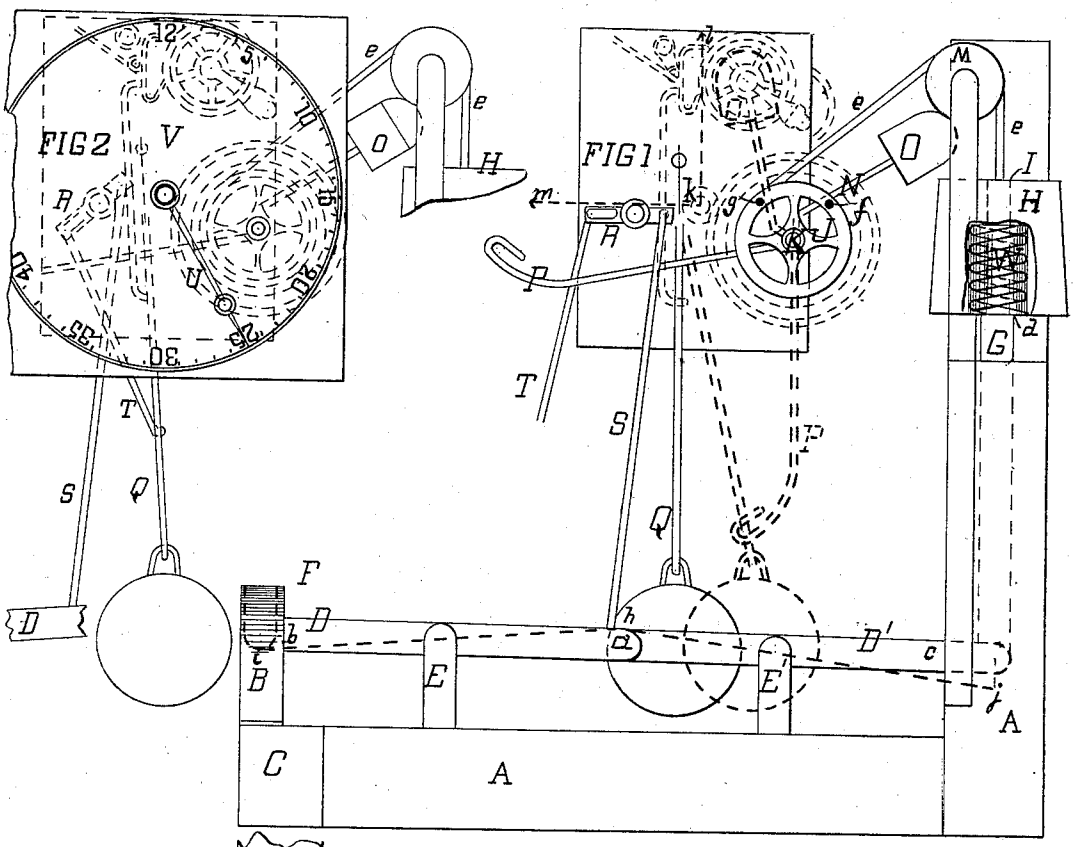
J. A. DINKEY, N. ENBODY & S. BRADLEY.

Time Signals for Railroads.

No. 166,194. Patented Aug. 3, 1875.



WITNESSES

J. B. Pastorius

M. B. Hahn

INVENTORS

James A. Dinkey

Nehemiah Enbody

Samuel Bradley

by Francis D. Pastorius Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JAMES A. DINKEY, NEHEMIAH ENBODY, AND SAMUEL BRADLEY, OF MAUCH CHUNK, PENNSYLVANIA.

IMPROVEMENT IN TIME-SIGNALS FOR RAILROADS.

Specification forming part of Letters Patent No. **166,194**, dated August 3, 1875; application filed June 23, 1875.

To all whom it may concern:

Be it known that we, JAMES A. DINKEY, NEHEMIAH ENBODY, and SAMUEL BRADLEY, all of Mauch Chunk, in the county of Carbon and State of Pennsylvania, have invented a new and useful Railway-Clock Signal, of which the following is a specification:

The invention consists of mechanism, hereinafter described, to be used, in combination with a clock-movement of the usual kind, for measuring and recording the difference in time between two railway-trains moving on the same track past a given point, and indicating the same to the train-hands by means of a clock-dial and a minute-hand.

Figure 1 is a side elevation, the dial and the hand not being shown. Fig. 2 is a side elevation, showing the dial and the minute-hand. Fig. 3 is a plan view of Fig. 1. Fig. 4 is an end view of the spring used for operating the levers.

To avoid confusion, the wheels, pinions, and other parts of the clock-movement are drawn in dotted lines.

A is the frame of the machine. B is a curved spring on the sill C of the frame, adjacent to one rail of the track. D D′ are levers, which are jointed at *a*, and turned on fixed centers E E′. The end *b* of the lever D is hinged in the jaws F of the spring B, and the end *c* of the lever D′ to the vertical lifting-bar G, (dotted lines, Fig. 1.) H is a winding-weight on a shoulder, *d*, made by reducing the upper end of the bar G, to form a support, I. It is connected to the pulley J on the arbor K of the clock-spring L by a cord, *e*, which passes over the pulley M of the frame. A stop-motion placed loosely on the arbor K consists of the rod N and the weight O on one side, and the trip-lever and hook P, which leads off in front of the pendulum Q. A second stop-motion consists of the vibrating rod R on a stud projecting from the front plate of the clock-frame. A rod, S, connects one end of this lever with the lever D. To its opposite end is fixed a trip-rod, T. Only a minute-hand, U, is used. The dial V is divided into minutes beyond the half-hour.

When the clock has been wound up and started, it runs, if no trains pass, until the minute-hand reaches any given limit—say, thirty-five minutes—then the rod and weight N O, which are gradually raised to a perpendicular position by the carrier-pin *f*, on which the rod N rests, moving with its wheel J on the arbor K, drop forward onto the carrying-wire *g*, and the trip-lever and hook P move and clutch the pendulum Q, as shown by the dotted lines, and stop the clock until a passing train runs over and depresses the spring B, and throws the levers D D′ into the position shown by the dotted lines *h i h j*, by which the bar G is lowered, when the weight H is relieved of its support, drops, and pulls the cord *e*, attached to the wheel J on the clock-spring arbor K, which turns the clock-movement in the opposite direction, and thereby winds the spring L, and suddenly places the hand U at the starting-point.

In Fig. 1 the starting-point of the hand is shown by the dotted line *k l*, and the limit by the dotted line *k m*.

When a train passes before the expiration of the limit time—for instance, twenty-five minutes after twelve o'clock—the rod S, partaking of the movement of the lever D, turns the lever R, and throws its trip-rod T forward to engage the pendulum and stop the clock. At the same time the weight H is relieved of its support, drops, and winds the clock, and returns the hand to the starting-point.

The jarring caused by the sudden stopping of the weight H is diminished by a spring, W, on the reduced part of the lifting-bar G.

I claim as my invention—

1. The combination, with a clock-movement, of the spring B, levers D D′, lifting-bar G, winding-weight H, cord *e*, pulley J, arbor K, and spring L, as shown and described.

2. The combination, with a clock-movement, of the pulley M, rod and weight N O, and the trip-lever P, as shown and described.

3. The combination, with a clock-movement, of the spring B, lever D, rod S, lever R, and the trip T, as shown and described.

In testimony whereof we hereunto sign our names in presence of two subscribing witnesses.

JAMES A. DINKEY.
NEHEMIAH ENBODY.
SAMUEL BRADLEY.

Witnesses:
ISAAC SMITH,
F. BERTOLETTE.