(No Model.) 2 Sheets—Sheet 1.

H. A. WAYNE.

Time Signal for Railways.

No. 234,634. **Patented Nov. 16, 1880.**

Fig. 1.

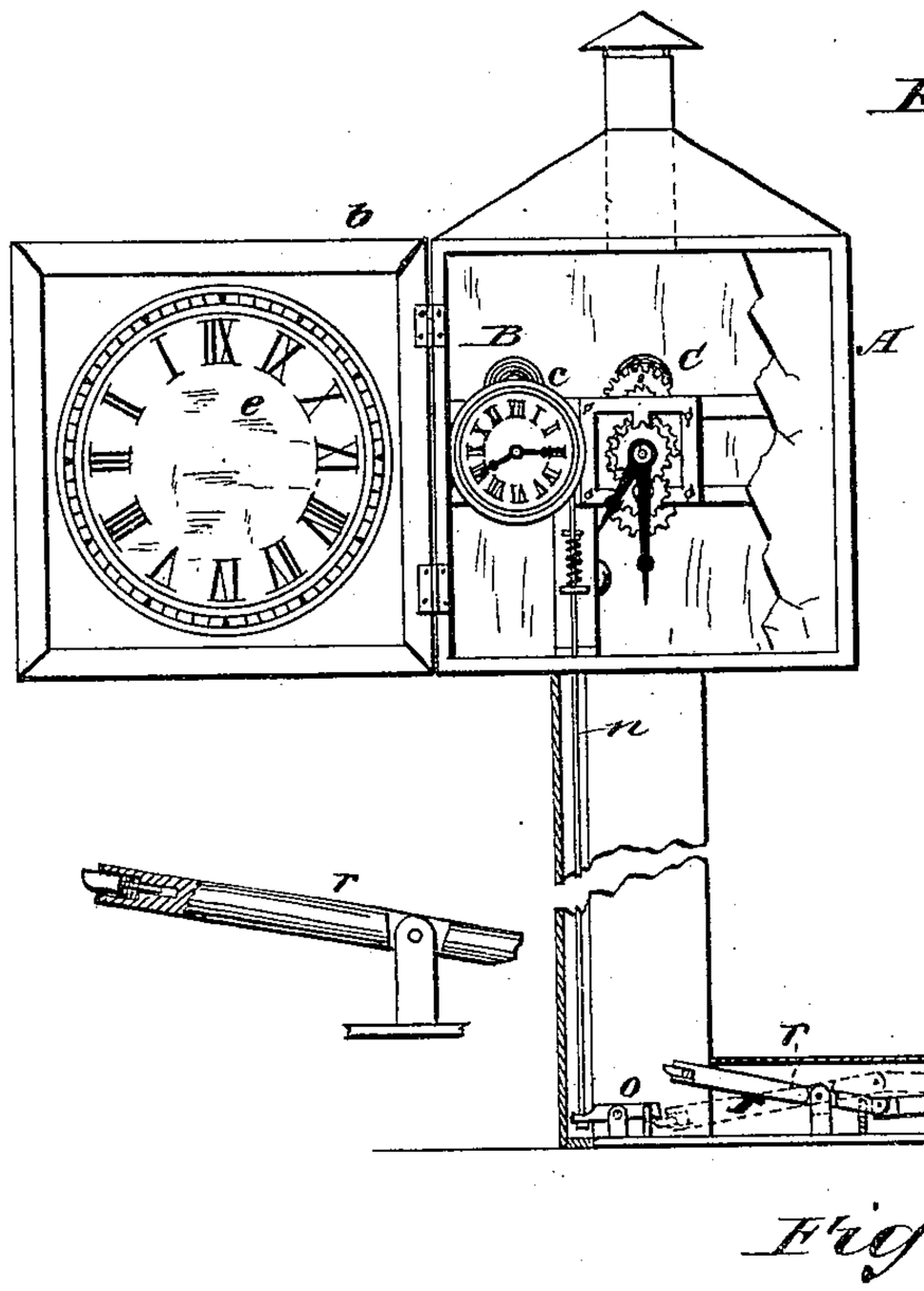


Fig. 3

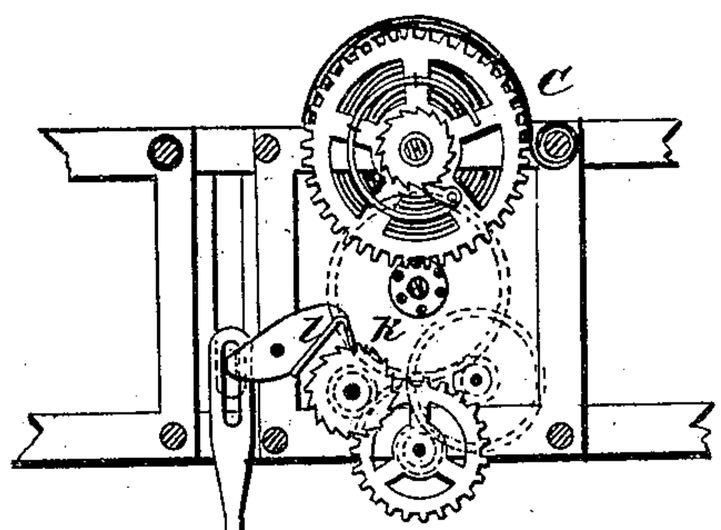


Fig. 2.

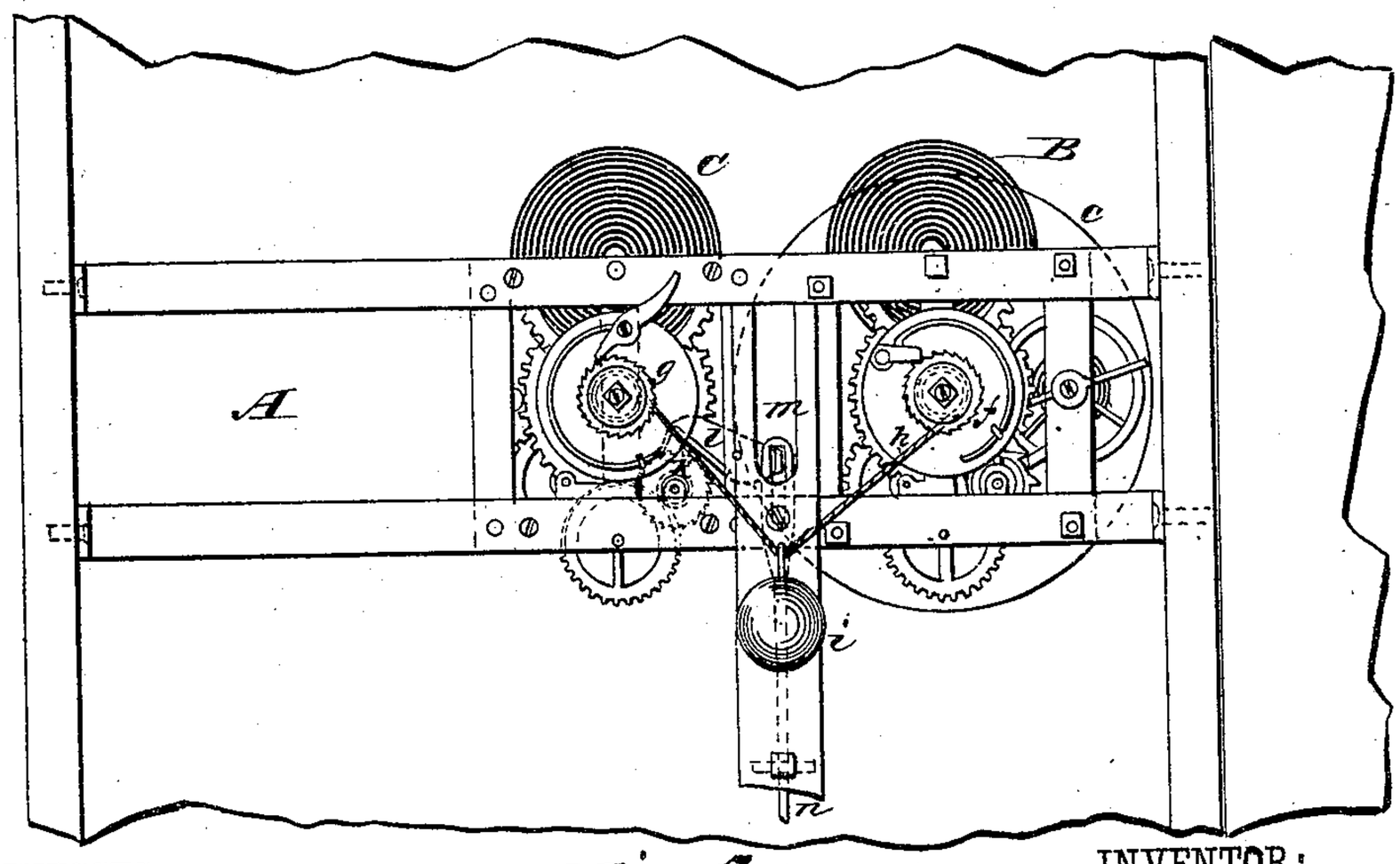
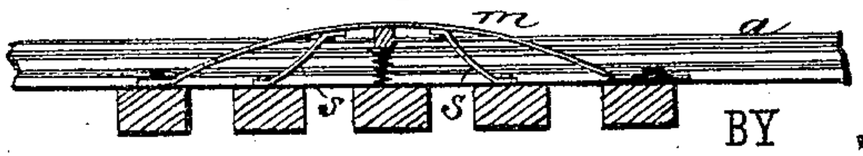


Fig. 5



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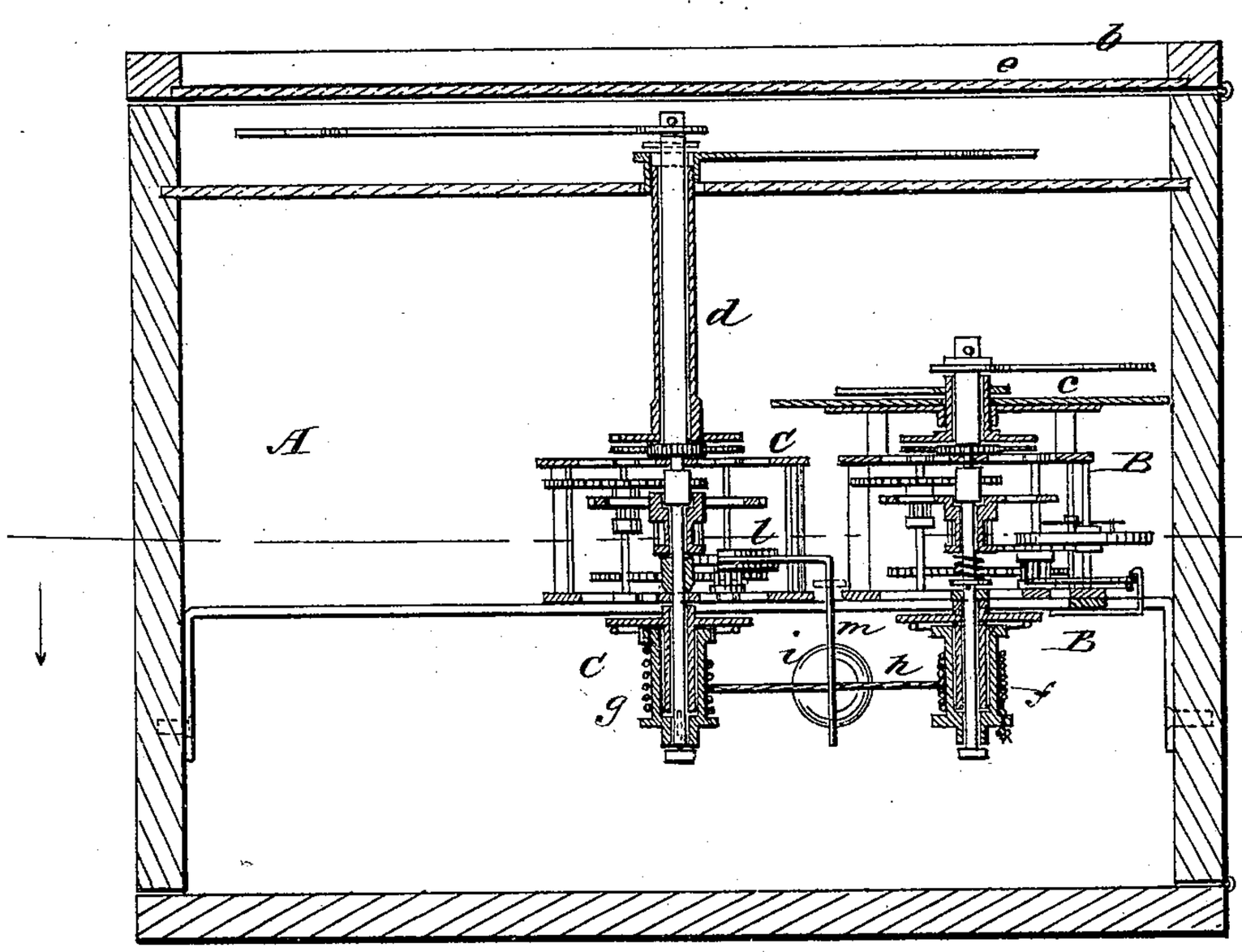
(No Model.) 2 Sheets—Sheet 2.

H. A. WAYNE.

Time Signal for Railways.

No. 234,634. **Patented Nov. 16, 1880.**

Fig. 4



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UNITED STATES PATENT OFFICE.

HORACE A. WAYNE, OF MANLIUS STATION, NEW YORK.

TIME-SIGNAL FOR RAILWAYS.

SPECIFICATION forming part of Letters Patent No. 234,634, dated November 16, 1880.

Application filed August 11, 1880. (No model.)

To all whom it may concern:

Be it known that I, HORACE A. WAYNE, of Manlius Station, in the county of Onondaga and State of New York, have invented a new and useful Improvement in Time-Signals for Railways, of which the following is a specification.

The object of my invention is to furnish an apparatus fitted for operation by passing trains to indicate the time of passage for information of the driver of a following train.

The invention consists in the combination of a clock with hands and dial as usual, and a clock-movement without an escapement, that moves the hands of the indicating-dial, and having a stop-lever that is released by the passing train, the two clocks being so connected that the indicator remains immovable until a train passes, when it is released and moves until its hands catch up with or indicate the clock-time, and it is again stopped.

The construction and operation will be described in detail with reference to the accompanying drawings, wherein—

Figure 1 is a front elevation of the indicating apparatus, partially in section, and showing the connections to the track. Fig. 2 is a rear elevation of the box and clock mechanism. Fig. 3 is a detail view, showing the stop-pawl, and Fig. 4 is a horizontal section of the box.

Similar letters of reference indicate corresponding parts.

A is the box or housing containing the mechanism for operating the indicators, which box is elevated on a post at the side of the track. (Shown at *a*.) The front of the box is fitted with a door, *b*, fitted with a glass dial, *e*, and in the box, behind door *b*, is fitted a plate of ground glass, which at night is to be illuminated by a lamp placed in box A. There is also a door at the back of box A, which gives access to the mechanism.

Within the box is a clock-movement, B, of which *c* is the dial. There is also a second clock-movement, C, having its center arbor, *d*, extended through a center opening in the ground-glass plate, so that the hands are visible through door *b*. The clock-movement C has no escapement, and consists simply of the necessary gearing for moving the hands driven by a spring, so that when in operation the hands are rapidly turned.

The winding-arbors of the two movements B C are fitted each with a drum or barrel, as shown at *f* and *g*, which are fast upon the arbors, and correspond in diameter. To the drums *f g* are connected the ends of a cord or chain, *h*, which is wound on the drum *f* of clock B in such direction that it unwinds with the spring, and on drum *g* of clock C, so that it is wound up as the spring unwinds. On the cord *h* is hung loosely a weight, *i*, that serves to keep the cord taut.

The escapement-arbor of the movement C is provided with a ratchet-wheel, *k*, that is engaged by a stop-pawl, *l*, that is fitted between the front and back plates of the movement. From the pawl *l* an arm, *m* extends back above the cord *h* in such position that when the cord is drawn taut it raises arm *m* and moves pawl *l* into contact with ratchet-wheel *k*. From the arm *m* a rod, *n*, extends downward through the post to the ground, where it is connected with a lever, *o*.

q r are levers contained in a suitable box or trough and extending to near the track *a*. At the outside of the track *a* curved spring-plate *p* is connected by one end to the ties, while the other end is held loosely in a suitable guide, as shown most clearly in Fig. 5, so that the spring curves upward into a position for being struck and depressed by the pilot of a passing engine.

Beneath plate *p* are springs *s*, tending to raise the plate upward. This plate *p* is connected to the end of lever *q*, while the outer end of lever *r* extends above the end of lever *o*, and is fitted with a sliding latch, so that as plate *p* moves down the end of lever *r* passes beneath lever *o*, and on its return movement raises lever *o*, draws down rod *n*, and raises pawl *l*. The rod *n* is slotted where it connects with pawl *l*, so that downward movement of the end of lever *o* next to lever *r* is permitted without effect on the pawl.

The operation is as follows: The hands of the dial *e* are first set to correspond with the hands of clock B. The cord *h* is taut and pawl *l* engaged with wheel *k*. The movement C is thus held at rest while the clock runs.

The cord *h* is gradually unwound from the barrel as the clock continues to go, and as the movement C is at rest the hands of dial *e* continue at the hour as set. As a train passes the indicator it depresses the plate *p*, raises pawl *l*, as before described, thereby permitting the movement C to turn the hands of dial *e*, which will continue until the cord is taut again and has raised arm *m* and stopped the movement C. As the cord is wound up to the same extent it was previously unwound, the hands of dial *e* correspond again with the clock, so that when another train passes sooner or later the dial shows the time of the passage of the previous train, and is again brought into operation to indicate the time the second train passes. By these operations the time of passage of the last train is always shown on the dial, and the apparatus needs no attention except to wind it up from time to time.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In railway-indicators, the combination, with clock-work C, fitted to move the indicating-hands, and time-movement B, of the barrels *f g*, cord or chain *h*, pawl *l*, having arm *m*, and connections from the pawl to levers fitted for movement by a passing train, substantially as described, for operation as set forth.

2. In railway-indicators, the slotted rod *n*, stop-pawl *l*, and lever *o*, fitted for movement by a passing train, in combination with indicator C, time-movement B, barrels *f g*, and cord or chain *h*, the latter fitted to raise pawl and stop the time-movement, as shown and described.

3. The spring-plate *p*, levers *q r*, connected together, sliding latch *r'*, fitted in lever *r*, lever *o*, and slotted rod *n*, in combination with the stop-pawl *l* of the indicating mechanism, as and for the purpose specified.

HORACE ALBERT WAYNE.

Witnesses:

ALEX. F. PLATTS,

JOHN H. FISHER.