

(No Model.)

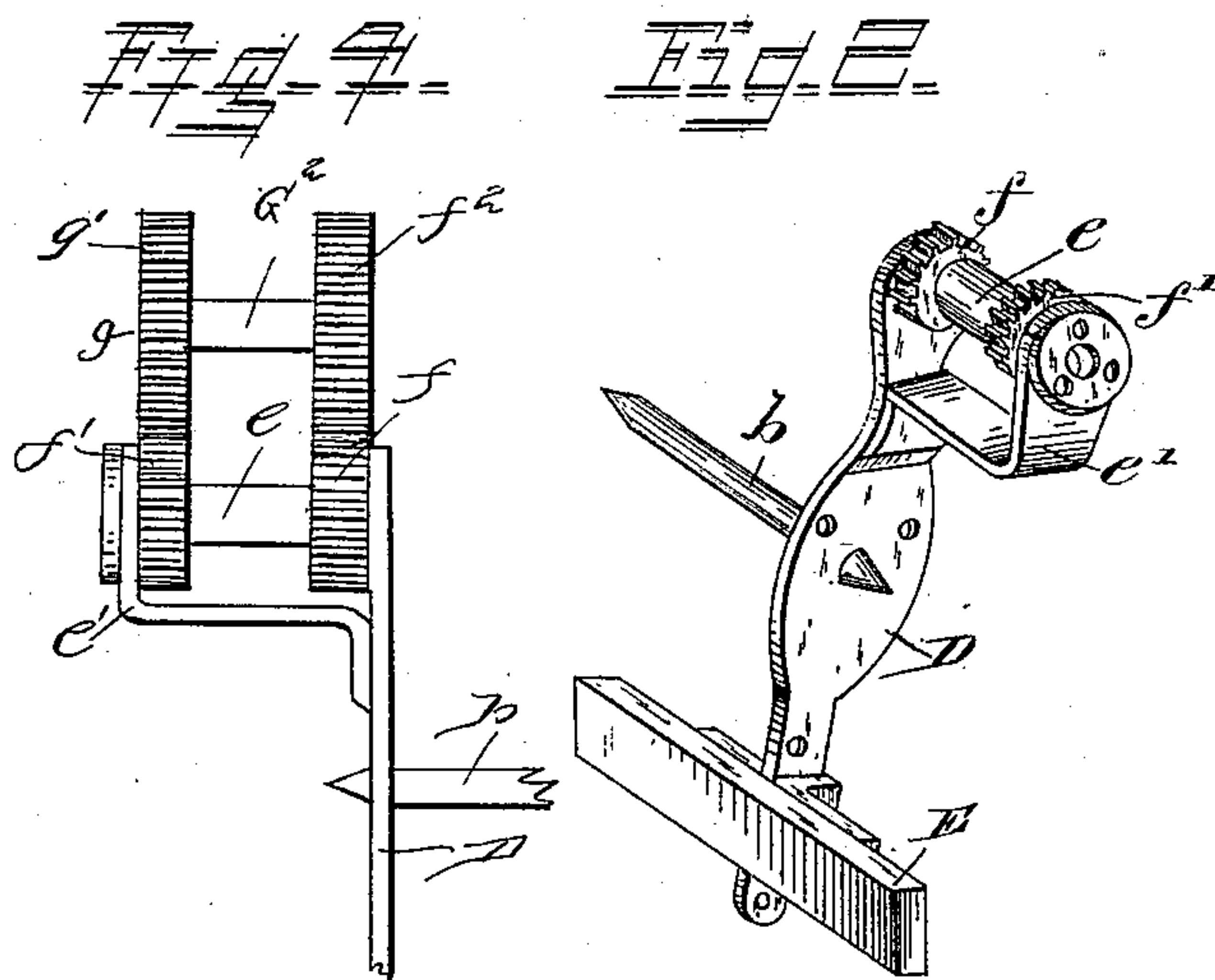
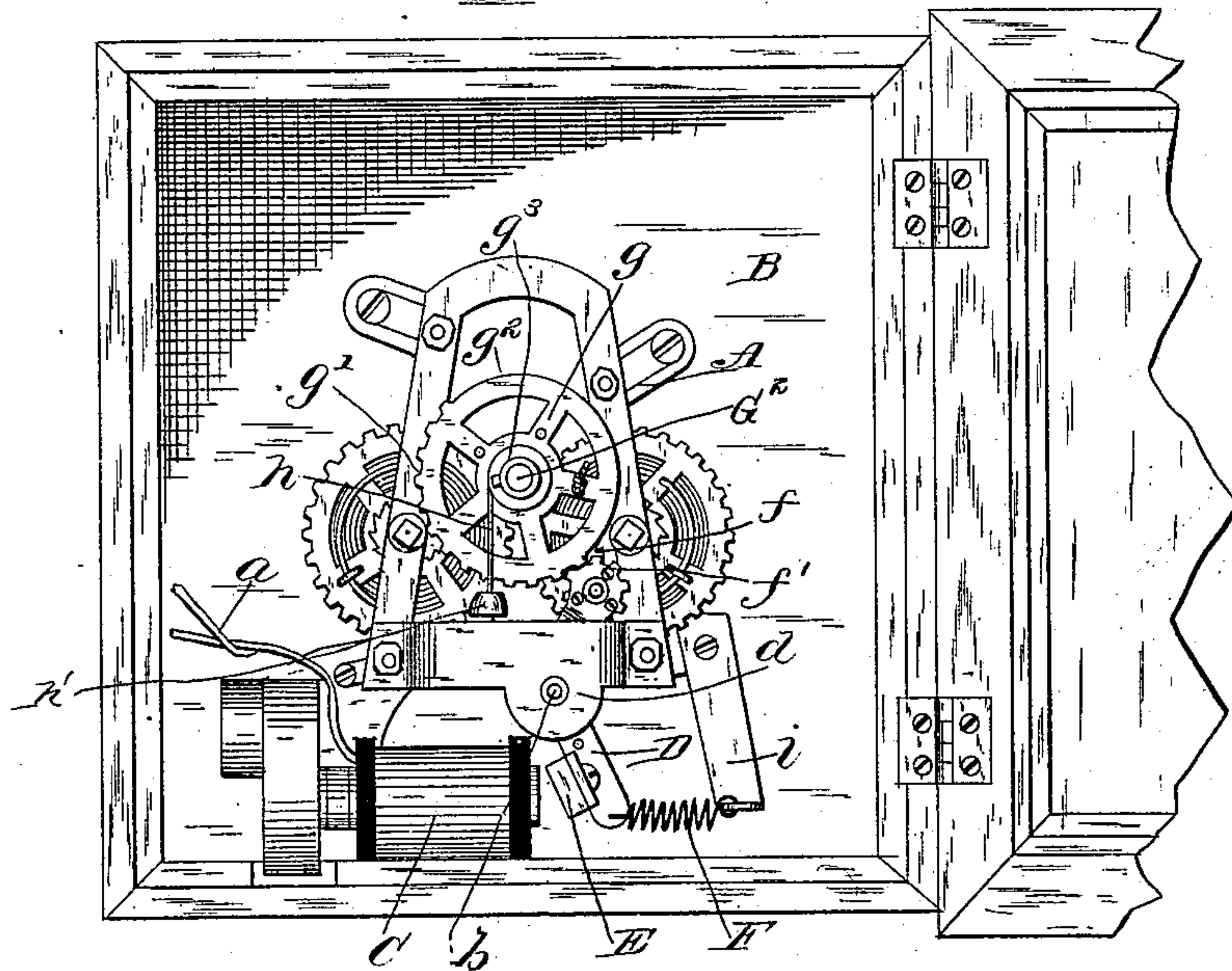
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C. BARRY.  
RAILWAY TIME SIGNAL.

No. 337,229.

Patented Mar. 2, 1886.

Fig. 1.



WITNESSES.

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*Robert M. Hill*

INVENTOR.

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(No Model.)

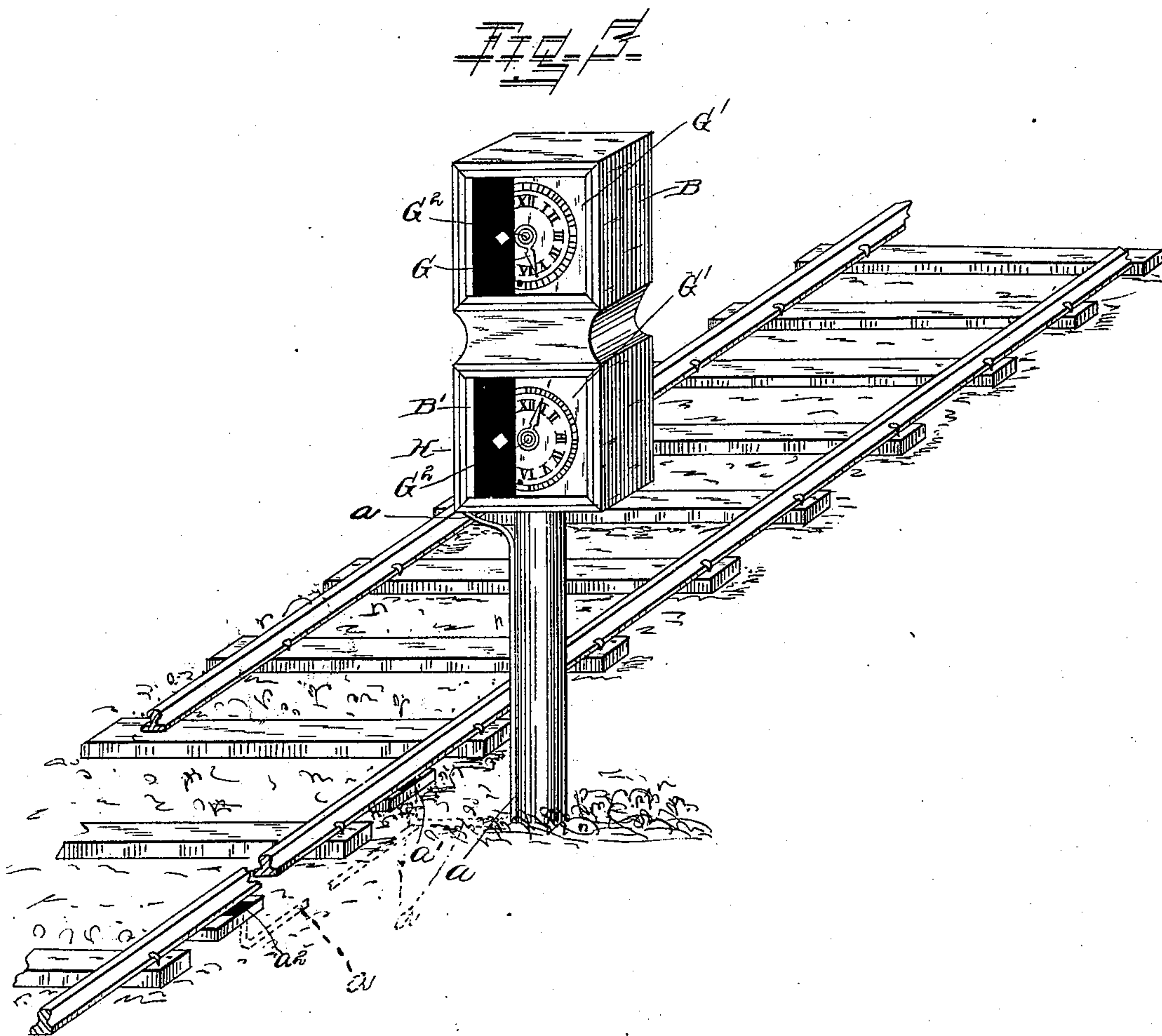
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WITNESSES.

Howard J. Schmidt.  
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# UNITED STATES PATENT OFFICE.

CHARLES BARRY, OF CORNING, NEW YORK.

## RAILWAY TIME-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 337,229, dated March 2, 1886.

Application filed September 26, 1885. Serial No. 178,267. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES BARRY, a citizen of the United States of America, residing at Corning, in the county of Steuben and State of New York, have invented certain new and useful Improvements in Time-Signals, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention pertains to improvements in electrical time-indicators for railways, having for its object to give notice of an approaching train, and to denote to a limited extent the time of passage, to enable the engineer of the next subsequent train to readily read or note the time of passage of the last previously-passed train; and the invention consists of the combinations of parts, including their construction, substantially as hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in elevation of my invention, with the door of the inclosing case standing open and mostly broken away. Fig. 2 is a detailed perspective view of the same, showing the armature and its lever with gearing. Fig. 3 is a view in perspective of my invention as used in practice, showing the inclosing-case in duplicate, with the face or dial of each only partly shown, the same also embracing a modification of my invention; and Fig. 4 is a detail view showing the pinions on a shaft at the upper end of said lever, gearing with the cog or gear wheels of the clock mechanism.

In carrying out my invention I employ, in connection with the ordinary time or clock mechanism, A, and its inclosing-case B, an electro-magnet, C, having electrical connection by the wires *a* with a battery, (not shown,) and, in practice, with an electrical conductor or bar of metal, *a'*, arranged in contiguity with a rail of the track at a point near where the signal is located, to form a circuit by the contact of the rail with said bar of metal or conductor as the train passes the same; or it may be with the car or engine wheel.

D is a lever, which is hung by a pivot, *b*, (having needle-pointed ends, to reduce friction to a minimum,) in ears or lugs *d* of the time or clock mechanism supporting-frame A. The upper end of the lever D carries a short shaft or axis, *e*, supported at one end directly in the said end of lever and at its other

end in the upper end of a right-angled bracket or arm, *e'*, secured at its opposite end to said lever, as shown in Fig. 2. Upon the shaft or axis *e* are two pinions, *f f'*, one, *f*, engaging with a pinion, *f<sup>2</sup>*, of the clock mechanism and the other, *f'*, adapted to gear with the semi-circular or segmental row of teeth or cogs *g'*, occupying about one-half of the periphery of the semi-cogless wheel *g*, the remaining portion or half of said periphery being cogless or plain, as at *g<sup>2</sup>*, the purpose of which will appear further on.

The wheel *g* is fixed to the shaft *G<sup>2</sup>*, carrying the hand or index *G*, and is provided with a drum, *g<sup>3</sup>*, upon one side, connected to and around which drum is wound or coiled a cord or strap, *h*, suspending a weight, *h'*; or, in lieu of said cord and weight, may be used a spring, also connected to and wound under tension upon said drum and connected to the frame A. The lower end of the lever D, which stands contiguously to one pole of the electrode or electro-magnet C, is provided with an armature, E, which, when the circuit is broken, is automatically swung or retracted from the magnet by the action of a spring, F, connected to the lower end of said lever and to a bracket or pendant, *i*, secured to the frame A.

In operation the wheel *g*, which is actuated by the clock mechanism, and which is usually making successive semi-rotations, as is obvious from the foregoing, causes the hand or index *G* to travel over the half-faced clock-dial *G'* at each movement of the wheel, and the weighted strap or cord *h*, to be wound upon the drum *g<sup>3</sup>* of the wheel *g*. It will therefore be seen that as the wheel of a car or engine of an approaching train comes into contact with the conductor or bar along the track, a circuit will be formed which will set up a current through, and thus convert the magnet into an electrode, which will attract the armature E, and thus swing the upper end of the lever D outward, and consequently take its pinions *f f'* out of engagement with the clock mechanism and the toothed or cogged surface *g'* of the wheel *g*, respectively. Instantly the hand or index will begin to move, and the weighted cord or strap *h* will unwind from the drum *g<sup>3</sup>* of the wheel *g*, under the action of its weight, thus resetting the hand or index of the clock by returning the same to the top of



the dial, and thereby, in the event of the next approaching train passing that point where the clock or signal is located within the number of minutes capable of being indicated by the clock-dial, giving notice to the said train of the number of minutes the last preceding train passed that point. The minute or index hand, having been returned to its starting-point at the top of the dial, will be acted upon by the clock mechanism, and thus exactly indicate the time of passage of the last train, provided the next following train passes that point before the index-hand has reached the full extent of its movement; or, in the latter event, the hand will be returned to its starting-point by the action before described, and thus repeat the before described operation. The semi-rotating movement of the wheel *g* having thus been reversed, the movement above mentioned of the hand or index *G* will be toward the point of beginning—*i. e.*, toward the number twelve (12) at the top of the dial. At the end of such movement of the wheel the teeth *g'* thereof will be brought into position to again engage the pinion *f'* of the lever *D*, as next explained. Immediately after the train has passed the conductor or bar of iron placed along the track the circuit will be broken, which will release armature *E* at the lower end of the lever *D*, and permit it to be acted upon by the spring *F*, which will throw the upper end of the lever inward, so as to cause its pinions *f f'* to be put into engagement with the clock mechanism and the wheel *g*, respectively, when the wheel *g* and the hand or index *G* will again be actuated by the time or clock mechanism, and thus be put in operation to give notice of the approach of another train.

The half-faced dials *G'* are so made as to permit of indication thereon by the hand or index *G* of any number of minutes from one to thirty, as, in practice, it is very seldom ever desirable to know the number of minutes since the passage of the last preceding train beyond the period of thirty minutes, and when the hand or index has traveled to that extent any further movement will be arrested by reason of contact of said hand with a pin or projection on said dial its lower end.

I do not restrict myself to the use of a half-faced dial, above described, as the same may, if desired, be made to be capable of indicating, together with the hand *G*, any number of minutes from one to sixty.

In Fig. 3, showing the inclosing case *B* with its dial *G'* duplicated, as at *B' H*, which case *B* is superposed upon the case *B'*, and which latter case, in practice, incloses mechanism the counterpart of that above described and inclosed by the case *B*, provision is thus made whereby is obtained a second time indicator or signal connecting with an iron bar or conductor, *a'*, disposed some distance beyond the previously-referred-to bar or conductor—say a mile or two (more or less) be-

yond said latter bar or conductor, the same being shown in connection with a broken-away portion of the rail in Fig. 3. This arrangement gives notice at the station or the point where the signal is located of the approach of a train, while the other indicator (the one before described) is so acted upon by said train when passing the point or station where located as to give notice to the next subsequent train of the number of minutes the preceding train passed said point or station.

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

1. In an electric time indicator or signal, the combination, with the clock mechanism, of the lever geared thereto and having an armature at one end, and carrying two pinions on a shaft at its other end, and the electro-magnet, substantially as and for the purpose set forth.

2. In an electric time indicator or signal, the combination, with the clock mechanism, the semi-cogless wheel, and an electro-magnet, of the lever provided with an armature and with pinions, one engaging the clock mechanism and the other the said semi-cogless wheel, substantially as and for the purpose set forth.

3. In an electric time signal or indicator, the combination, with the clock mechanism and the electro-magnet, of the lever carrying an armature at one end and connected to a spring at its armature end, said lever also carrying at its other end a shaft provided with pinions connected to the time or clock mechanism and to a partially-toothed wheel, respectively, substantially as and for the purpose specified.

4. In a time indicator or signal, the combination, with the time or clock mechanism and an electro-magnet, of the hand or index, the dial, the semi-cogless wheel having a drum, upon which is wound a weighted cord or strap, and the lever carrying at its one end an armature and connected at its same end to a spring, said lever carrying at its upper end a shaft provided with pinions adapted to gear with the clock mechanism and the semi-cogless wheel, respectively, substantially as and for the purpose set forth.

5. A railroad time signal or indicator having the lever carrying at its one end an armature, a spring connected to said lever, a shaft provided with pinions, the semi-cogless wheel having a drum, the weighted cord or strap wound upon said drum, and the electro-magnet, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

CHARLES BARRY.

Witnesses:

J. NOTA MCGILL,

H. A. HALL.