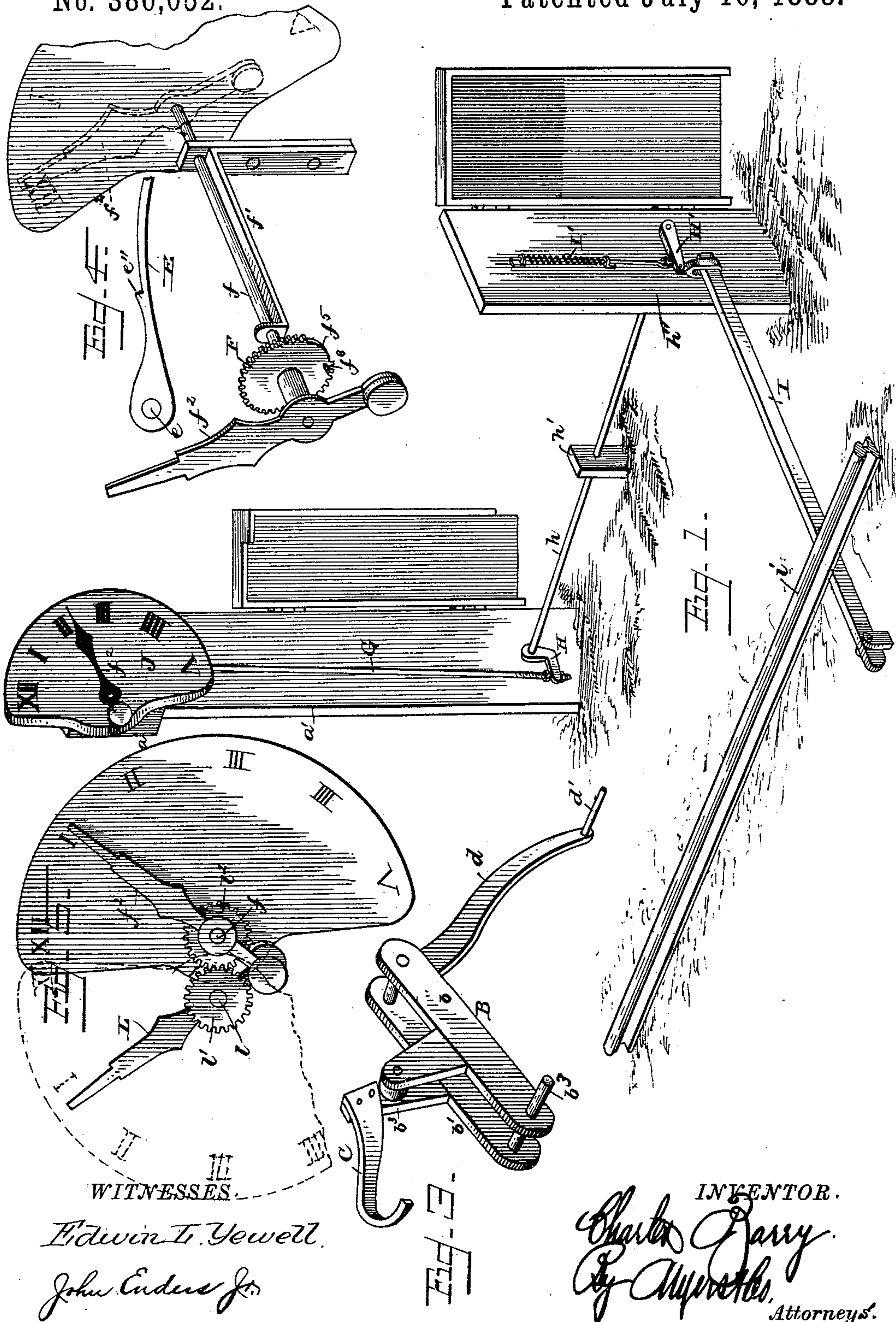


2 Sheets—Sheet 1.

No. 386,052.

Patented July 10, 1888.



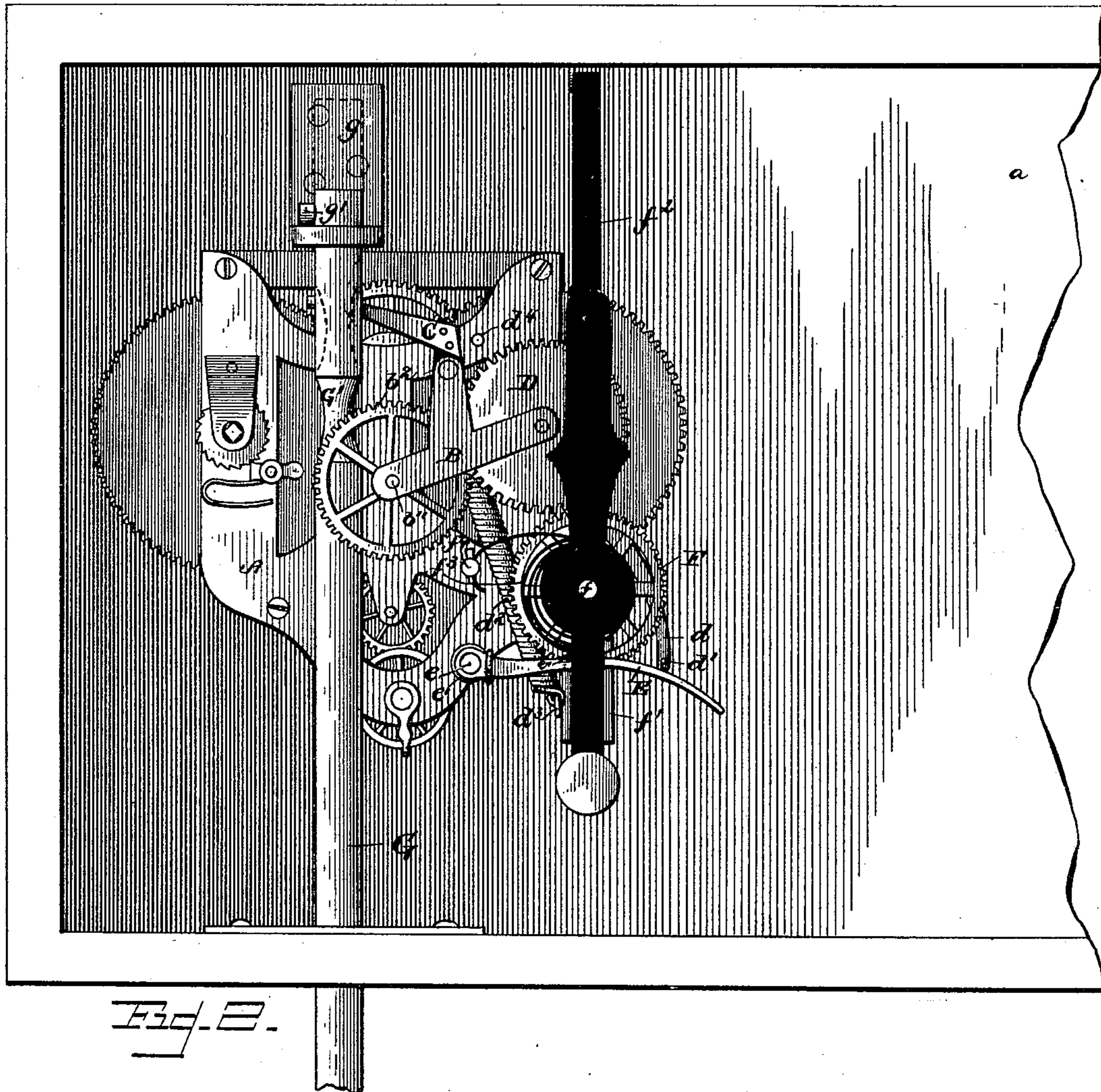
(No Model.)

2 Sheets—Sheet 2.

C. BARRY.
RAILWAY TIME SIGNAL.

No. 386,052.

Patented July 10, 1888.



WITNESSES.

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UNITED STATES PATENT OFFICE.

CHARLES BARRY, OF CORNING, NEW YORK, ASSIGNOR OF FIFTY-ONE ONE-HUNDREDTHS TO AUSTIN LATHROP AND GEORGE J. MCGEE, OF SAME PLACE.

RAILWAY TIME-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 386,052, dated July 10, 1888.

Application filed February 1, 1888. Serial No. 262,637. (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 Railway Time-Signals, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention pertains to certain new and useful improvements in railway time-signals, having for its object the provision of simple and highly efficient means for denoting to a limited (desired) extent the time of passage of
15 a train, to enable the engineer of the next subsequent train to readily read or note the time of passage of said preceding train.

The invention therefore comprises the detail construction, combination, and arrangement of the parts, substantially as hereinafter fully set forth, and particularly pointed out in the claims.

20 In the accompanying drawings, Figure 1 is a view in perspective showing my invention in use. Fig. 2 is an enlarged front elevation of the clock mechanism, showing my invention applied thereto, the front or cover of the inclosing-casing being removed. Fig. 3 is an enlarged detail perspective view of the lever-frame. Fig. 4 is a similar view of the index-hand and its shaft and showing a rear dial and index-hand, the latter being in dotted lines; and Fig. 5 is a view showing two index-hands for traveling in opposite directions and the re-
35 spective dials thereof.

Referring to the drawings, A designates the ordinary time or clock mechanism secured within its inclosing-casing *a*, disposed upon the upper end of a supporting-post, *a'*, placed
40 in practice a little to one side of the track or rails, as shown.

B is a lever-frame composed of two parallel plates, *b b'*, loosely pivoted on the shaft *b²* of the minute-wheel *b²* of the clock mechanism,
45 one of said plates being on either side of the wheel, which rotates between the same. The plate *b* has a projecting portion, *b³*, through the outer end of which is passed a suitable pin for connecting the same to the lever-frame, as
50 shown. To the extreme upper end of the le-

ver-frame B is connected one end of a curved or hooked arm, C.

D is a wheel journaled between the outer ends of the plates *b b'*, between which it is designed to rotate, and said wheel gears with the
55 minute-wheel *b²*, of which it is a counterpart. A downwardly curved or bent arm, *d*, is connected at its upper end to the plate *b'* of the lever-frame, and at its extreme lower end is provided with a projecting pin, *d'*. 60

To the lever-frame B is connected one end of a coil-spring, *d²*, secured at its other end to a rod, *d³*, projecting from the case *a*. The office of said spring is to hold the lever-frame in the position shown in full lines, Fig. 2, the
65 movement of said frame being limited by a projecting pin, *d⁴*, with which it comes in contact.

E is a spring-actuated arm pivoted at one end of a short post, *e*, of the frame of the clock-work, 70 and around this post is a coil-spring, *e'*, connected at one end to said arm. This arm is provided with a shoulder, *e''*, and with an outer curved portion which is always in contact with the pin *d'* of the arm *d*. 75

F is a wheel rigidly secured upon or keyed to a shaft, *f*, supported by a suitable two-arm bracket, *f'*, attached to the case *a*, and upon the end of this shaft is secured the large index-hand *f²*, upon the end of the short arm of 80 which is a small weight, as shown. To a drum on this shaft is secured one end of a coil-spring, *f³*, the outer end of which is connected to a post, *f⁴*, of the clock-frame. The wheel F has a segment of its toothed surface removed, as 85 at *f⁵*, and is provided with a pin or stud, *f⁶*, as shown. In practice the hand-wheel F is normally in engagement with the outer minute-wheel, D, and is moved thereby, save when the segmental portion is opposite the teeth of 90 said minute-wheel, when the former wheel ceases to revolve.

G is a rod projected through the bottom of the casing and through an aperture in the outer end of a right-angular bracket, *g*, within said 95 casing, said rod being held from passing entirely from said bracket by a projecting screw, *g'*, of said rod. A circular groove, *G'*, having beveled or inclined ends, is formed in that part of the rod G with which the curved or hooked 100

end of the arm C is in contact. The lower end of the rod G is threaded and provided with two nuts, one above and one below the arm of the bell-crank lever, so as to regulate the extent of the movement of said rod. This rod G is connected at its lower end to one arm of a bell-crank lever, H, the end of the other arm of which is rigidly secured to a circular rod or pipe, *h*, projected through an aperture therein, the end of said rod or pipe *h* being inserted into a hole or opening of the post *a'*, near the lower end thereof. The rod or pipe *h* extends horizontally some distance, and after being passed through loosely-fitting apertures of short blocks *h'* is projected through an aperture of a second smaller post, *h''*, and upon this end of the rod or pipe is secured one end of a second bell-crank lever, H', the other arm of which is preferably in the form of a loop or stirrup, and has placed therein one end of a lever, I, which extends at right angles to the rod or pipe *h*, and after being passed under the rail *i* of the track is fulcrumed upon a short post between the two rails, said lever being always in contact with the under side of the rail *i*. A spring, I', is connected at one end to the post *h''* and at its lower end to the bell-crank lever H', the office of which is to hold the lever I in contact with the rail *i*; or said spring can be disposed in under said lever, if desired, and form an elastic cushion therefor. The dial or face J of the signal is composed, preferably, of the ordinary Roman figures from XII to V, but may be of a greater or less extent, as desired.

The operation of my invention is as follows: Supposing the index-hand *f*² to be at the top of the dial when the clock is wound, the motion transmitted through the two minute-wheels will cause the movement of the wheel F, and consequently the index-hand will move over the dial or face until the segmental portion of said wheel reaches the outer minute-wheel, at which time the hand will have reached the bottom number on the dial. When a train or engine passes over the rails, the depression of the rail *i* will cause the lowering of the lever and the pulling or depression of the spring I', and consequently causing, through the agency of the bell-crank lever H', the partial revolution of the rod or pipe *h*, which, through the bell-crank lever H, will pull downwardly on the rod G. This downward movement will cause the rod G to bear on the upper curved or hooked end of the arm C, which will affect the revolution of the outer portion of the lever-frame and outer minute-wheel, disengaging said latter wheel from the index-wheel F, immediately upon which the index-hand will traverse the face or dial, the same being caused by its spring *f*³ and weighted end. When said hand reaches the top of the dial, the pin or stud *f*⁶ of the wheel F will be simultaneously engaged by the shoulder of the spring-actuated arm E, which is now slightly elevated by reason of the curved arm

d being raised by the elevation of the lever-frame. The lever-frame is returned to its normal position after the passage of the train by reason of the elevation or raising of the rod G, effected by the spring I', attached to the bell-crank lever H', said lever-frame being aided in its movement by its coil-spring *d*². 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 by reason of the intermeshing of the outer minute-wheel, D, and the wheel F, and thus exactly indicate to the engineer of the next subsequent train the time of passage of the last preceding train, provided said subsequent train passes that point before the index-hand has reached the full extent of its movement. This operation is repeated as each train passes the signal, the index-hand being returned to its starting-point every time the lever I is depressed, and upon the elevation of said lever the index-hand again starts on its movement. As shown in Fig. 4, a second minute-hand, *f*², can be secured on the rear end of the revolving shaft *f*, and a face or dial, J', is placed on the rear of the case over which said hand travels, said dial being the counterpart of the dial J. The object of this arrangement is to enable the engineer to see whether the hand or index has been reset.

If desired, two signals can be employed by having dials on each side and hands moving in opposite directions, the auxiliary hand L being operated by the same mechanism as the hand *f*². Its shaft *l* is provided with a pinion, *l'*, gearing with a similar pinion, *l''*, on the shaft *f*, so as to give said shaft the opposite movements. (See Fig. 5.)

I claim as my invention—

1. As an improvement in railroad-signals, the pivoted lever-frame carrying a wheel and having a curved or hooked arm, the index-shaft, the wheel secured thereon, the spring encompassing said shaft, and the vertical rod engaging said curved or hooked arm, substantially as shown and described.
2. The pivoted lever-frame having the curved arm *d*, provided with a projecting pin, in combination with the index-shaft wheel having a pin or stud and the spring-actuated arm, substantially as shown and described.
3. The combination, with the clock mechanism, of the lever-frame, the outer minute-wheel carried thereby, the index-shaft carrying the index-hands, the wheel having a segment of its teeth removed, the curved arm *d*, the spring-actuated arm, and the coil-spring connected to said lever-frame, substantially as shown and described.
4. The combination, with the lever-frame carrying a wheel, the curved or hooked arm C, secured to said frame, and the index-shaft wheel, of the vertical rod having a circular groove and the track-lever having connection with said rod, substantially as shown and described.

5 5. The combination, with the clock mechanism and the index-hand together with its shaft and wheel, of the vertical rod having a grooved portion in contact with said lever-frame, the bell-crank levers, the rod or pipe, the spring connected to one of said bell-crank levers, and the lever extending under the track, substantially as shown and described.

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

CHARLES BARRY.

Witnesses:

WM. HELMICK,
C. B. CAYWOOD.