2 Sheets--Sheet 1.

R. L. KILPATRICK.

Railroad-Signal.

No. 161,519. Patented March 30, 1875.

Fig. 1.

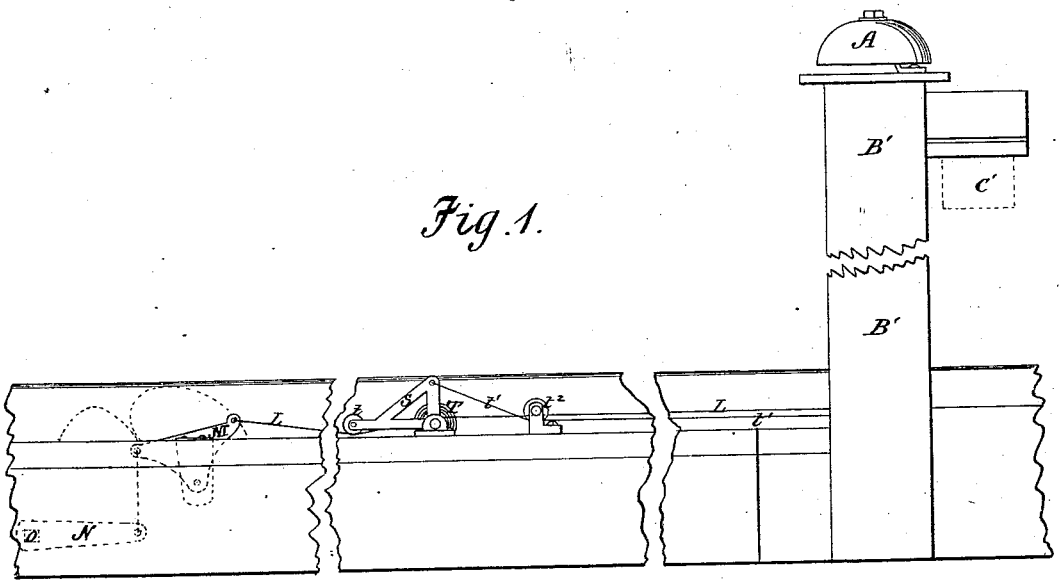
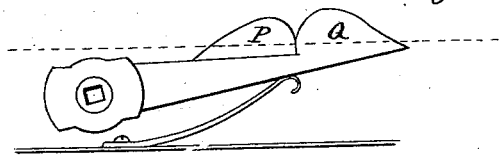
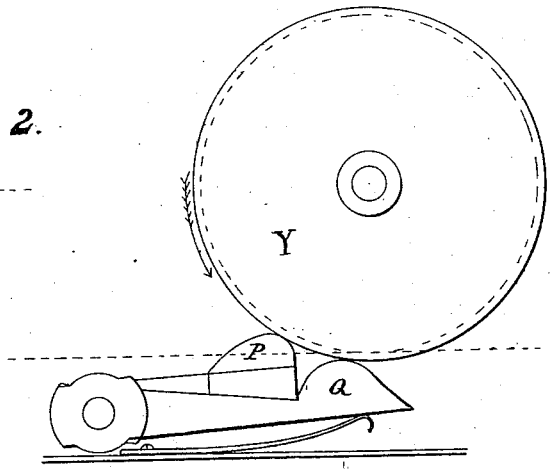
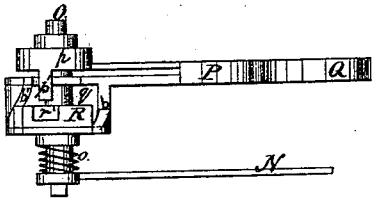
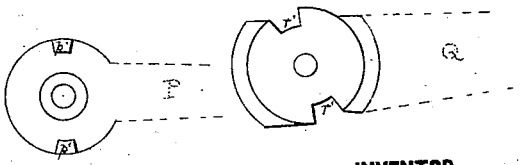


Fig. 2.









WITNESSES:

W. W. Hollingsworth

Solon C. Kemon

INVENTOR:

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ATTORNEYS.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

R. L. KILPATRICK.

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Fig. 4.

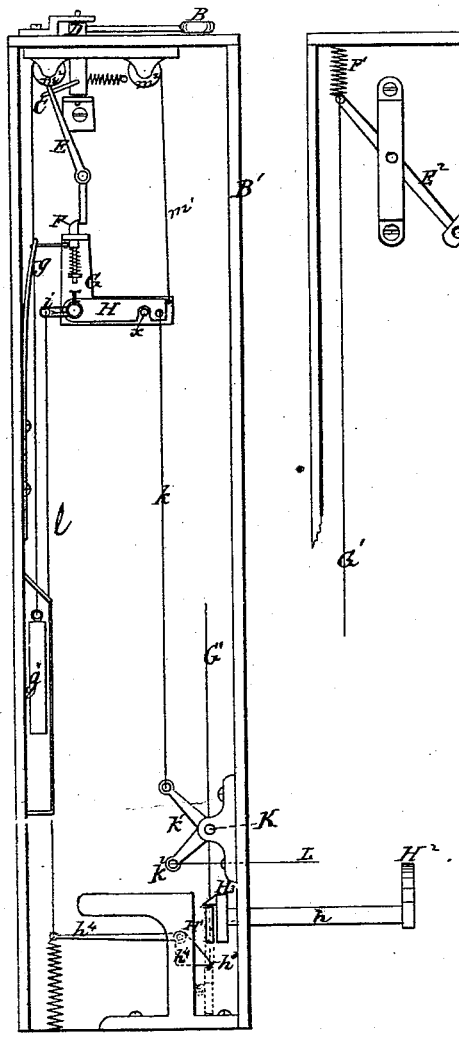
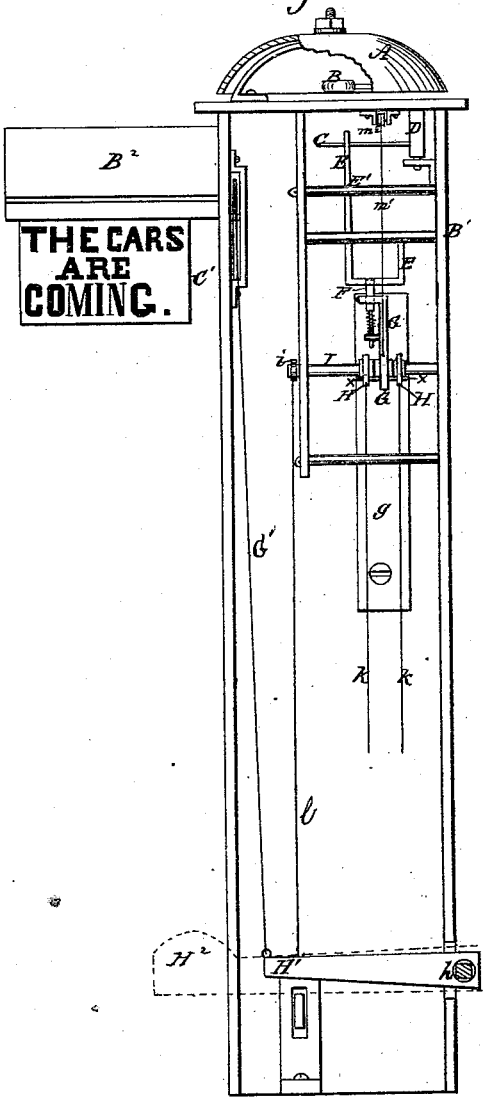


Fig. 5

Fig. 3.



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UNITED STATES PATENT OFFICE.

ROBERT L. KILPATRICK, OF SPRINGFIELD, OHIO.

IMPROVEMENT IN RAILROAD-SIGNALS.

Specification forming part of Letters Patent No. **161,519**, dated March 30, 1875; application filed December 29, 1874.

To all whom it may concern:

Be it known that I, R. L. KILPATRICK, of Springfield, Clark county, Ohio, have invented an Improved Railroad Signaling Mechanism, of which the following is a specification:

Figure 1 is a side elevation; Fig. 2, a series of detail side views; Figs. 3, 4, and 5, elevations (in section) of the hollow signal-post and its mechanism.

The invention will first be fully described, and then pointed out in the claims.

As a train of cars approaches a station, a wheel, Y, strikes an arm, P, whose hub *p* is loose on shaft O, but is locked by projections *p'*, that fit into notches *r'* of a sliding clutch, R, turning with said shaft. When the shaft O is thus rocked, its arm N turns the connected lever M, thereby pulling the wire L, that is attached to the crank-shaft *k'*. The latter is connected, by a wire, *k*, with a loose arm, H, on a rock-shaft, I, where is also located a rigidly-attached angle-lever, G, in which is the vertically-arranged spring-catch F, beveled on its free end, and to which is connected a retracting-spring, *g*. The rocking of shaft I causes the catch F to turn the lever E, (that ordinarily rests on a bar, E^1,) thereby turning the armed rock-shaft C D, which acts upon the hammer-shaft, and thus draws back the hammer B. As soon as the catch F ceases to carry the short end of lever E, the spring of hammer-shaft causes the hammer to strike the bell A, and thus give the alarm.

When the shaft I is rocked by the approaching car-wheel, a rear arm, *i*, is elevated, pulling the wire *l*, lifting the catch h^4, and depressing its forward end, so as to allow loose arm H^1 to be raised by a wire, G', actuated by a spring, F', at the top of hollow post B'. This wire and spring are attached to a lever, E^2, at one end, while the other end of said lever works in and lifts an arm, D', rigidly attached to a rock-shaft, A', that carries the signal-card C'. The latter is thus thrown down at the same time that the alarm is sounded. As soon as the car-wheel has left the treadles P Q, the spring *g* throws back the crank-lever G, with the loose arms H, that rest upon its pins *x x*, when the catch F resumes its position behind the short lower arm of lever E, and, in turning back shaft I, depresses the arm *i*, that connects, by wire *l*, with the catch-lever h^4. The car-wheel now, passing over the treadle H^2 at the station, rocks the shaft *h*, and, with its rigid arm H^3, that has a side hook at the end, bears down the loose arm H^1 until it has passed the spring-catch h^4, and is held on the under side thereof. The signal is now ready to be operated again by a train coming from either direction, as one wire, *k*, connects with a treadle mechanism on opposite sides of the station. The wire m^1, or other flexible connection between the angle-lever G and weight *g'*, may be employed by passing it over pulleys m^2, to retract the lever.

In order to prevent the wheel from operating the treadle after a train has passed the station, I interpose between the clutch mechanism *p p'* and R *r'* the loose hub *q* of a treadle, Q, making on it and the sliding hub R corresponding but reversed inclines *b b'*. When the cars have passed the station they will first strike the treadle Q, which, turning loosely on shaft O, will, by the inclines *b b'*, slide the part R from the one *p*, disconnect them, and allow the treadle C to be turned loosely on the shaft, thus preventing any sound of the alarm.

It will be observed that the wire L passes under a pulley, *t*, on outer end of the long arm of an angle-lever, S, while the other end of the lever is provided with a spring-shaft, T. The wire t^1, connecting the upper end of the short arm of angle-lever, after passing under a pulley, t^2, extends to some point or fastening, which may, if desired, be adjustable. The spring-pressure thus brought to bear upon the wire, although not very great, will keep it taut under all ordinary circumstances.

What I claim as new is—

1. The combination, with a shaft, O, that operates an alarm mechanism, of the treadles P Q, having hubs *p p' q b'*, and the spring-pressed sliding part-clutch R *r' b*, arranged to operate in the manner described.

2. The combination, with wire L, of the angle-lever S, having pulley *t*, spring-shaft T, and holding-wire t^1, applied as and for the purpose specified.

3. The combination, with hammer-shaft, of the armed shaft C D, lever E, cross-bar E^1,

angle-lever G, having spring-catch F, shaft I, arm H, and wires *k* L, extending to treadle, as and for the purpose described.

4. The combination of loose arm H^1, shaft I, having arm *i*, the wire *l*, and spring-catch lever h^4, as and for the purpose set forth.

5. The combination of treadle H^2, shaft *h*, having rigid hook-arm H^3, the wire G′, spring F′, lever E^2, slotted arm D′, and signal-card shaft A′, as and for the purpose specified.

ROBERT L. KILPATRICK.

Witnesses:

ROBERT T. LANG,

J. R. GUY.