HUBERT & DEROCQUIGNY.

Railroad Signal.

No. 41,341. Patented Jan. 19, 1864.

Fig. 2

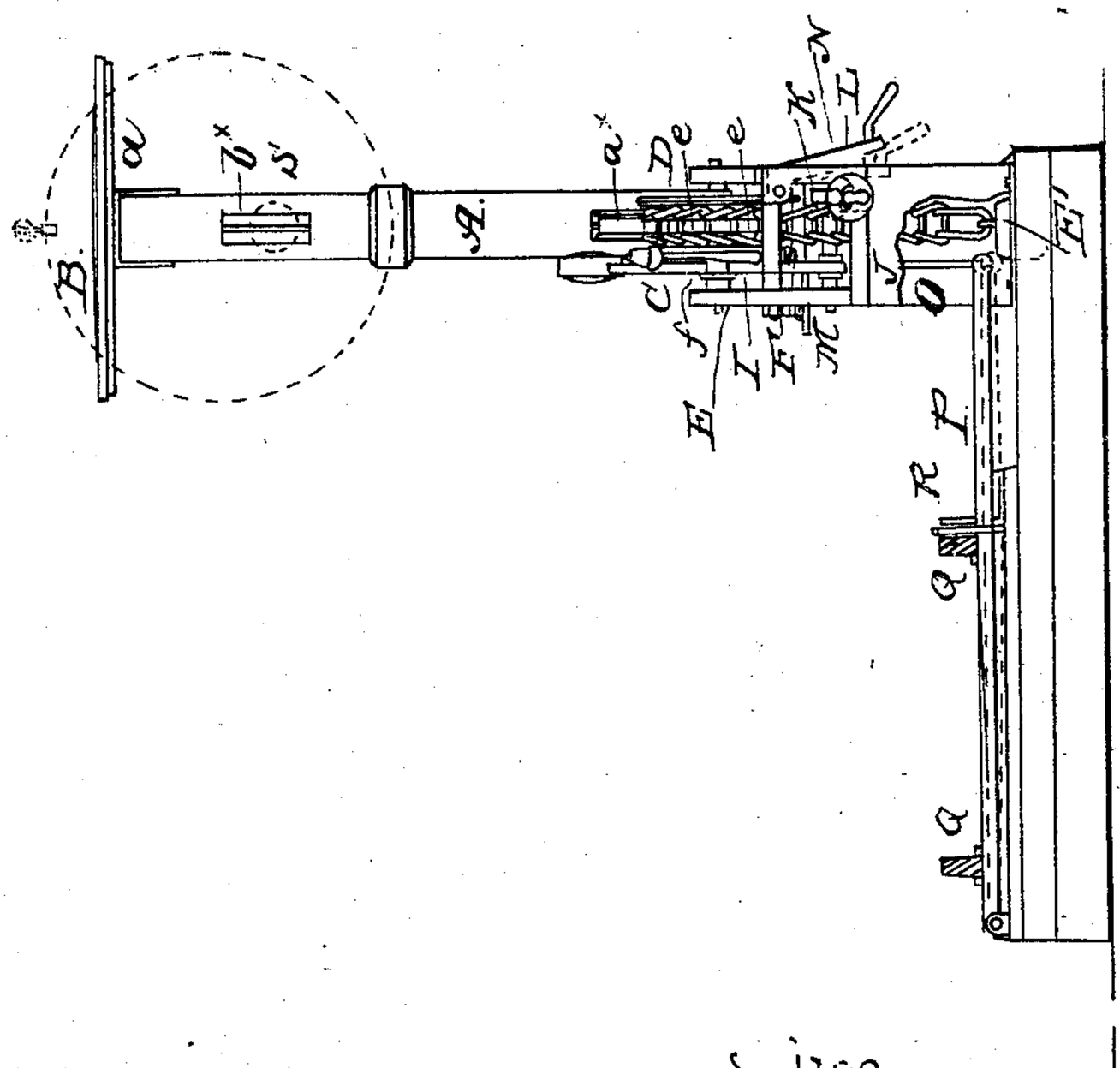
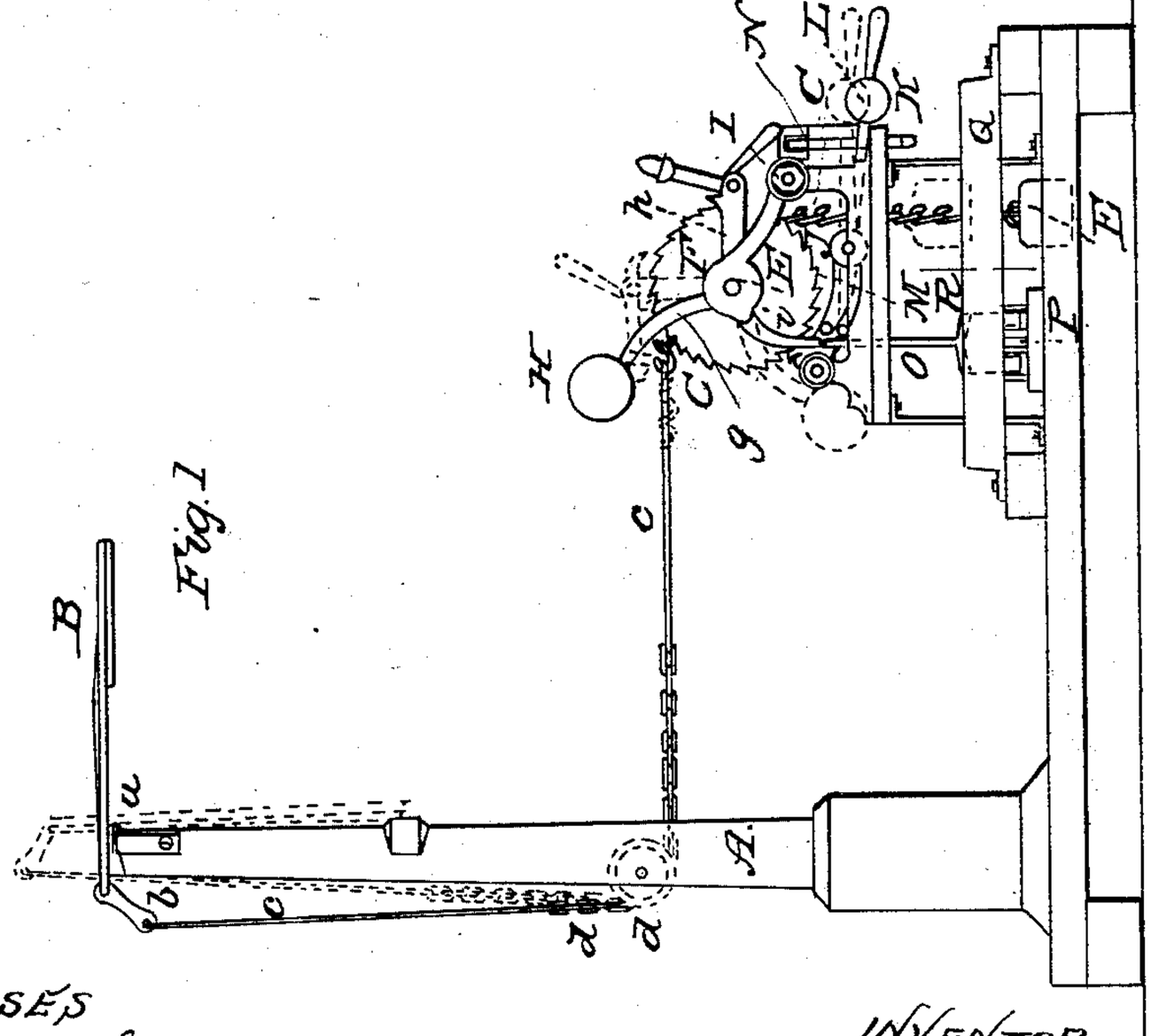


Fig. 1



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN RAILROAD-SIGNALS.

Specification forming part of Letters Patent No. **41,341**, dated January 19, 1864.

To all whom it may concern:

Be it known that we, F. J. B. HUBERT and F. C. A. DEROCQUIGNY, both of the city, county, and State of New York, have invented a new and Improved Railroad-Signal; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of our invention; Fig. 2, a front view of the same, the rails of the track adjoining the place where the invention is placed being in section, as indicated by the line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts in the two figures.

This invention relates to a new and improved signal for railroads for preventing trains coming into collision, and also to prevent them from passing on wrongly-adjusted switches, and on draw-bridges when the draws are open.

To enable those skilled in the art to fully understand and construct our invention, we will proceed to describe it.

A represents an upright, to the upper part of which a disk, B, is attached by a hinge, *a*, said hinge being at one edge of the post, so that the disk may be adjusted from a vertical to a horizontal position, and vice versa, the hinge *a* being attached to the disk B near its upper edge, so that the latter may, by its own gravity, fall to a vertical position when permitted to thus act. To the upper edge of the disk B there is attached an arm, *b*, which is connected by rods *c* and a chain, *d*, to a chain, C, which works over a pulley, D, in a framing, E, the latter being placed at any convenient or desired distance from the upright A, to which the disk B is attached, and the chain *d* passing under a pulley, $a^{\times}$, in the uprightA.

The chain C works in or between teeth or cogs *e* on the pulley D, so as to prevent it from slipping thereon, and to the lower end of the chain C there is attached a weight, E′. At one side of the pulley D there is a ratchet, F, and upon a shaft, G, on which the pulley D is fitted loosely, there is also placed loosely a hub or collar, *f*, having three arms, *g h i*, attached to it. One of these arms, *g*, has a weight, H, at its outer end, the arm *h* has a loaded or weighted pawl, I, attached to it, and the arm *i* serves as a catch for the purpose hereinafter set forth.

In the lower part of the framing E there is placed a shaft, J, having an arm, K, attached which is provided with a weight, L, at its outer end, and said shaft also has an arm, M, attached, which arm is provided with a notch, *j*, to receive the end of the arm *i*. The arm M projects from the shaft J in an opposite direction to the arm K, and the weight L has a tendency to keep the arm M elevated as high as it is permitted to move. The arm K is kept elevated, and the arm M consequently kept down, when desired, by means of a drop-catch, N, which passes underneath K each time it is raised. The catch N is suspended to one side of the framing E.

To the arm M there is attached a pendent rod, O, the lower end of which is connected to a lever, P, which extends transversely underneath the rails Q Q, and has an upright plate, R, attached to it, said shaft extending up by the side of one of the rails Q, and rather above it when the arm M is in an elevated state.

The operation is as follows: Suppose, for instance, that the disk B be in a vertical position to serve as a warning to a coming train. In this position of disk B the arm K of the shaft J will be elevated and kept in that position by means of the catch N. In order to raise the disk B, the operator or attendant draws the catch N from underneath the arm K, and adjusts the pawl I in gear with the ratchet F, and thereby turns the pulley D and moves the arm *i* until it catches into the notch *j* of the arm M. This turning of the pulley D, of course, moves the chain C and elevates the disk B, which is retained in an elevated state by the arms M, *i*, and pawl I. A train in passing along, it will be seen, will force down the lever P in consequence of the wheels coming in contact with the plate R, and, as this lever is connected with the arm M by the rod O, said arm will be drawn down and the arm *i* of the hub or collar *f* will be liberated, and the pulley D will, under the weight of the disk B, be turned back, the disk falling to a vertical position by its own gravity and the hub or collar *f* turning on the shaft G with pulley D. When the arm M is drawn down to liberate the arm *i*, the arm K, of course, rises and

the drop-catch N passes underneath it, so as to hold the lever P down and keep the plate R down free from the wheels of a succeeding train, or free from the wheels of the back cars of a train, thereby preventing all unnecessary action of the lever P, and consequent wear and tear. The attendant or operator may liberate the pulley D at any time by raising the pawl I.

The disk B may be placed at any convenient or desired distance from the pulley D, the chain *d* and rod *c* resting upon or passing over supports placed at a suitable distance apart.

By this invention trains may be effectually prevented from running out of time or coming in close contact with each other, for the attendant will only elevate the signal-disk B when a proper time has elapsed after the passing of a train, and in the application of the invention to draw bridges and switches it can be readily operated by an attendant so as to show the warning whenever necessary.

The weight H on the arm *h* is designed to throw the pawl I back over the ratchet F when the pawl is raised from the ratchet, and the weight E′ is simply to keep the chain C in a proper state of tension.

The face side of the disk B is designed to be painted red, the usual sign of danger, and said disk has a piece of red glass, S, inserted in it, which, when the disk is in a vertical position, is directly opposite an aperture, $b^{\times}$, in the upright A, in which aperture a lamp or lantern is placed. Thus a white light is shown when the disk is up and a red light shown when the disk is down. The light or lantern is, of course, only used at night.

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

1. The pulley D, provided with the ratchet F and chain C, in combination with the signal-disk B, suspended on a horizontal axis or shaft, substantially as herein shown and described, and all used in connection with the pawl I, and arm *i*, attached to the hub or collar *f*, the arm M, attached to shaft J, and the lever P, connected to arm M, and provided with the upright plate R, all being arranged to operate substantially as set forth.

2. The arm K, attached to shaft J, in combination with the drop-catch N, arranged to operate as and for the purpose specified.

3. The colored glass S in the signal-disk B, in combination with the lamp or lantern in an aperture, $b^{\times}$, in the upright A, when operated by the mechanism as above set forth, as and for the purpose specified.

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