P. C. BRAGG.

Railway-Switch.

No. 160,076 Patented Feb. 23, 1875

Fig 1

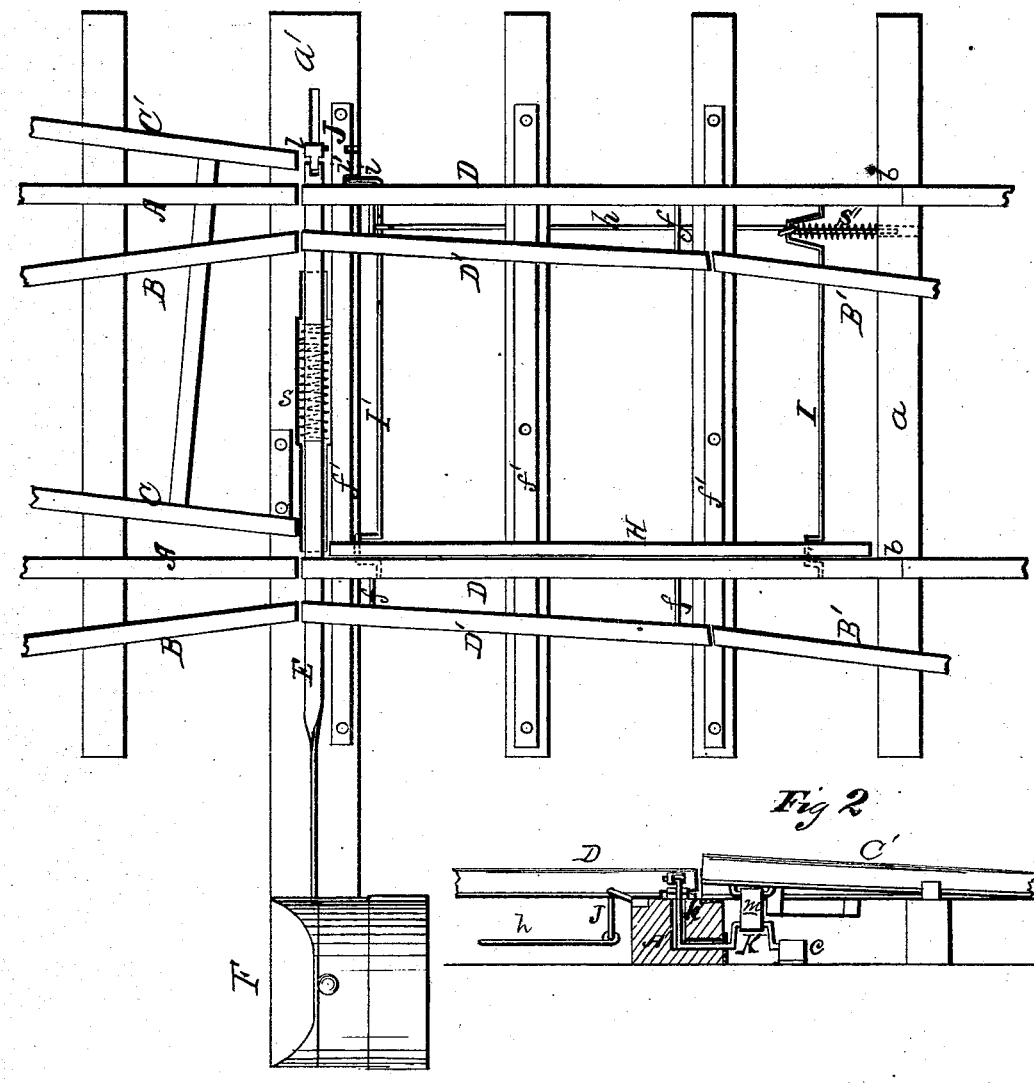

Fig 2

WITNESSES

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UNITED STATES PATENT OFFICE.

PERRY C. BRAGG, OF MAYFIELD, KENTUCKY.

IMPROVEMENT IN RAILWAY-SWITCHES.

Specification forming part of Letters Patent No. **160,076**, dated February 23, 1875; application filed November 14, 1874.

To all whom it may concern:

Be it known that I, PERRY C. BRAGG, of Mayfield, in the county of Graves and State of Kentucky, have invented a new and valuable Improvement in Railroad-Switches; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawing is a representation of a plan view of my railroad-switch. Fig. 2 is a side view of the same. Fig. 3 is a side view with section, showing spring.

This invention has relation to switches which are designed for allowing a train to run on a siding or return to the main track therefrom; and the nature of the invention consists in combining, with a treadle arranged alongside of one of the rails of the switch, crank-shafts having their bearings in the rails of the said switch at each end of the said rails, the said crank-shafts being connected by a rod, whereby a pawl or stop upon the end of the crank nearest the sidings will be thrust into a rack rigidly secured to the common cross-tie of the main track and sidings when the said treadle is actuated by the flanges of the wheels of a passing train, thereby locking the switch and preventing its casual displacement.

In the annexed drawings, A designates the rails of the main track, B those of a left siding, and C C′ those of a right siding, all of which are attached to ties *a a′* in the usual well-known manner, with the exception of the latter, which is hinged to the cross-tie *a*, so as to have a slight vertical vibration, for a purpose which will hereinafter appear. D indicates the rails of the switch, which are pivoted at *b* to a cross-tie, *a*, at that end thereof where they adjoin the continuation of the main track. These rails are connected at their free ends by a tie-brace, E, which extends out laterally a certain distance to a switch-box, F, where it is pivoted to the lower end of a pivoted lever, G, having upon its upper end a segmental toothed rack, G′, which engages with a pinion, F′, upon a shaft, *g*, actuated by a common crank-arm, as shown in Fig. 2. D′ indicates rails, which are rigidly secured by means of tie-rods *f* to the switch-rails D, and which register, when the switch is set for the main track, with the rails B of the left siding, and with those B′ of a third siding. *f′* designates the usual metallic plates, which are rigidly secured to the upper surfaces of the cross-ties, for the purpose of affording bearing-surfaces for the rails D D′. H designates a treadle, which may be of metal or wood, and which is applied alongside of one of the switch-rails D. This treadle is mounted upon double crank-shafts I I′ having their bearings in the rails D of the switch, at or near both ends thereof, and connected by a rod, *h*. The shaft I′ is provided with a pawl or stop, *i*, which engages with notches *i′* in a ratchet-plate, J.

When a train passing up or down track, or to or from the sidings, reaches the switch, the flanges of the wheels will depress the treadle, operating the cranks, and causing the pawl *i* to become engaged in a notch, *i′*, of ratchet-plate J, thereby effectually preventing all lateral displacement of the switch.

The tie-brace E is hinged at its free end to a link, *l*, which is also hinged to an arm, *k*, of a vertically-vibrating crank-shaft, K, having its bearings in the tie *a′* and in a standard, *c*, rigidly secured in any suitable manner to the soil. This crank-shaft is connected by a rigid arm, *m*, to the rail C′, which has, as was before mentioned, a slight vertical vibration, and which, when not depressed by a passing train, stands with its free end above the rails A of the main track; hence, when a car coming from the siding C C′ strikes the rail C′, its depression actuates the crank K, which, through the medium of the arm *k*, the link *l*, and tie-brace E, actuates the switch D, causing it to be set in line with the rails C C′ automatically. This position is maintained until the car or cars have left the switch and entered the main track, when the said switch will be set in line with the main track by the recoil of a strong spring, *s*, arranged in the cross-tie *a′* below the level of the upper surface thereof, which has been compressed by the automatic action of the switch. When the latter is worked by hand the same compression takes place, and when the last car going upon the siding C C′ has left the switch it will be set

ready at all times for the passage of through trains by the reaction of the spring *s*. *s'* designates a spring, which is applied upon the end of the rod *h*, and which is compressed when the treadle is depressed. This spring is designed by its expansion to replace the treadle in position to be actuated by the next train.

Instead of springs *s s'* I may use weights; or I may employ both weights and springs, if it proves necessary or desirable.

In practice, these springs are designed to be placed inside of water-proof cast-iron boxes or cases.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a railroad-switch, the combination, with the treadle H, of the double crank-shafts I I', rod *h*, pawl or stop *i*, and rack J, for the purpose of locking the switch, substantially as specified.

2. The combination, with the treadle crank-shafts I I' and rod *h*, of the spring *s'*, substantially as specified.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

PERRY C. BRAGG.

Witnesses:

G. W. BARTON,

JNO. L. DISMUKES.