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Fig. 5.

Fig 6.

Fig. 7.

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# UNITED STATES PATENT OFFICE.

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## SAFETY-STOP-SIGNAL ATTACHMENT FOR RAILWAY-SIGNALS.

No. 913,536.

Specification of Letters Patent.

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*To all whom it may concern:*

Be it known that we, JOHN M. MOORE and FRANK F. KAMP, JR., citizens of the United States of America, residing at (1) Bridgeville, (2) Lawrence, in the county of (1) Allegheny, (2) Washington, and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Stop-Signal Attachments for Railway - Signals, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a safety stop signal attachment for railways, and the primary object of our invention is to prevent accidents by trains running past signals when set at danger.

Another object of our invention is to locate the safety stop signal a prescribed distance back from the switch point, draw-bridge, railroad crossing, or in fact any place where it would require a train to be stopped, thereby preventing accidents, the destruction of property and in all probability the loss of life.

A further object of our invention is the provision of novel means for automatically applying air-brakes of a train through the intermediacy of a semaphore signal.

The present invention is an improvement on the device shown and claimed in Letters Patent No. 870,453, granted to us November 5th, 1907, and aims to provide means for insuring the return of the brake valve actuating rod to its proper position after each actuation thereof, as well as insuring the actuating rod normally maintaining its proper position for actuation by the track device.

In the drawings, Figure 1 is a vertical section of a signal post with our improvement shown in elevation. Fig. 2 is an elevation on a large scale of the engineer's brake valve and parts appurtenant thereto. Fig. 3 is an elevation partly in section of the brake operating mechanism, Fig. 4 is a bottom plan of the brake valve shaft. Fig. 5 is a view in perspective on an enlarged scale of the guide brake operating slide. Fig. 6 is a similar view of the slide for operating the brake valve, and Fig. 7 is a top plan view of the brake valve operating means.

The reference numeral 1 designates a hollow post or tower upon which a semaphore arm 2 is pivotally secured, the usual electric motor 3 being arranged at the top of the post

to operate the arm 2. At the base of the hollow post 1 is a suitably fulcrumed bell-crank lever 4 connected by a rigid connection 5 to the semaphore arm, and by a link 6 to a slide 7 of inverted T shape.

The slide 7 is movably supported within a guide 8 corresponding in contour to the slide, and secured upon a support 9 at one side of the track 10. The slide 7 is provided on its free end with a beveled lug adapted to be struck by the lug 12 formed upon a disk 13 mounted upon the lower end of a vertical shaft 14 supported in bearings 15 and 15<sup>a</sup>, carried by the locomotive. The disk 13 is guided between parallel guide-plates 16 fixed upon the shaft 14, said guide plates having flared edges to permit of the lug 11 easily moving between said guide plates. Upon the upper end of the shaft 14 is mounted a disk 17, formed with a lug 18, adapted to engage a corresponding lug 19 formed upon a disk 20, mounted upon the stem 21 of the engineer's brake-valve 22.

Arranged between the disk 17 and the bearing 15<sup>a</sup> is a coil spring 25, said spring being employed to retain the shaft 14 in its normal position, and also to return same to its normal position after each actuation.

The utility and operation of the mechanism constructed as above described will be readily understood.

When the semaphore arm 2 is set to indicate danger, the slide 7 is projected towards the track 10, bringing its lug 11 into position to be struck by the lug 12 of the disk 13, so that if the danger signal is not observed by the engineer, the shaft 14 will be turned automatically to operate the brake-valve 22 and set the brakes. The usual lever 23 is fixed upon the upper end of the brake valve stem 21 to be manipulated by the engineer.

Our improved railway safety device is applicable to any automatic or mechanically operated signal that is employed to stop a train. The device is adapted to operate independently of an engineer of a locomotive and is adapted to prevent rear end collisions when used in connection with electric or minute blocks of any kind of signal or semaphore.

Having now described our invention what we claim as new, is;—

The combination with a signal post and a semaphore arm pivotally secured thereto, of a bell-crank lever fulcrumed at the base of the post, a rigid connection between said

arm and said bell-crank lever, a horizontally  
guided slide connected to said bell-crank  
lever, a beveled lug carried by said slide, and  
means carried upon a locomotive and adapted  
5 to contact with said beveled lug and operate  
a brake valve upon the locomotive, com-  
prising a vertical shaft, a disk on the lower  
end of said shaft and having a lug, inter-  
locking shoulder disks each having a lug and  
10 mounted one upon the upper end of said  
shaft and the other upon the stem of said  
brake valve, and a retracting spring ar-

ranged on the vertical shaft at the upper end  
thereof for returning said shaft to its normal  
position for each actuation thereof, substan- 15  
tially as and for the purpose herein set forth.

In testimony whereof we affix our signa-  
tures in the presence of two witnesses.

JOHN M. MOORE,  
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Witnesses:

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