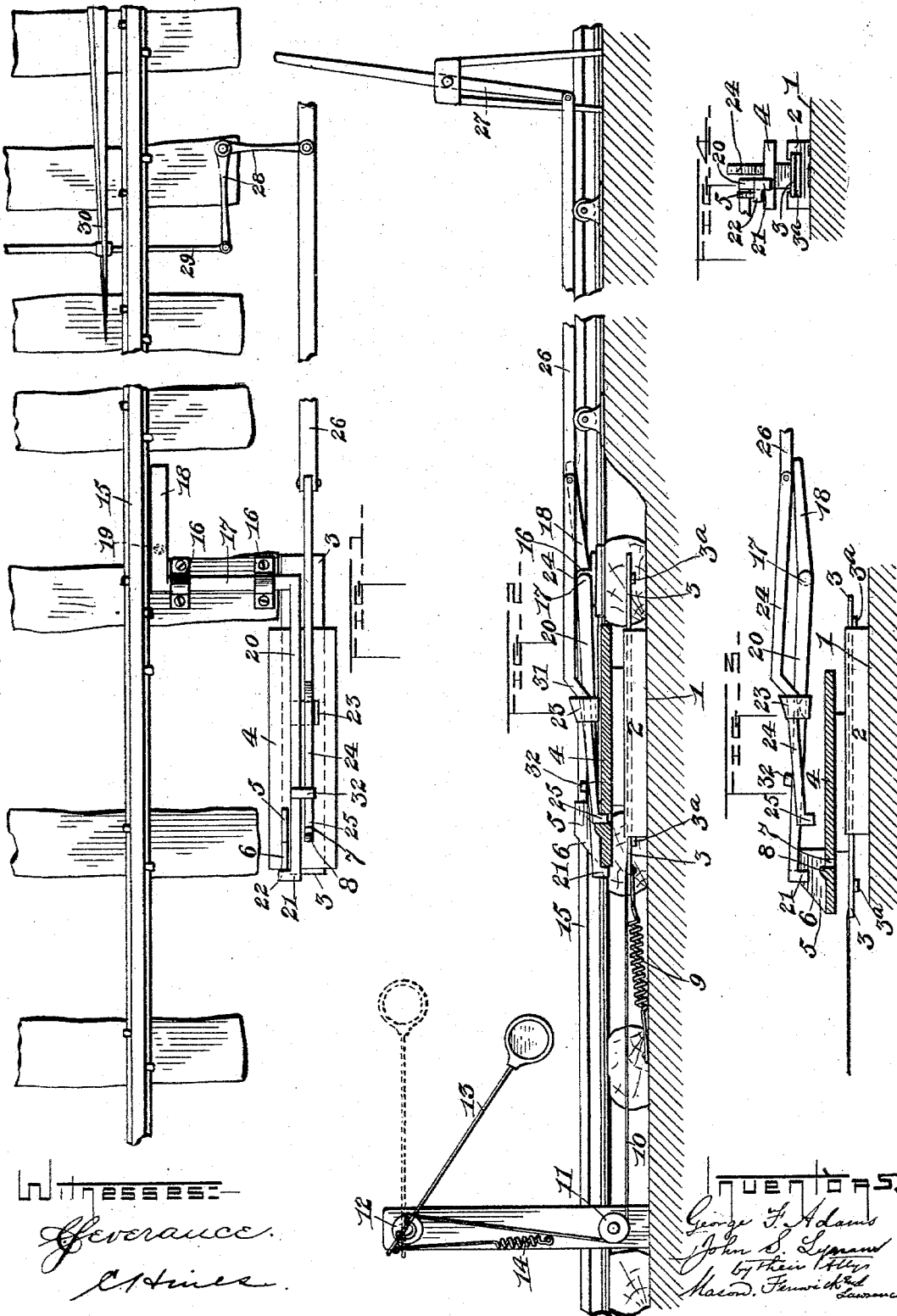


(No Model.)

G. F. ADAMS & J. S. LYNAM.
RAILWAY SIGNAL.

No. 490,220.

Patented Jan. 17, 1893.



UNITED STATES PATENT OFFICE.

GEORGE F. ADAMS, OF NASHUA, NEW HAMPSHIRE, AND JOHN S. LYNAM, OF WINCHESTER, MASSACHUSETTS, ASSIGNORS OF ONE-THIRD TO CHARLES S. COLLINS AND IRA F. HARRIS, OF NASHUA, NEW HAMPSHIRE.

RAILWAY-SIGNAL.

SPECIFICATION forming part of Letters Patent No. 490,220, dated January 17, 1893.

Application filed August 17, 1892. Serial No. 443,334. (No model.)

To all whom it may concern:

Be it known that we, GEORGE F. ADAMS, residing at Nashua, in the county of Hillsborough and State of New Hampshire, and JOHN S. LYNAM, residing at Winchester, Middlesex county, Massachusetts, citizens of the United States, have invented certain new and useful Improvements in Railroad-Signals; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to a combined signaling and switching apparatus, and the object of our invention is to provide means whereby a railway signal may be automatically set at danger by the passing of a train, and remain at danger until released by the signalman, also means whereby such release can be effected and the signal set at safety from a distant station, also means whereby a switch may be operated by the same action which changes the signal from danger to safety; and our invention resides more particularly in the novel construction, combination, and arrangement of parts hereinafter specified, and set forth in the claims.

In the accompanying drawings, Figure 1 is a plan view of our improved mechanism in its locking position. Fig. 2 is a side elevation, partly in section, of the same, the signal standing at safety, Fig. 3 is a side view showing the locking arms raised in the position when the signal stands at danger, Fig. 4 is an end view of the sliding platform, and the locking arms over the same.

Upon a suitable bed 1 by the side of the track is secured a guide block 2 for the slide 3 provided at or near either end with stops 3^a. The slide 3 carries a platform 4 having a bracket 5 with an inclined front edge 6. The platform 4 is also provided with an aperture 7 backed by a boss 8.

To the front end of the slide 3 is secured a retractile spring 9 which serves to draw the platform forward when it is unlocked, and to the same end is secured a cord or rope 10 which passes round a pulley 11 at the foot of the signal post, and thence round an upper

pulley 12 to which it is secured, operating the signal arm 13. To the rear extension of the signal arm is secured a retractile spring 14. It will be seen that when the platform 4 is unlocked and is drawn forward by the spring 9, the rope 10 being slackened, the spring 14 is permitted to exert its resilient force and raises the signal arm 13, setting it at danger.

The unlocking of the platform, and setting of the signal to danger is automatically performed by a passing train as follows:—At the side of a rail 15 of the track, upon the end of one of the sleepers, are secured bearings 16 for a rock shaft 17 provided at one end with a lever 18 lying alongside the rail, with its end normally at a suitable height above the level of the rail to permit the wheels of the passing train to depress the lever arm and operate the rock-shaft and the mechanism connected therewith. A compressed spring 19 secured beneath the lever arm tends to restore it to its normal position. Upon the other end of the rock-shaft is a locking arm 20 terminating in a hook 21 adapted to engage and hold the platform 4 and having also a terminal side extension 22 which moves upon the inclined face 6 of the bracket 5 as the hooked arm and platform move relatively to each other.

Secured to and extending sidewise from the locking arm 20 is a bracket 23, on which rests the slide bar 24, the latter terminating in a hook 25 adapted to engage the aperture 7 of the platform. The bar 24 rises and falls with the locking arm 20 through its connection 23 therewith, so that the hooks 21 and 25 release the platform at the same time. The bar 24 is connected by a rod 26 to a lever bar 27 which may be in any convenient place and of any convenient construction. By means of the bell-crank lever 28 and the rod 29, a switch 30 may be operated simultaneously with the locking of the signal, if so desired. At the rear of the bracket 23 the bar 24 is provided with a sharp rise or incline 31, by means of which when the bar is thrust forward, so that the incline 31 passes to the front of the bracket 23, the hook 25 drops to a lower level.

32 is a lug secured upon the upper edge of

the locking arm 20, and, overhanging the bar 24, prevents it from rising out of position relative to the arm 20.

The operation is as follows:—The danger signal being down, as shown in Fig. 2, and the track open for the train, the car wheel in passing depresses the lever arm 18, and raises the locking arm 20 and with it the locking bar 24, unlocking the platform 4, which thereupon moves forward, slackening the connection 10, and the signal is set to danger by means of the spring 14. After the lapse of the safety interval, when the signalman desires to set the signal to clear, he first thrusts forward the rod 26 and bar 24, and, the incline 31 passing to the front of the bracket 23, the hook 25 drops upon the platform 4 and ultimately into the aperture 7 therein. When the limit of the forward motion has been reached, the signalman draws back the bar 24, and also the platform 4 which is now engaged by the hook 25. This motion of the platform draws down the danger signal by means of the connection 10, and at the same time, the extension 22 moves down the inclined face of the brackets 5, and the hook 21 engages the edge of the platform which is now locked by both locking arms. The spring 19 exercises a positive action in placing the locking arm 20 in position.

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

1. In a railroad signal, the combination, with a slide, of a signal arm operatively connected therewith, a locking arm independent of the slide and adapted to normally hold the same, a rocking lever adapted to lift said locking arm and release the slide, and a lever and bar directly connected with the locking arm, whereby the slide can be returned and locked at any time.

2. The combination of a railway signal, a sliding piece operatively connected therewith, two locking arms locking said sliding piece, both of them adapted to be lifted simultaneously by a passing train to unlock the slide, and one arranged to be operated from a distant station to return and hold the slide, substantially as described.

3. The combination of a railway signal, a sliding piece operatively connected therewith, and two locking arms, one arranged to be lifted by a passing train, and the other arranged to be operated by the first locking arm to unlock the slide, and permit the signal to be set, said second locking arm being operatively connected with a distant station to lock the slide, substantially as described.

4. The combination of a railway signal, a sliding piece operatively connected therewith and carrying a bracket having a rising edge thereon, a locking arm arranged to be operated by a passing train to unlock said sliding piece and permit the signal to be set, the end of said locking arm having a lateral projection resting upon said rising edge, and provided also with a pendent terminal holder to engage said slide and lock the same, substantially as described.

5. The combination of a railway signal, a sliding piece operatively connected therewith, a locking bar, a support therefor, said bar having a rise or bend therein normally to the rear of its support, whereby when said rise has passed across said support, the bar is thrown into locking engagement with the slide, substantially as described.

6. The combination of a railway signal, a sliding piece operatively connected therewith, a rock shaft, a lever arm at the end thereof arranged to be depressed by a passing train, a locking arm at the other end of said shaft, a support or bracket carried thereby, and a locking bar supported by said bracket and operatively connected with a distant station, substantially as described.

7. The combination of a railway signal, a sliding piece operatively connected therewith, a locking bar adapted to engage said piece, a rod connecting said bar with a distant station, a switch arm, and a lever connecting said arm with said rod, substantially as described.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

GEORGE F. ADAMS.
JOHN S. LYNAM.

Witnesses:

JOHN M. BLAKEN,
FREDERICK A. EATON.