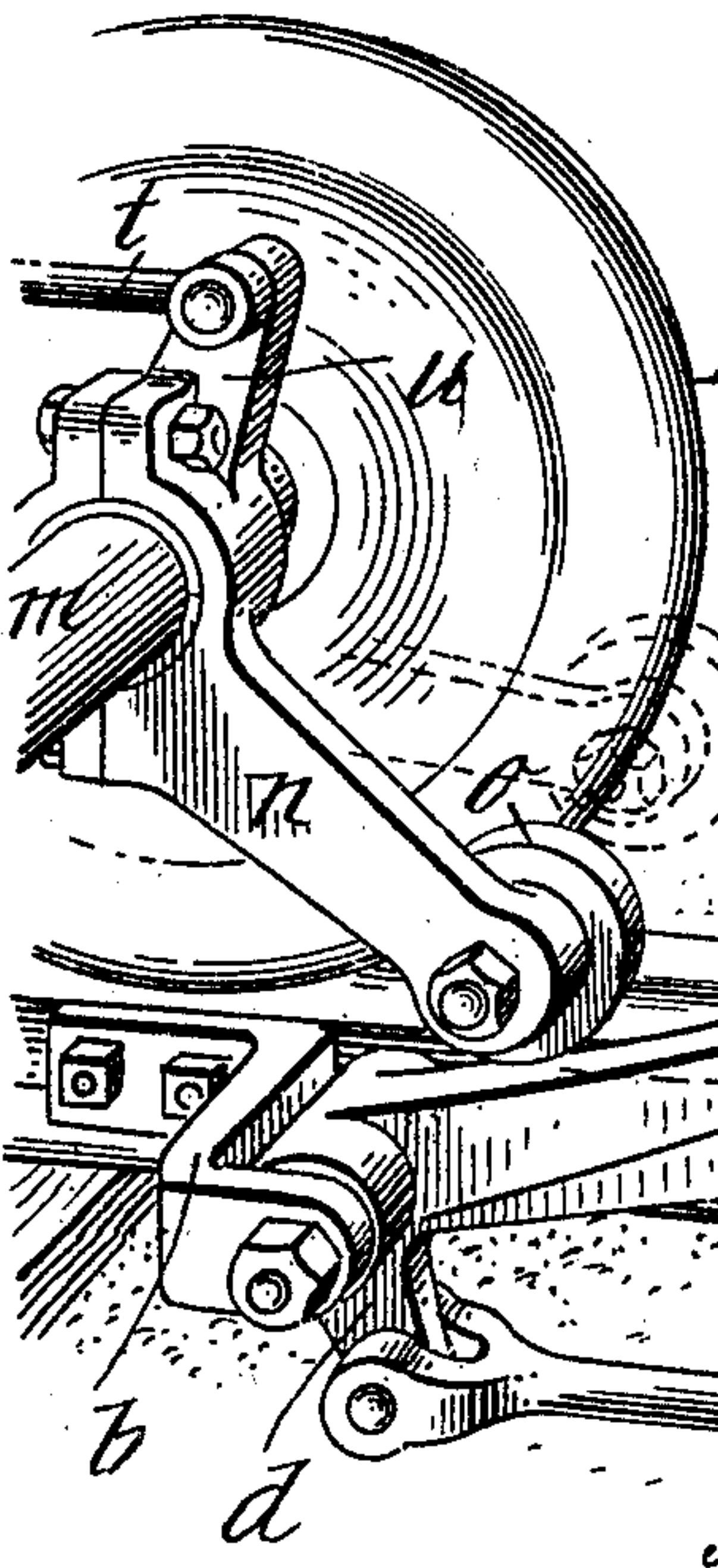
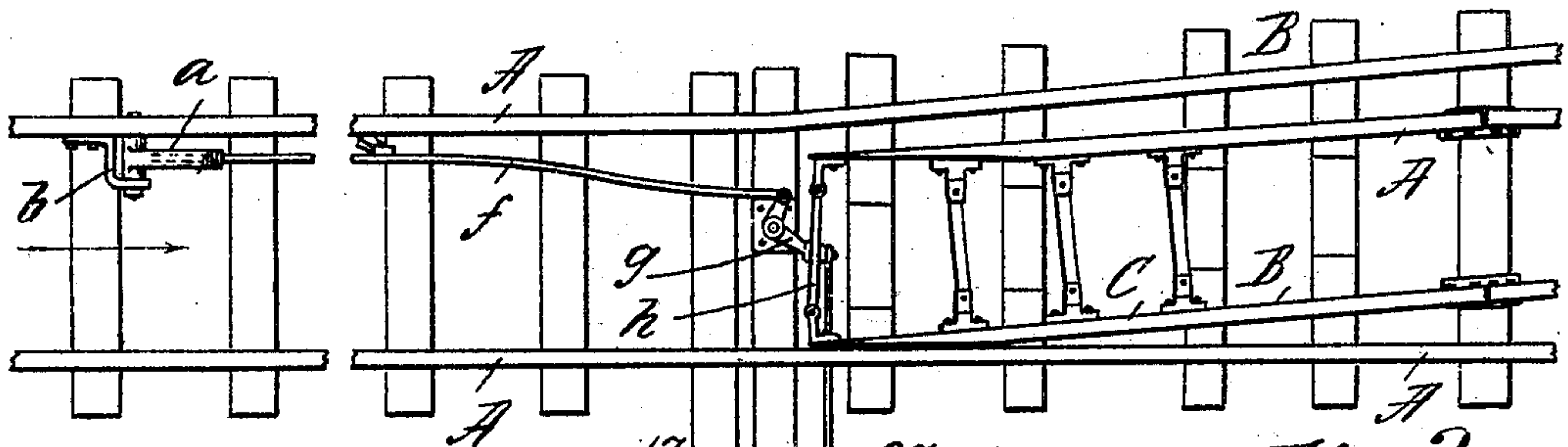


No. 820,267.

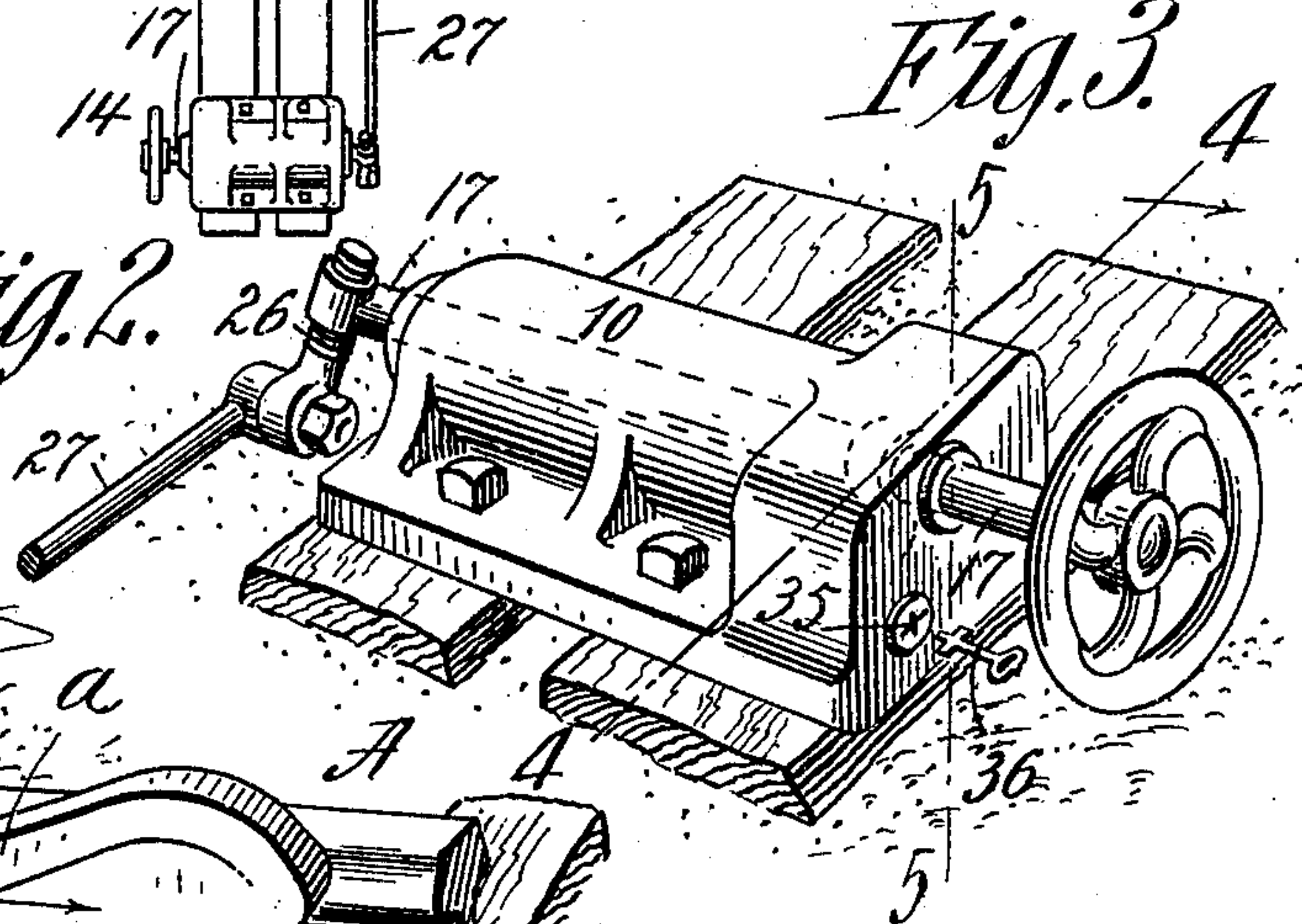
PATENTED MAY 8, 1906.

G. W. SNOW.  
RAILWAY SWITCH.  
APPLICATION FILED FEB. 7, 1906.

*Fig. 1.*

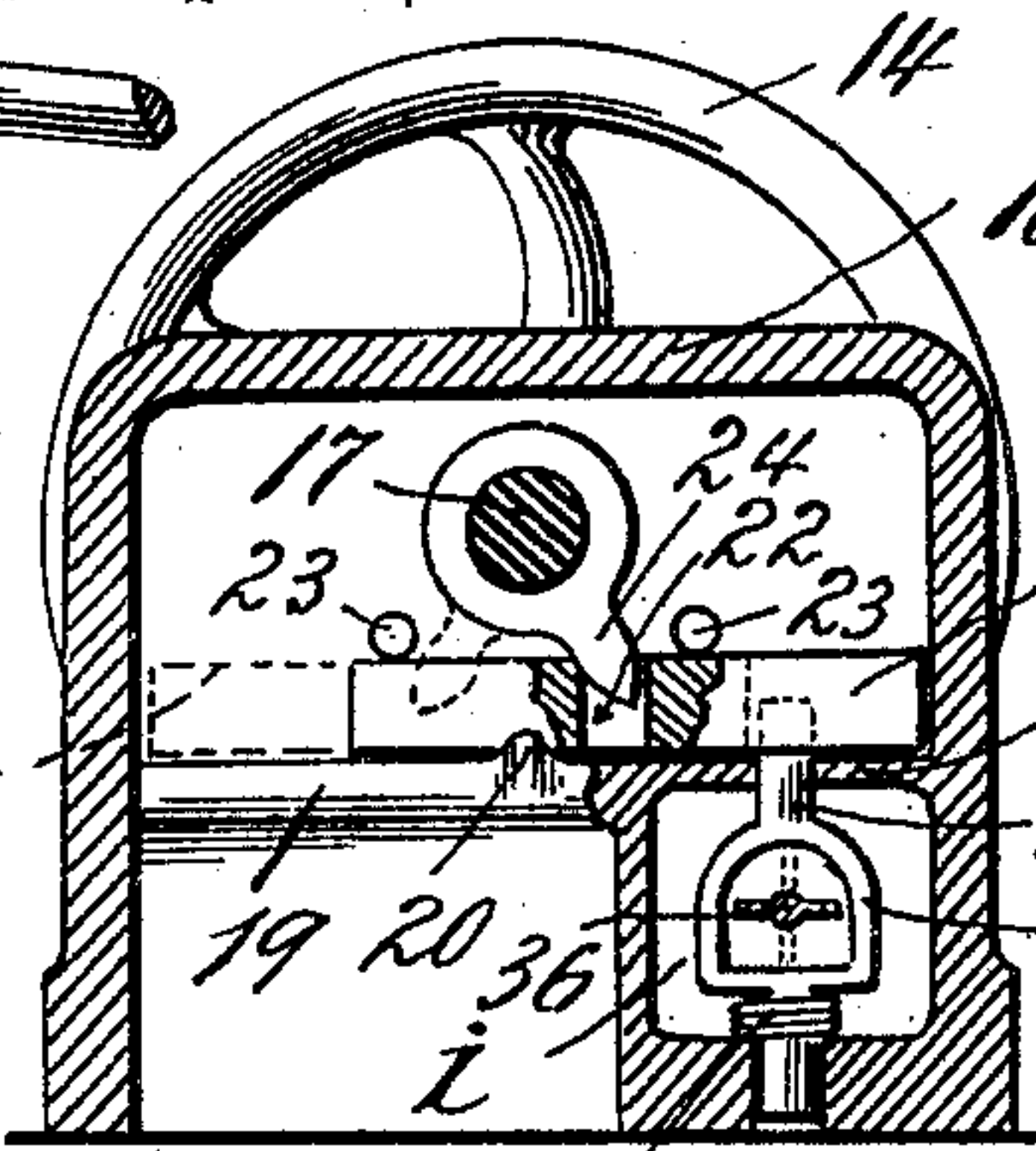


*Fig. 2.*

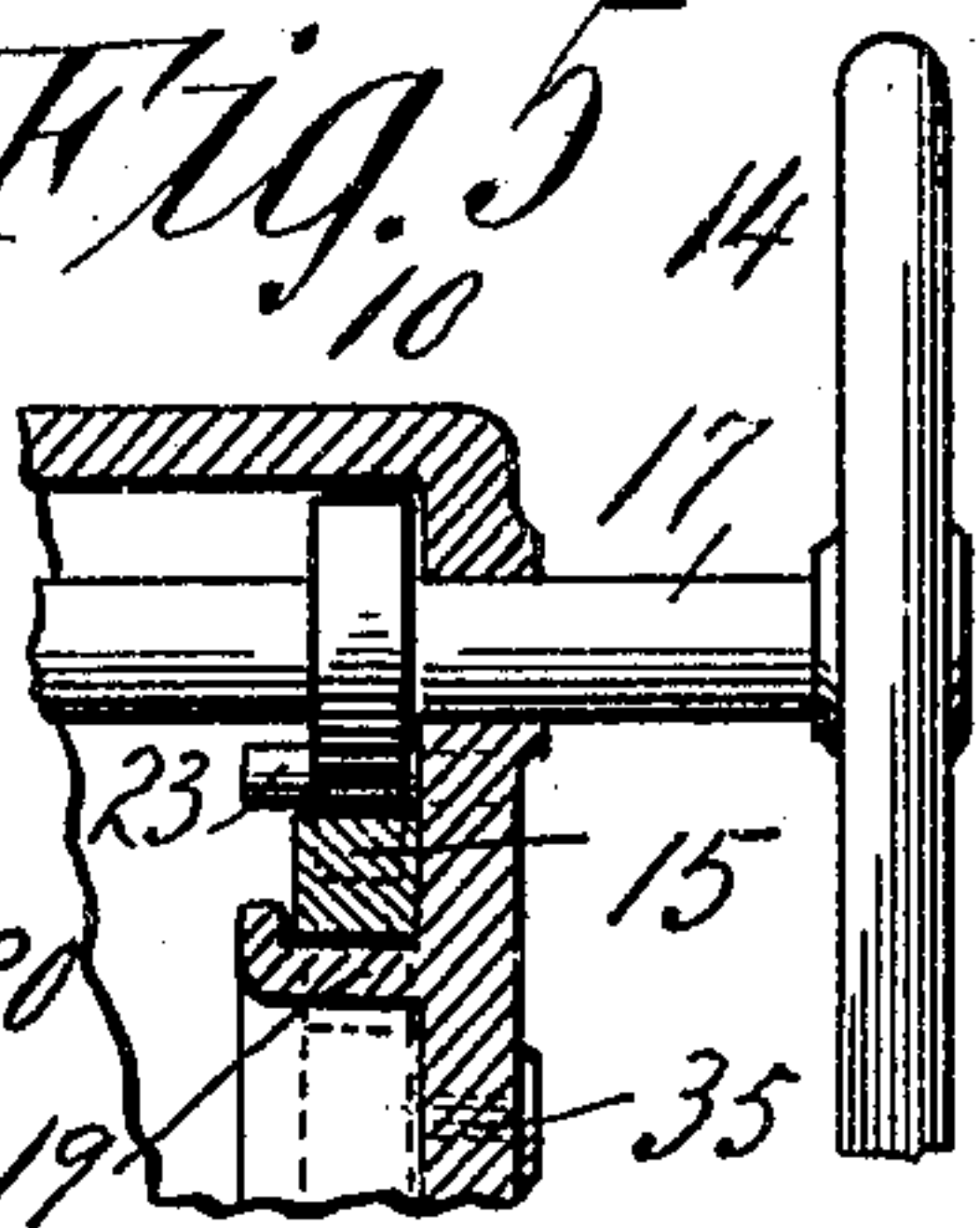


*Fig. 3.*

*Fig. 4.*



*Fig. 5.*



Witnesses:  
*J. R. Gayfield*  
*E. R. Driscoll.*

Inventor:  
*George W. Snow,*  
by *Wm. A. Bellman,*  
Attorney.



# UNITED STATES PATENT OFFICE.

GEORGE W. SNOW, OF HOLYOKE, MASSACHUSETTS.

## RAILWAY-SWITCH.

No. 820,267.

Specification of Letters Patent.

Patented May 8, 1906.

Application filed February 7, 1906. Serial No. 299,918.

*To all whom it may concern:*

Be it known that I, GEORGE W. SNOW, a citizen of the United States of America, and a resident of Holyoke, in the county of Hampden and State of Massachusetts, have invented certain new and useful Improvements in Railway-Switches, of which the following is a full, clear, and exact description.

This invention is comprised in a description of railway-switch and automatic safety devices therefor in which are embodied in combination with the tongue-switch and the main-track rail a lever pivotally mounted at the side of the latter at a point to the rear of the switch, a connection between said lever and the switch for closing the latter on the movement of the lever, a movable member connected with and to be moved in unison with the switch, and a lock automatically operative to confine said member in the position in which it is set by the closed switch.

By the employment of these devices a part or arm movably mounted on the front truck of the locomotive by being properly set will as the locomotive approaches the switch impinge against the aforesaid pivotally-mounted lever at the side of the main-track rail and insure the closing of the switch slightly in advance thereof, the arrangements being such, however, that in case it is desired that the engine and train, if connected therewith, shall move onto the siding the switch will be left open therefor.

In the accompanying drawings, Figure 1 is a plan view of all of the parts and arrangements embodied in the present improvements. Fig. 2 is a perspective view of the portion of the main-track rail, the switch-actuating lever pivotally mounted at the side thereof, and an operating device for such lever on an axle of the locomotive-truck. Fig. 3 is a perspective view of a portion of the device opposite and connected with the switch. Fig. 4 is a vertical section on line 4 4, Fig. 3. Fig. 5 is a vertical section through a part of the apparatus shown in Fig. 3, as seen at right angles to Fig. 4 and on the plane indicated by the line 5 5, Fig. 3.

Similar characters of reference indicate corresponding parts in all of the views.

In the drawings, A represents the main trackway of the railroad, and B the side trackway, and C represents the switch of usual form.

Suitably to the rear and adjacent the side of one of the main-track rails is a lever *a*, piv-

otally mounted in the suitable bracket *b* therefor and provided with a depending arm *d*, connected to which is a rod *f*, which is also connected to an angle-lever *g*, one arm of which is connected to a rod or bar *h*, secured to the tongue or double tongue of the switch.

Opposite the switch and outside of the trackway is a casing 10, constructed with an internal horizontal ledge 19 at one side thereof of having one or more marginal retaining-lugs 20, and a block 15 is slidable horizontally on said ledge, being held against displacement laterally by the aforementioned retaining-lugs 20 and held against any tendency for vertical displacement by the horizontal members or studs 23, rigidly affixed to the casing and projecting over and closely to the top of said block. The said block 15 is made with an intermediate aperture 22.

A rocking shaft 17 is horizontally journaled through the casing 10 and is provided intermediately with a lever-arm 24, projecting radially and downwardly and engaging in said aperture 22 of the block 15. The said rocking shaft 17, moreover, is provided at one end with a hand-wheel 14, and at its opposite end with a lever-arm 26, to which a rod 27, engaged or connected with the switch, is secured.

Located within the casing is a lock *i*, comprising a spring-pressed bolt 30 to be shot for projection transversely relatively to the aforementioned ledge 19 and for a locking engagement with the slidable block 15 when the block is so slid as to permit the said bolt by the action of its spring 32 to snap past its end.

The bolt is intermediately made of yoke shape, as represented at 33 in Fig. 4, and represents a keyway through the casing, and 36 represents the key for withdrawing the bolt, so that its engaging end is retracted to a position of non-engagement with the slidable block.

*m* represents the front axle of a locomotive-truck, on which is seen a lever *n*, mounted for an oscillatory movement relatively to the axle, provided with a roller *o* for impingement against the aforementioned pivotally-mounted lever *a*, and *t* represents a rod connected to a short arm *u* of the lever *n*, the same being understood as extended to or having connections which are accessible on the locomotive for positioning the lever *n*.

Assuming that the switch is open at a time when it is desired that the locomotive shall proceed along the main track, all the parts of



my device at such time being relatively in the positions shown by full lines in the drawings, the roller of the lever *n* coming onto the lever *a* depresses the latter and through the  
 5 described connections closes the switch and also causes a rocking movement to the shaft 17; so that the slidable block 15 is horizontally moved to the position represented by the dotted lines in Fig. 4, whereupon the  
 10 spring-bolt snaps to engagement across its end, locking the block, the rock-shaft, and the switch therewith connected in the closed position. The switch must remain closed and locked until the key 36 in the possession of an  
 15 authorized person is inserted through the keyway to engagement within the yoke of the bolt and made use of to downwardly force the bolt, so as to permit by means of the hand-wheel the reverse rocking of the shaft,  
 20 the opening of the switch, and the sliding back of the block 15 to lie crosswise over the end of the depressed bolt.

When it is desired that the locomotive will proceed onto the side track, the switch of  
 25 course will be opened and the lever end will be moved to and retained in a suitably high position, so as to pass free of the switch-actuating lever *a*.

I claim—

30 1. The combination with a switch-tongue, and the main-track rails, of an angular lever pivotally mounted at the side of one of the track-rails at a point to the rear of the switch, and said lever comprising a member having a  
 35 position normally above the adjacent portion of the track-rail, and a depending arm, a connection between said depending arm and the switch for closing the latter on the movement of the lever, a movable member  
 40 connected with and to be moved by the switch, and a lock automatically operative to confine said member in the position in which it is set by the closed switch.

2. The combination with a switch-tongue,  
 45 and the main-track rails, of an angular lever pivotally mounted at the side of one of the track-rails at a point to the rear of the switch, and said lever comprising a member having a position normally above the adjacent portion  
 50 of the track-rail, and a depending arm, a connection between said depending arm and the switch for closing the latter on the movement of the lever, a movable member connected with and to be moved by the  
 55 switch, a lock automatically operative to confine said member in the position in which it is set by the closed switch, and means for moving said member and the switch to their open positions.

60 3. The combination with a switch and the main-track rails, of an angular lever pivotally mounted at the side of one of the track-rails at a point to the rear of the switch, and said lever comprising a member having a position normally above the adjacent portion  
 65

of the track-rail, and a depending arm, a connection between said depending arm and the switch for closing the latter on the movement of the lever, a movable member connected with and to be moved by the switch, a  
 70 lock automatically operative to confine said member in the position in which it is set by the closed switch, and a device adapted to be mounted on a locomotive, and movable into and out of positions for impingement against  
 75 said lever, for the purposes set forth.

4. The combination with a switch and the main-track rails, of a lever pivotally mounted at the side of one of the track-rails at a point to the rear of the switch, a connection between  
 80 said lever and the switch for closing the latter on the movement of the lever, a movable member connected with and to be moved by the switch, a lock automatically operative to confine said member in the position in which it is set by the closed switch, a locomotive wheel-axle, a lever mounted for an oscillatory movement thereon provided with a roller for impingement against said  
 85 pivotally-mounted lever, and a rod connected to, and for positioning said oscillatory lever.  
 90

5. The combination with the switch and the main-track rails, of a lever pivotally mounted at the side of one of the track-rails at a point to the rear of the switch, a connection between said lever and the switch for  
 95 closing the latter on the movement of the lever, a rocking shaft having two lever-arms, a connection between the switch and one of said lever-arms, a slidable block with which the other of said lever-arms engages, and an automatic lock to hold said block and the connected switch in their closed position.  
 100

6. The combination with a switch and the main-track rails, of a lever pivotally mounted  
 105 at the side of one of the track-rails at a point to the rear of the switch, a connection between said lever and the switch for closing the latter on the movement of the lever, a stationary casing opposite the switch, a horizontal shaft  
 110 rotatable in said casing, having at its end outside of the casing a lever-arm, and at an intermediate portion thereof, within the casing, another lever-arm, and having also a  
 115 hand-wheel, a connection between the switch and said outside lever-arms, a slidable block having an aperture within which the said intermediate lever-arms engage, and an automatic lock comprising a spring-pressed bolt to engage the end of said block and to hold  
 120 the latter and the connected switch in their closed positions, and said casing having a keyway to permit by a key the withdrawal of said bolt from its engagement with said slidable block.  
 125

7. The combination with a main-track rail and a switch in advance thereof, of a lever pivotally mounted at the side of the track-rail, an angular lever adjacent and connected with the switch, and a rod connecting  
 130



said angular lever and the first-named lever,  
a casing provided with an internal horizontal  
ledge 19 having one or more marginal retain-  
ing-lugs 20, a block slidable on said ledge  
5 made with an intermediate aperture 22 and  
members 23 provided in the casing for con-  
straining and guiding said block, a rock-shaft  
horizontally journaled through the casing  
and provided intermediately with a lever-  
10 arm 24 engaging in said aperture of the block,  
having at one end outside of the casing a  
hand-wheel and having at its opposite end

outside of the casing a lever-arm 26, a rod 27  
connected to the switch and to said arm 26,  
and an automatic lock the bolt of which is 15  
operative to confine said block and the switch  
in their closed position.

Signed by me, at Springfield, Massachu-  
setts, in presence of two subscribing wit-  
nesses.

GEORGE W. SNOW.

Witnesses:

WM. S. BELLOWS,  
G. R. DRISCOLL.