J. H. MUNDERBACK.

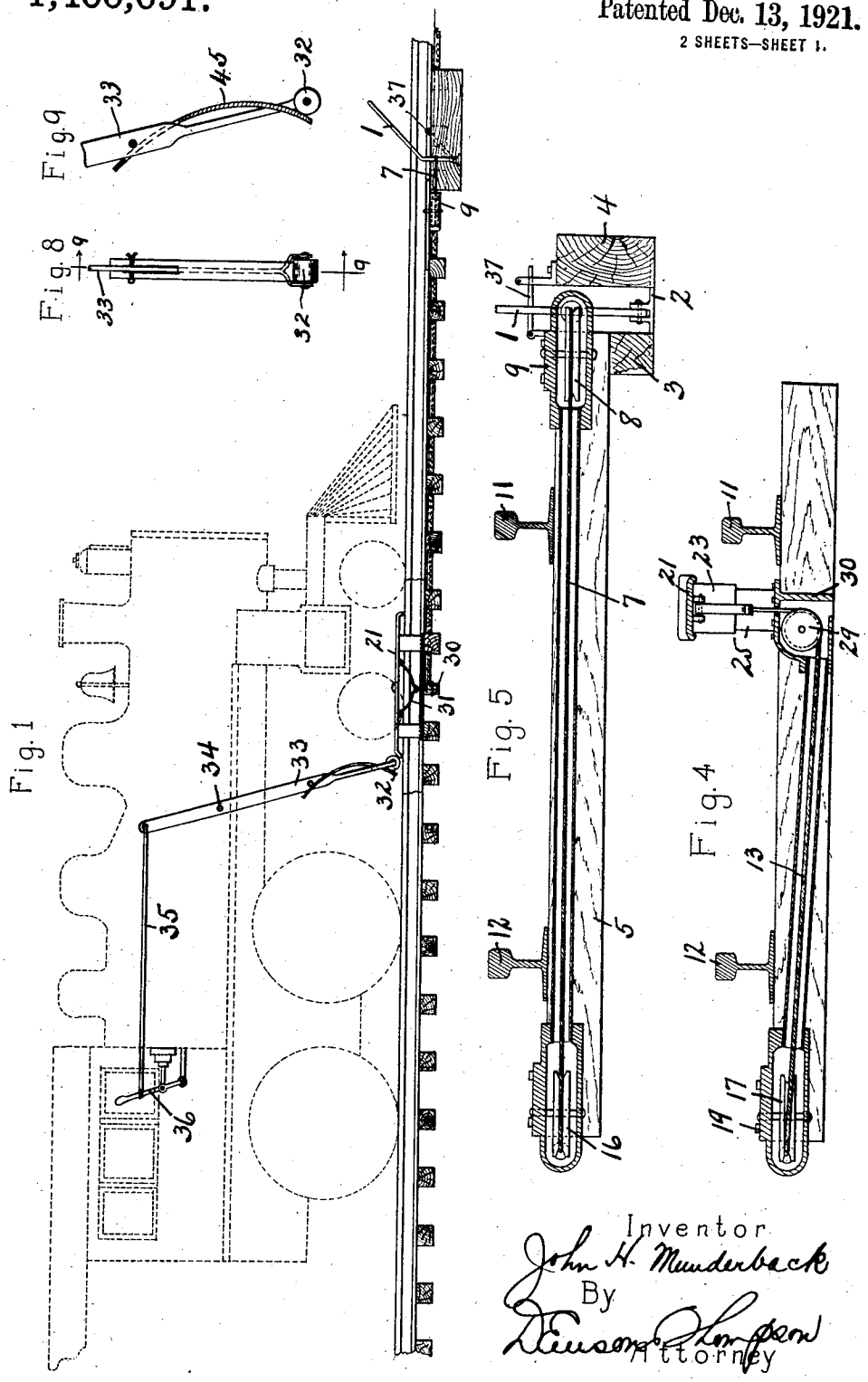
AUTOMATIC RAILWAY SAFETY APPLIANCE.

APPLICATION FILED MAY 23, 1921.

1,400,091.

Patented Dec. 13, 1921.

2 SHEETS—SHEET 1.



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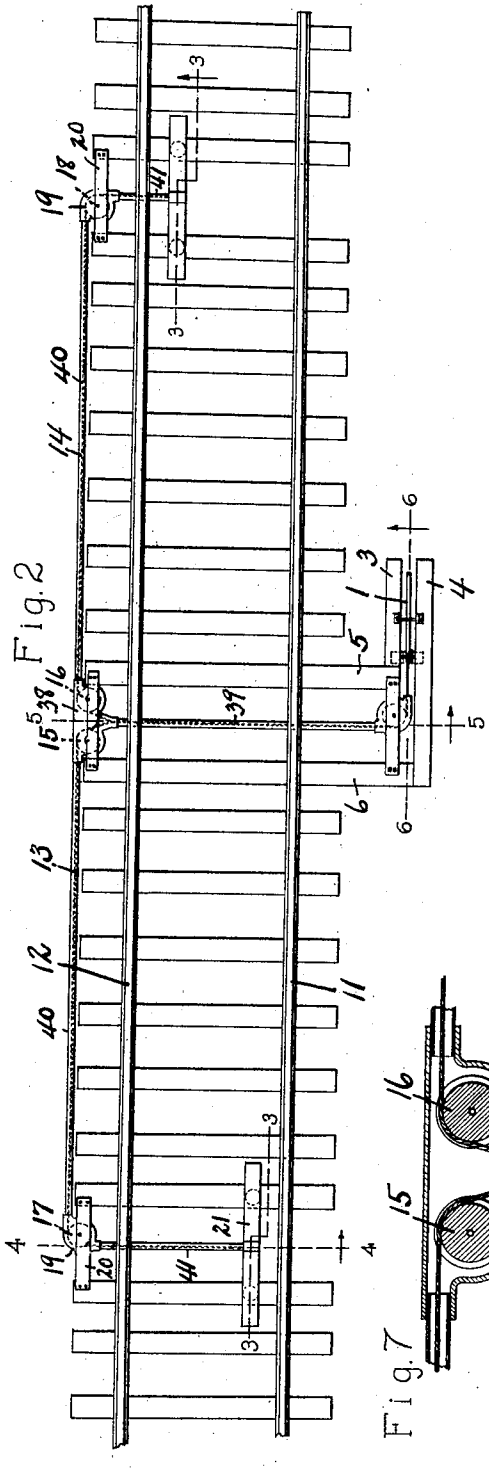


Fig. 2

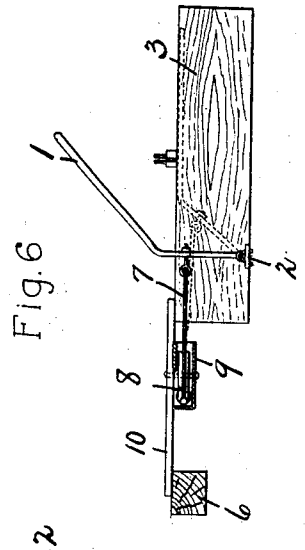


Fig. 6

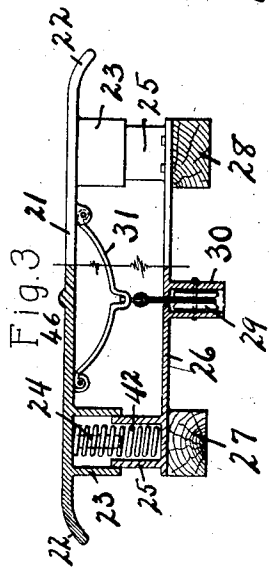


Fig. 3

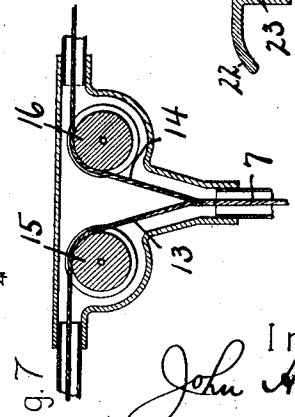


Fig. 7

Inventor

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UNITED STATES PATENT OFFICE.

JOHN H. MUNDERBACK, OF WATERTOWN, NEW YORK.

AUTOMATIC RAILWAY SAFETY APPLIANCE.

1,400,091. Specification of Letters Patent. Patented Dec. 13, 1921.

Application filed May 23, 1921. Serial No. 471,874.

To all whom it may concern:

Be it known that I, JOHN H. MUNDERBACK, a citizen of the United States, and a resident of Watertown, in the county of Jefferson, in the State of New York, have invented new and useful Improvements in Automatic Railway Safety Appliances, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to a certain new and useful automatic railway safety appliance, and particularly to that class of appliances in which two coöperative elements, positioned respectively adjacent to or on the railroad track or road bed, and on the locomotive, act to operate the throttle of the locomotive or such other means as may control the movement of the same to arrest the movement of the locomotive or train along the track when a danger signal has been passed, or for other reasons.

The primary object of the invention is to avert accidents by automatically arresting the movement of the locomotive or train in case the same is allowed, either through negligence, inadvertence, or other causes, to pass by a danger signal or into an occupied block, and my invention is capable of association with such danger signal, or a semaphore, in such manner that when the same is set against an approaching train, my appliance is brought into operative position to automatically perform its function.

More specifically, the invention relates to the details of construction and the arrangement of the appliance and parts thereof, by means of which the main object of the invention is effected in an efficient manner.

Other objects and advantages will appear from the following description, taken in connection with the accompanying drawings, in which:—

Figure 1 is an elevation of a portion of the railroad track illustrating an appliance of my invention applied thereto, as well as the coöperative means adapted to be mounted upon the locomotive for actuating desired parts, such as the throttle lever.

Fig. 2 is a top plan view of the appliance as applied to a railroad track.

Fig. 3 is a cross section on line 3—3, Fig. 2.

Fig. 4 is a cross section on line 4—4, Fig. 2.

Fig. 5 is a cross section on line 5—5, Fig. 2.

Fig. 6 is a cross section on the line 6—6, Fig. 2.

Fig. 7 is a horizontal section through a portion of pulley mechanism, by means of which movement of certain portions of the device is effected.

Figs. 8 and 9 are edge and side views, respectively, of the arm —33— showing the spring for engaging the roller —32—.

The appliance as here illustrated comprises an operating lever —1—, pivotally mounted on a cross-bar —2—, secured to the strips —3— and —4— which may, as shown, be connected respectively to the ties —5— and —6—. A flexible cable, such as a wire or other suitable cable —7— is connected to an intermediate portion of the lever —1— and extends around a pulley —8— rotatably mounted in the casing —9—, secured by means of cross-bar —10— to the ties —5— and —6—. The cross-bar —10— may be formed integral with the casing —9— or may be separate therefrom, and rigidly secured thereto, so as to constitute a rigid support for the casing.

The cable —7— extends under the rails —11— and —12— and is bifurcated, or split, so as to form two cables —13— and —14— extending around the pulleys —15— and —16— respectively and adapted to operate similar devices disposed at opposite sides of the railroad track, but within the rails in this particular illustration, and at opposite sides of the operating lever mechanism —1—. This particular arrangement, however, is not essential to my invention, as the operating mechanism may be positioned at any point, and the use of two similar devices is desirable so that but one coöperating appliance need be mounted upon the locomotive, and movement of the locomotive in either direction along the track can be automatically arrested by the use of a single operating mechanism.

The cable —13— extends around a pulley —17— while the cable —14— extends around a pulley —18—, each of these pulleys being carried by a similarly shaped casing or frame —19— having a cross-bar —20— formed integral therewith or rigidly secured thereto, and adapted to be attached to the railroad track in any suitable manner, as by securement to two adjacent ties. The cables

—13— and —14— each operate a similarly constructed mechanism embodying an elongated contact member —21— preferably having its end portions curved or inclined downwardly, as shown at —22—. This member —21— is formed with two spaced, substantially cylindrical bosses, —23— each of which incloses a projecting pin —24— adapted to telescope with a pair of upwardly projecting, substantially cylindrical bosses —25— formed in connection with the cross plate or bar —26— extending between and connecting it to the ties —27— and —28. Within the telescoped bosses —23— and —24— are arranged compressible springs —42— so as to permit downward movement of the contact member —21— actuated as hereinafter described by lever —1— or permitting a certain resiliency when the operating mechanism mounted on the locomotive comes in contact with said contact member.

The cables —13— and —14— extend around pulleys —29— mounted on a horizontal axis within a casing —30— formed in connection with the cross-plate —26— and as shown, the cables may extend upwardly through an opening in the cross-plate and be connected to a yoke —31— having its opposite ends connected to the under side of the contact members —21—.

The operation of the appliance will now be readily understood. When the lever —1— is in the position shown in Fig. 6, the contact member —1— is in a position elevated somewhat above the rails of the track, or at least in such position as adapted for contact with a roll, or other suitable device —32— mounted on a bar —33— which is pivoted at —34— to the locomotive or its framework. This pivot is at an intermediate portion of the bar and the end of the bar opposite that upon which the roll —32— is mounted, is connected by a link —35— to the throttle lever —36— or such other apparatus or device as may be suitable for producing the desired result of arresting the movement of the locomotive under the conditions described.

As stated, when the contact member —21— is in such position, the roller —32— coming in contact with the member —21— causes movement of the bar —33— about its pivot —34— to close the throttle or to operate such other mechanism as may be desired.

In order to move the appliance to an inoperative position, the lever —1— is adapted for movement to a position shown by dotted lines in Fig. 6, and to be held in that position by means of latch —37—. When the lever is moved to that position, the cables —13— and —14— through the medium of yoke —31— pull the contact members —21— downwardly, telescoping the bosses —23— about the bosses —25— against the action of the inclosed spring —38— which surrounds the pin —24—. This movement of the contact members —21— is effected through lever —1— moving such contact members into a position where the roller —32— will not come in contact therewith, and no movement of the bar —33— or throttle —36— will be effected.

It will be understood that the lever —1— may be operated from any desired place or position, that here shown being merely illustrative of a construction suitable for that purpose. This lever may constitute a portion of or may be a semaphore or signaling device of any character having suitable connections for operating the cable —7—.

The pulley housings —9— —19—, —30— and —38— may all be formed of castings, if desired, and the housing —9— is connected with the housing —38— by a tube —39— which may, as shown, fit within bosses formed in connection with the respective housings —9— and —38— and the housing —38— is connected to each of the housings —19— by separate tubes —40—. Each tube —40— may, as shown telescope within bosses formed on the housing —38— and the respective housings —19—.

In like manner the housings —19— are connected to the housings —30— by tube —41— which may, as shown, telescope within bosses formed in connection with the respective housings. By this construction a conduit is formed which connects the housing —9— with the housing —30— and through this conduit the flexible cable may extend for actuating the contact device or plate. Preferably, as shown, the tubes —41— are somewhat inclined downwardly from the housing —19— to the housing —30— to permit most effective assemblage of the appliance.

Although I have shown and described a specific construction, form and arrangement of the parts, as illustrative of a perhaps preferred embodiment of my invention, I do not desire to limit myself to the exact details of construction and arrangement, as various changes may be made without departing from the invention as set forth in the appended claims.

—45— is a spring mounted upon the rod —33— and pressing against the roller —32— to produce more positive impact with the member —21—.

—46— is a boss on the member —21— with which the roller —32— engages to insure positive operation of the rod —33—.

What I claim is:

1. In an appliance of the class described, a cross plate having a pair of upwardly projecting substantially cylindrical bosses, a contact member having a pair of cylindrically extending bosses telescoped within the bosses upon said strip, a member connected to the said contact device between the said

bosses, and a flexible cable connected to said member and adapted to effect telescope movement of the bosses upon said contact device with the bosses upon said strips, and spring means within the bosses tending to move the contact device away from said strip.

2. In an appliance of the class described, a cross plate having a pair of upwardly projecting substantially cylindrical bosses, a contact member having a pair of cylindrically extending bosses telescoped within the bosses upon said strips, a member connected to the said contact device between the said bosses, a flexible cable connected to said member and adapted to effect telescope movement of the bosses upon said contact device with the bosses upon said strips, spring means within the bosses tending to move the contact device away from said strip, and a projecting pin within the bosses upon the contact device, said pins disposed within said springs.

3. In an appliance of the class described, a contact device, a cross-strip for supporting said contact device, springs interposed between the contact device and said strip, a flexible cable for moving said contact device toward the cross-strip, and a pulley housing formed in connection with said cross-strip, a pulley within said housing, said cable extending over said pulley, and a lever arm for actuating the cable.

In witness whereof I have hereunto set my hand this 7 day of May, 1921.

JOHN H. MUNDERBACK.

Witnesses:

C. A. CHASE,

GEO. D. FULLER.