No. 778,401. PATENTED DEC. 27, 1904.

I. V. BURRIS.

AUTOMATIC TORPEDO ADJUSTER AND EXPLODER.

APPLICATION FILED JUNE 23, 1904.

Fig. 1.

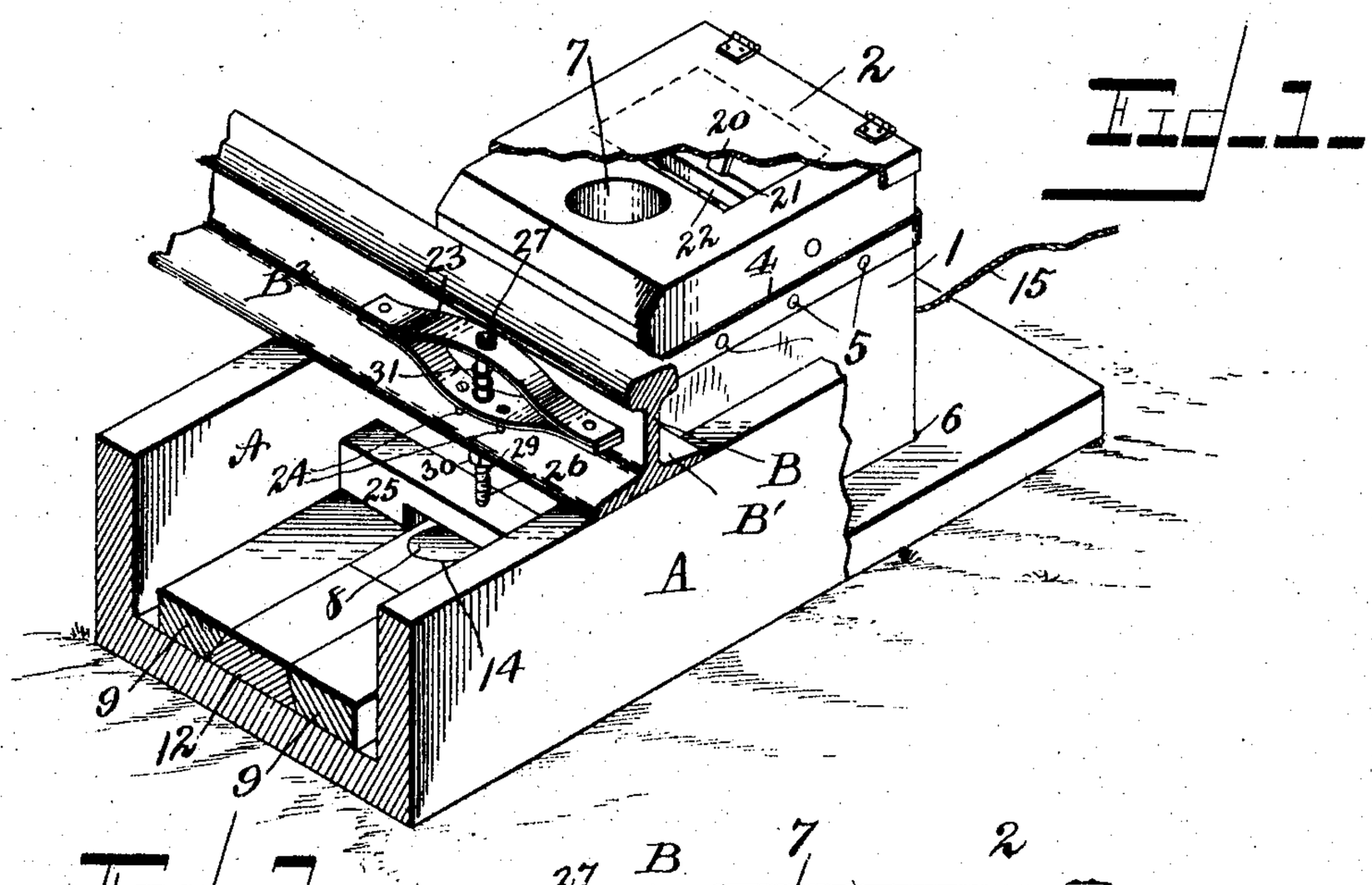


Fig. 2.

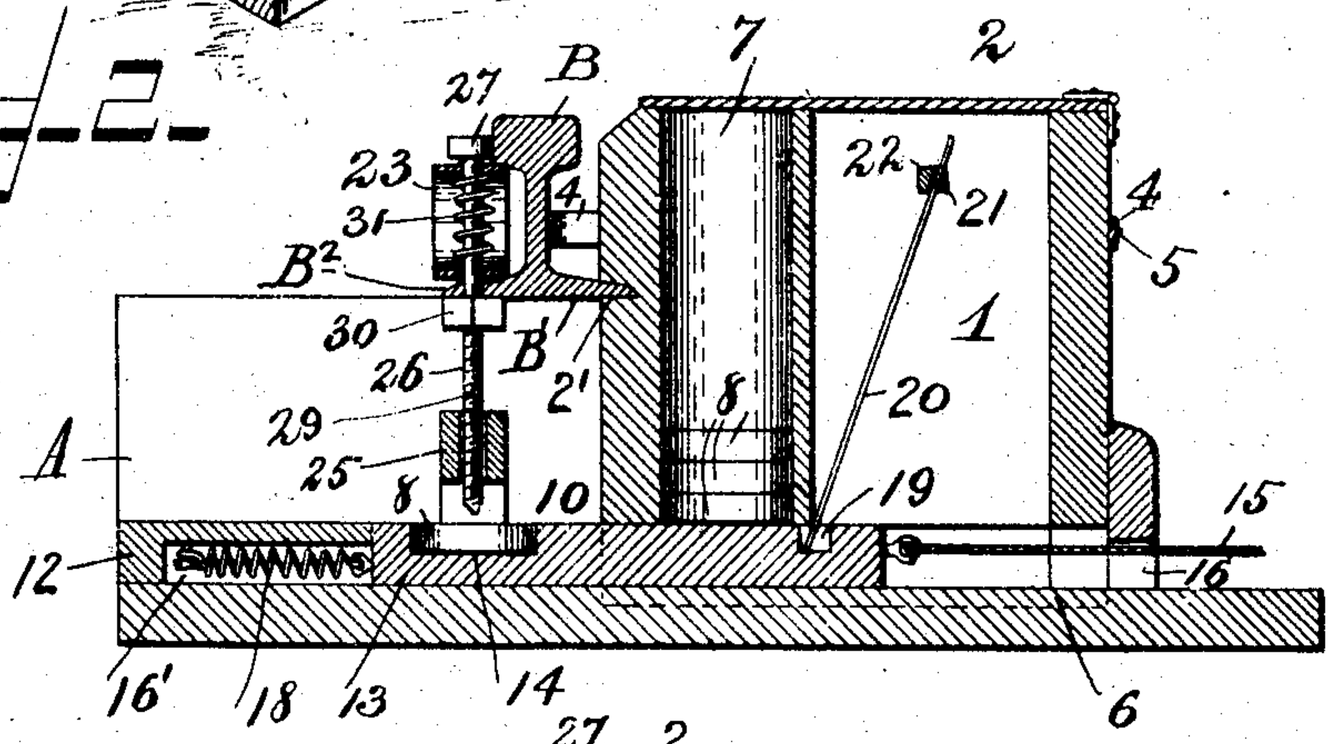
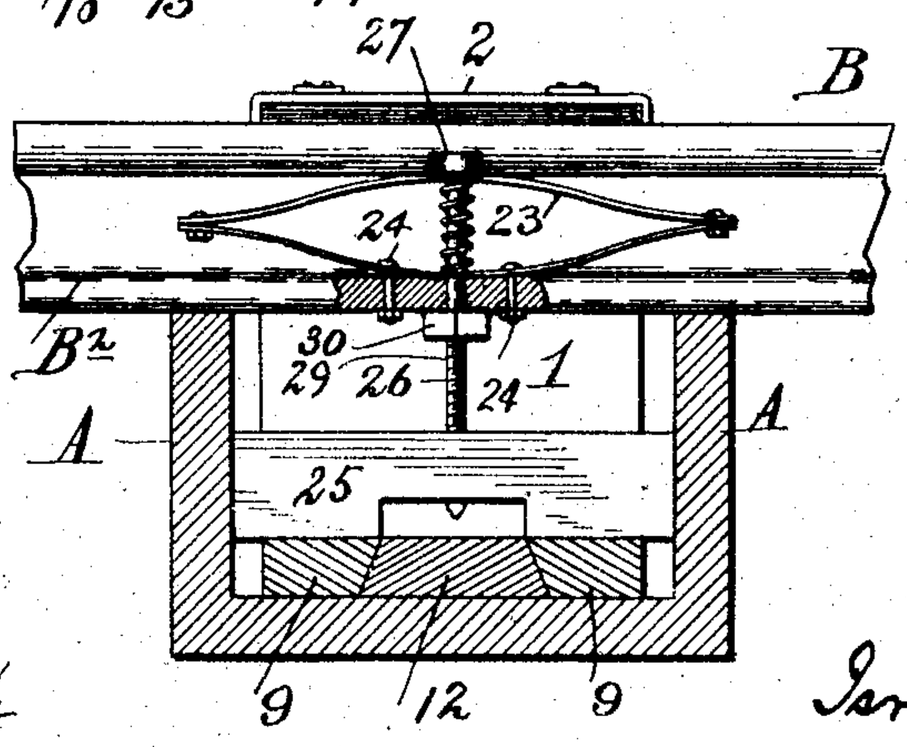


Fig. 3.



WITNESSES:
W. N. Durand.
L. E. Barkley.

INVENTOR
Israel V. Burris
BY
Frank Applemann
Attorney

No. 778,401. Patented December 27, 1904.

UNITED STATES PATENT OFFICE.

ISRAEL V. BURRIS, OF DENVER, COLORADO, ASSIGNOR OF ONE-HALF TO RUPERT G. BRYANT, OF DENVER, COLORADO.

AUTOMATIC TORPEDO ADJUSTER AND EXPLODER.

SPECIFICATION forming part of Letters Patent No. 778,401, dated December 27, 1904.

Application filed June 23, 1904. Serial No. 213,887.

To all whom it may concern:

Be it known that I, ISRAEL V. BURRIS, a citizen of the United States of America, residing in the city and county of Denver and State of Colorado, have invented certain new and useful Improvements in Automatic Torpedo Adjusters and Exploders, of which the following is a specification.

This invention relates to railroad-signals, and more particularly to that class in which detonating means are applied to the rail for discharge automatically and simultaneously with the operating of a switch or semaphore.

The object of the invention is to provide novel means of this character that will be simple in construction, efficient in practice, and economical in manufacture.

It also has for its object means for discharge that will be positive in its function.

It further has for its object novel arrangement and combination of parts for delivering the torpedoes from their magazine.

With the above and other objects in view the invention consists in the details of construction and the arrangement and combination of parts to be hereinafter more fully set forth and claimed, and illustrated in the annexed drawings, wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 is an enlarged perspective of a road-bed, showing the invention applied. Fig. 2 is a longitudinal central section of the invention; and Fig. 3 is a front elevation of the invention, the ties to which it is applied being shown in cross-section.

In the drawings, A indicates a bed-frame approximately U-shaped in cross-section, and B a rail supported thereby. The frame is adapted to be inserted between two ties in the road-bed and may or may not extend entirely across the road-bed. This is so that it may be easily inserted under any predetermined point of a rail. At one end of the frame is a housing 1, having a cover 2. This housing is provided at its inner face with a groove 2′, adapted to engage the flange B′ of the rail B. Passing around the housing and having its ends secured to the web of the rail is a strap 4, said strap being attached at suitable distances to the sides of the housing by screws or nails or bolts 5. The housing rests in a recess or opening 6 in the base of the frame. This arrangement is to hold the housing close to the rail at all times, so that it will always be in an operative position. Secured within the housing adjacent its inner face is a vertical magazine 7, in which are held the torpedoes 8, one above the other. Centrally of the housing and riding in the guides 9 is a carrier 10. Said carrier passes under the magazine 7 and through an opening in the front of the housing or inner face. The movement of the carrier is limited in the rear by the wall of the housing and at the front by a stop 12, located between the guides 9. The carrier comprises a slide 13, having in its face a recess 14, adapted to rest in its normal position under the rail B and at the limit of its inward movement under the magazine 7. Secured to the inner end of the slide is a flexible connection 15, leading to the operating means of a switch or semaphore, (not shown,) said connection passing through an aperture 16 in the rear wall of the housing.

The front end of the stop 12 has a recess 16, centrally of which is secured at one end a spring 18, the opposite end being attached to the slide. This is for the purpose of returning the slide to its normal position. To further this return, a spring means is also provided at the rear of the slide. In the upper face of the slide is a recess 19, and loosely fitting in said recess is the lower end of a flat spring 20. The upper end of the spring passes loosely through a slotted opening 21 in a cross-bar 22, secured within and to the side walls of the housing.

To the inner flange B^2 of the rail is secured a bow-spring 23 by the bolts 24 beneath the flange, and secured to the guides of the slide is a head-block 25. Passing loosely through the bow-spring, flange B^2 of the rail, and the head block is a needle 26, having a head 27 on its upper end, and its lower end being slightly pointed and adapted to engage a torpedo held in the recess 14 of the slide 10 when in its normal position. Portion of the

needle midway its length, as at 29, is threaded and has fitted thereon an adjustable stop 30, adapted to bear against the base of the rail B and limit the upward movement of the needle. Between the bow-springs and embracing the needle is a spiral spring 31, which is adapted to exert additional pressure on the bows. The head 27 of the needle normally lies just below the edge of the tread of the rail and is so positioned as to be engaged by the flange of the wheel of a car, locomotive, or other vehicle passing thereover, which will force the needle down and cause the pointed end thereof to contact with the torpedo in the recess of the slide and discharge the same.

From the foregoing description the operation of the device is thought to be apparent and the steps showing the same unnecessary.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination, a bed-frame, a rail thereon, a magazine on the frame, means for delivering torpedoes from the magazine to beneath the rail, a needle having its head normally slightly below the tread of the rail and to be operated upon directly by a flange of a wheel, the lower end of the needle being adapted to engage a torpedo, and means for holding the needle in its normal position.

2. In combination, a bed-frame, a rail thereon, housing in the end thereof adapted to receive torpedoes, means for delivering the torpedoes beneath the rail, a needle having its head normally slightly below the tread of the rail, the lower end of the needle being adapted to engage a torpedo, and means embracing the needle for holding the needle in its normal position.

3. In combination, a bed-frame, a rail thereon, housing in the end thereof adapted to receive torpedoes, means for delivering the torpedoes beneath the rail, a needle for engaging the torpedoes, means for holding the needle in its normal position and means for adjusting the position of the needle.

4. In combination, a bed-frame, a rail thereon, housing in the end thereof adapted to receive torpedoes, means for delivering the torpedoes beneath the rail, a needle passing through the flange of the rail, the head of the needle being adapted to normally lie just below the tread of the rail, said needle being threaded midway its length, and a nut on the threaded portion adapted to abut the bottom of the rail.

5. In combination, a bed-frame, a rail thereon, a housing in the end thereof adapted to receive torpedoes, means for delivering the torpedoes beneath the rail, a needle passing through the flange of the rail and adapted to engage or discharge the torpedoes and a guide for the needle.

6. In combination, a bed-frame, a rail thereon, a housing in the end thereof adapted to receive torpedoes, means for delivering the torpedoes beneath the rail, a bow-spring secured to a flange of the rail, a needle passing through the bow-spring and the flange, the head of the needle being adapted to be engaged by the flange of a wheel of a vehicle passing over the rail, the lower end of the needle being adapted to engage the torpedoes.

7. In combination, a bed-frame, a rail thereon, a housing in the end thereof adapted to receive torpedoes, means for delivering the torpedoes beneath the rail, a bow-spring secured to a flange of the rail, a needle passing through the bow-spring and flange, the head of the needle being adapted to be engaged by the flange of a wheel of a vehicle passing over the rail, the lower end of the needle being adapted to engage the torpedoes, and a spiral spring within the bow-spring embracing the needle.

8. In combination, a bed-frame, a rail thereon, discharging means carried by the rail, a housing on the bed-frame, a magazine within the housing, guides at the base of the housing, a slide in the guides, said slide having a recess in its upper face, said recess being adapted to lie normally under the discharging means carried by the rail and at the limit of its inward movement beneath the magazine within the housing, spring means for holding the slide in its normal position and means for imparting an inward movement thereto.

9. In combination, a bed-frame, a rail thereon, discharging means carried by the rail, a housing on the bed-frame, a magazine within the housing, a slide, said slide having a recess in its face, said recess being adapted to lie normally under the discharging means carried by the rail, and at the limit of the inward movement of the slide beneath the magazine within the housing, means for imparting an inward movement to the slide, a check, a spring from the check to the slide to return the slide to its normal position.

10. In combination, a bed-frame, a rail thereon, discharging means carried by the rail, a housing on the bed-frame, a magazine within the housing, a slide leading from the magazine to beneath the discharging means, means for imparting an inward movement to the slide, a check, a spring from the check to the slide for returning the slide to its normal position, and additional means within the housing to return the slide to its said normal position.

In testimony whereof I affix my signature, in the presence of two witnesses, this 16th day of June, 1904.

ISRAEL V. BURRIS.

Witnesses:

WILLIAM H. RHODES,

ARTHUR C. ALLEN.