

R. E. STORY & A. B. & J. BOOTH.
 SIGNALING DEVICE.
 APPLICATION FILED JUNE 1, 1909.

984,317.

Patented Feb. 14, 1911.

2 SHEETS—SHEET 1.

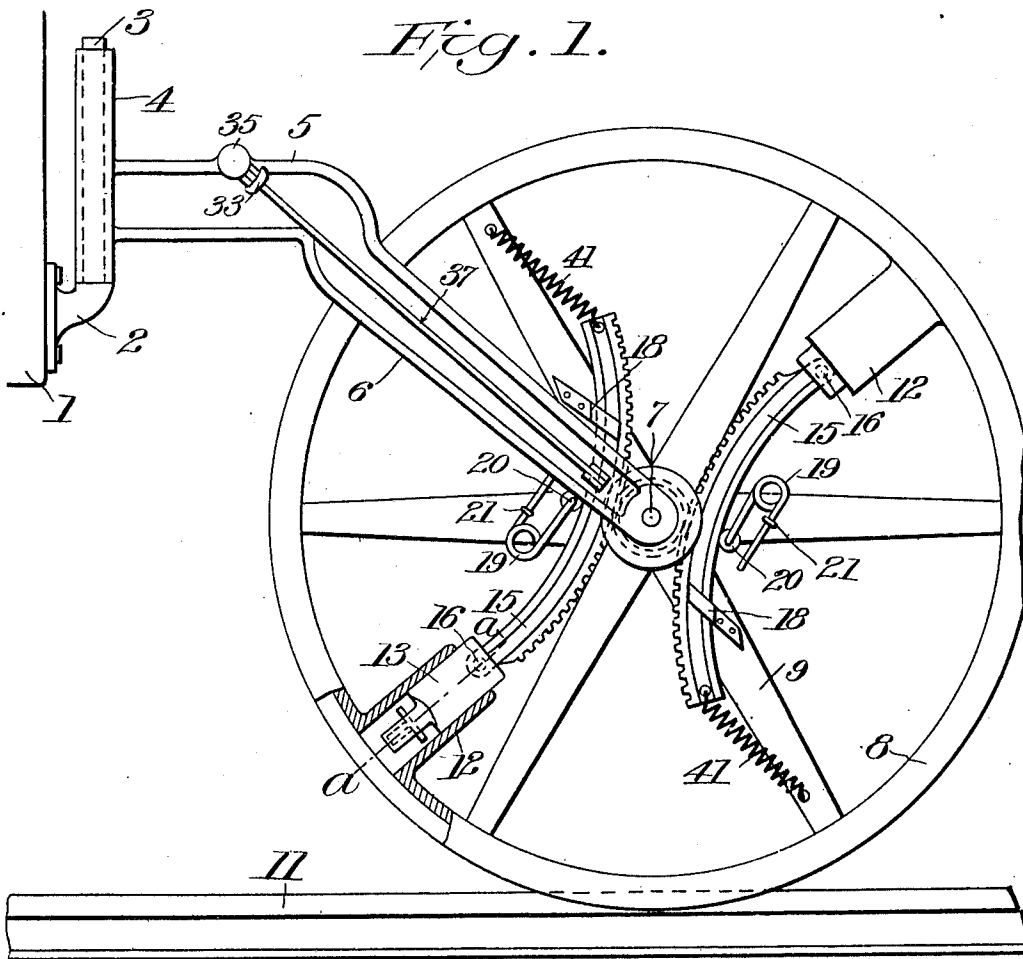
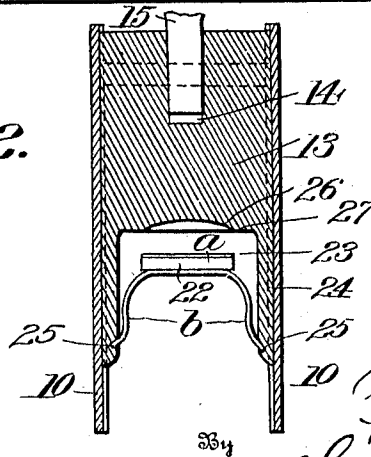


Fig. 2.



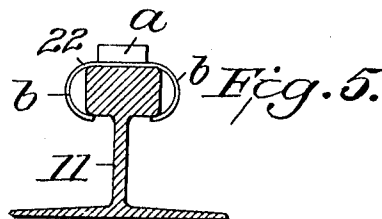
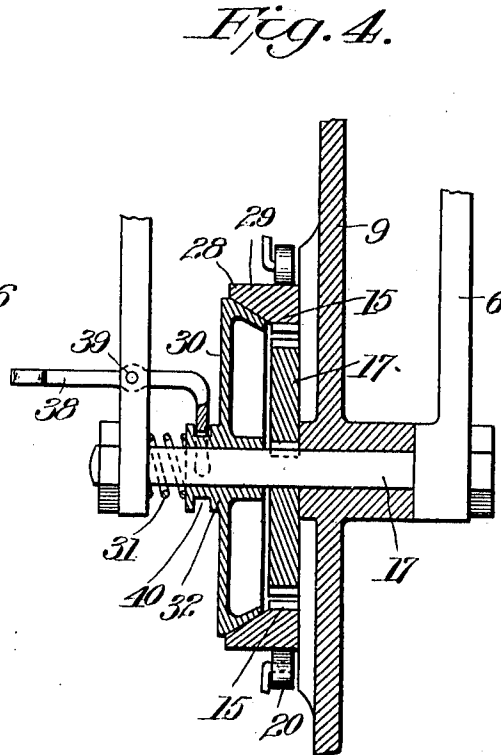
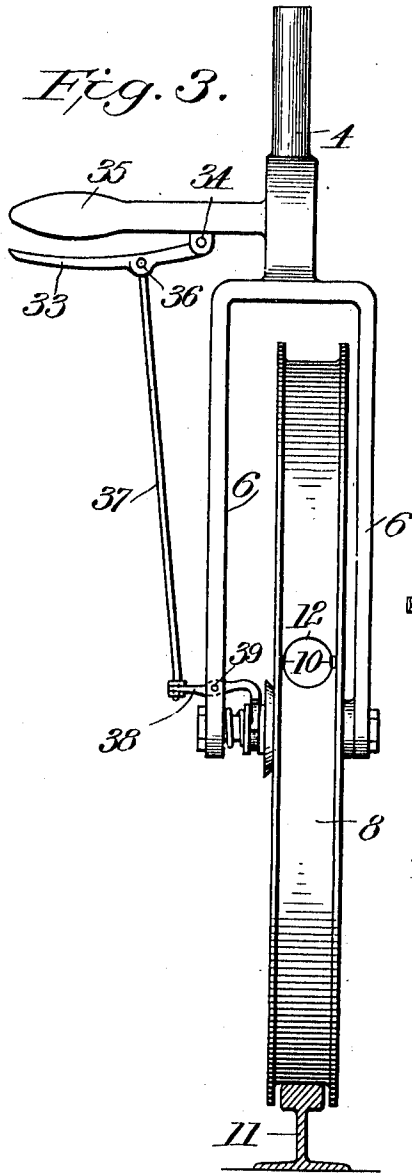
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UNITED STATES PATENT OFFICE.

ROBERT EDWARD STORY, ANDREW BRADFORD BOOTH, AND JEWETT BOOTH, OF
GENESEE, LOUISIANA.

SIGNALING DEVICE.

984,317.

Specification of Letters Patent.

Patented Feb. 14, 1911.

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To all whom it may concern:

Be it known that we, ROBERT E. STORY, ANDREW B. BOOTH, and JEWETT BOOTH, all citizens of the United States, residing at Genesee, in the parish of Tangipahoa and State of Louisiana, have jointly invented certain new and useful Improvements in Signaling Devices, of which the following is a specification.

10 This invention relates to signaling devices.

One object is to provide a device capable of being readily connected to or removed from the rear of a locomotive, coach, tender, or other part of the railroad rolling stock equipment for the purpose of placing on the rails torpedoes while the train is in motion, so that a following train will explode the torpedoes and thereby be signaled due instructions or warning.

20 Another object of the invention resides in the provision of a mechanism carried by a train equipment or part thereof for the purpose of placing torpedoes on the rails for explosion by a following train for signaling purposes.

25 With the above and other objects in view the present invention consists in the combination and arrangement of parts herein-after more fully described, illustrated in the accompanying drawings and particularly pointed out in the appended claims, it being understood that changes may be made in the form, proportion, size and minor details without departing from the spirit or sacrificing any of the advantages of the invention.

30 In the drawings:—Figure 1 is a side elevation partially in section of the invention as applied to a train. Fig. 2 is a sectional view on the line *a—*a** of Fig. 1. Fig. 3 is a rear elevation of the device detached. Fig. 4 is a fragmentary transverse sectional view of the invention. Fig. 5 is a sectional view showing the cap on the rail.

40 Referring now more particularly to the accompanying drawings, the reference character 1 indicates the rear of a coach, locomotive, tender, or other part of a train or part thereof to which is secured a bracket 2 provided with a standard 3 adapted to slidably receive the sleeve 4 of a frame 5, including downwardly directed spaced arms 6 in the outer ends of which arms is fixedly secured an axle 7 journaled upon which latter is a wheel 8, having spokes 9 radiating from

its hub to its periphery. The periphery of the wheel 8 is provided with a double flange 10 to embrace opposite sides of the tread surface of one of the rails 11 upon which the rolling stock rides.

60 Formed in the wheel 8 are inwardly directed oppositely disposed open-ended sockets 12, whose outer ends open between the flanges 10. Each socket is designed to receive a plunger 13 provided at its inner end with a socket 14 designed to receive one end of a toothed arm 15, there being a pivot pin 16 passed through each plunger 13 and one end of each toothed arm 15, as clearly shown. These toothed arms 15 are preferably arcuate in formation and have their teeth disposed for engagement with a toothed pinion 17 fixedly mounted upon the shaft 7, so that as the wheel 8 is rotated, when the latter is disposed upon the track 11 while the train is moving, the arcuate arm 15 will be moved outwardly in opposite directions to force the respective plungers 13 outwardly of their sockets 12 for a purpose presently explained. It will be noted that there is a guide arm 18 disposed for engagement with and to guide each of the arcuate arms 15, these guide brackets 18 being secured to the corresponding spokes 9. It will also be noted that there is a spring 19 having a roller 20 adapted to bear against the backs of the arcuate arms 15 for the purpose of forcing the arms normally into engagement with the aforesaid toothed pinion 17, these springs 19 being secured in any suitable manner to corresponding spokes 9 of the wheel, one securing means residing in the staples 21.

95 The cartridges or torpedoes are indicated by the reference character 22, and each cartridge or torpedo is provided with a body portion *a* and a pair of spring fingers *b*, there being a bifurcation 23 in the outer end of each plunger 13 to provide the spaced arms 24. At the lower ends of these arms 24 there are notches 25 adapted to receive the outer ends of the spring fingers *b* to hold the cartridges or torpedoes in the bifurcation 23 of the plungers. It will be noted that the bottom of the bifurcation 23 of each plunger 13 is provided with a cavity 26 which is provided for the purpose of providing a substantially circular edge 27 of the cavity 23 for engagement with the periphery of the body *a* of the cartridge to

prevent premature explosion of the torpedo when the latter is placed upon the rail.

Each of the arms 15 is provided with a flange portion 29, which has an undercut face 28, which engages the cone friction member 30, slidably mounted upon the shaft 7, there being a helical or other spring 31 mounted upon the shaft 7, adapted to bear against the hub 32 of the friction member 30 to force the latter normally between the flange portions 29 of the arms 15, and thus hold said arms normally out of engagement with the pinion 17, and thus inoperative, until said friction member is withdrawn by the operator. Whenever the operator desires to place torpedoes upon the track, he manipulates the lever 33, pivoted to the handle at 34, which lever has pivotal connection at 36 with a link 37 connected at one end to the lever 38 pivoted at 39 in one of the arms 6 of the frame 5. The operation of the lever 33 in one direction causes a pivotal movement of the lever 38 and a consequent shifting of the friction member 30 on the shaft 7 against the pressure of the spring 31, by virtue of the fact that the lever 38 has straddling engagement in the groove 40 of the hub 32, all of which will be understood. Obviously, the moment the friction member 30 is withdrawn from engagement with the arcuate arms 15, the latter are forced into engagement with the pinion 17 through the instrumentality of the aforesaid springs 19, which engagement causes the arms 15 to move outward in the opposite directions as shown, and consequently a movement outward of the plungers 13 to place the torpedoes in spaced position upon the rail 11, as explained above. In operation, the torpedoes are placed within the bifurcation 23, as described, and the sleeve 4 is then placed upon the standard 3, with the flanges 10 of the wheel 8 on rail 11, as shown. When it is desired to place the torpedoes upon the track, the operator manipulates the lever 33, and through the mechanism described, the friction member 30 is withdrawn from engagement with the flange 29, permitting the springs 19 to force the arms 15 into engagement with the stationary pinion 7. When this engagement takes place, owing to the arms being rotated about said pinion 7 in the rotation of the wheel 8 upon the rail, the arms 15 are driven outwardly by the rack shown thereon, until the plunger at the outer end of each of said arms has been carried outwardly a sufficient distance to force the torpedo into engagement with the track rail, as explained. The rail strikes the torpedo in the middle between the fingers *b*, and as there is a space between the position of the torpedo and the part 26 on the plunger 13, it permits the rail to drive the torpedo upward until the spring fingers *b*, whose ex-

tremities are engaged in the notches 25, are above and released from said notches. The rail engaging the inner ends of the fingers *b*, they being closer at their inner ends than at their outer ends, causes the spring fingers to spring into engagement with the rail, as shown in Fig. 5. As soon as the lever 33 is released, the spring 31 presses the friction member 30 again into engagement with the flange 29 on the arms 15, and they are withdrawn from engagement by the outward pressure of said friction member 30. When so released, the arms 15 are returned to their initial position by means of the springs 41. The wheel 8 may then be permitted to trail upon the rail 11 until it is desired to use it again in placing torpedoes, or may be removed from the standard 3, and replaced from time to time as it is desired to be used.

By the means shown it is apparent that one torpedo may be placed, or two may be placed at a certain spaced distance, or if desired, more open ended sockets may be provided, with arms to operate in them, and more than two torpedoes may be placed at spaced distances, as required.

What is claimed is:—

1. A device of the character described comprising a frame including a sleeve and spaced downwardly directed arms, an axle journaled in the free ends of the arms, a wheel journaled on said axle, a toothed pinion on the axle, arcuate toothed arms mounted for sliding movement on the wheel and having their teeth disposed for mesh with said pinion, said wheel having oppositely disposed sockets, a plunger in each socket having pivotal connection with one of said arms, each plunger having means to carry a torpedo, means for throwing the arms normally in mesh with said pinion, and means for throwing the arms and pinion out of operative relation.

2. A device of the character described comprising a frame including a sleeve and arms, an axle fixedly mounted in the arms, a wheel journaled upon the axle and provided with oppositely disposed sockets, a plunger slidably mounted in each socket, an arcuate toothed arm pivotally connected to each plunger, a pinion on said axle for mesh with the teeth of said toothed arms, means for throwing the toothed arms and pinion into coöperative relation, and means for throwing the toothed arms and pinion out of co-operative relation.

3. A device of the character described comprising a frame including a sleeve and spaced arms, a wheel journaled in said arms, means carried by the wheel to support torpedoes, and means constructed and arranged to effect an automatic operation of the last mentioned means to eject the torpedoes.

4. A device of the character described comprising a frame, a wheel journaled in

the frame and provided with sockets, elements movable in said sockets to carry torpedoes, a pinion, and arcuate arms meshing with said pinion to operate said elements and effect the ejection of the torpedoes.

5 5. A device of the character described comprising a frame, a wheel journaled in the frame, a pinion on the journal of the wheel, the wheel having sockets, a plunger in each socket adapted to carry a torpedo, arms pivoted to said plungers and having teeth for mesh with said pinion, means to force said arms normally into operative relation with said pinion whereby rotation of
15 said wheel will effect movement of said plungers in their sockets and effect ejection of the torpedoes carried by the plungers, a member slidable on the journal of the wheel to throw said arms out of mesh with said
20 pinion, and means whereby said slidable element may be operated.

6. A device of the character described comprising a supporting means, a wheel journaled in said supporting means and provided with a plurality of radially disposed sockets, means operable in said sockets to carry torpedoes, and means having operative connection with said last mentioned means to effect operation thereof to eject the torpedoes.

7. A device of the character described comprising a supporting frame, a wheel journaled in the frame and provided with sockets, means operable in said sockets to carry torpedoes, a pinion, arms meshing with said pinion to operate said movable members and effect the ejection of the torpedoes, and means for throwing said arms out of operative engagement with said pinion.

8. A device of the character described comprising a supporting means, a wheel journaled in said supporting means and provided with sockets, means movable in said sockets and operating in a line radial to the center of said wheel and adapted to carry torpedoes, means for operating said movable elements to effect an ejection of the torpedoes, means for holding the means which operates said movable elements normally in operative position, and means for throwing the means which operates said movable means out of operative position.

9. A device of the character described

comprising a supporting frame, a flanged wheel journaled in said means, means carried by the wheel to support torpedoes, and means constructed and arranged to effect operation of the last mentioned means to eject the torpedoes between the flanges of said wheel.

10. A device of the character described comprising a supporting means, a flanged wheel journaled in the supporting means, means carried by the wheel to support torpedoes, and means constructed and arranged to effect an automatic operation of the last mentioned means to eject the torpedoes radially of the wheel and between the flanges thereof.

11. A device of the character described comprising a supporting means, a flanged wheel journaled in the supporting means, means carried by the wheel to support torpedoes, means constructed and arranged to effect an automatic operation of the last mentioned means to eject the torpedoes radially of the wheel and between the flanges thereof, and means for throwing the automatic means out of operation.

12. A device of the character described comprising a supporting means, a wheel journaled in the supporting means, a pinion, toothed arms mounted for sliding movement on the wheel and having their teeth disposed for mesh with said pinion, said wheel having a plurality of sockets, a plunger in each socket having connection with one of said arms, each plunger having means to carry a torpedo, a spring bearing against each arm to hold it normally in mesh with said pinion, each arm having a beveled face, a friction member movable into and out of engagement with the beveled faces of said arms, and means to force said friction member into engagement with the beveled face of said arms to spread the latter and throw their teeth out of mesh with said pinion.

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

ROBT. EDWARD STORY.

ANDREW BRADFORD BOOTH.

JEWETT BOOTH.

Witnesses:

W. H. BRENT,

JAS. A. BRIGNAC.