Dec. 17, 1935. C. H. STANTON 2,024,784

RAILROAD WASHOUT SAFETY SIGNAL

Filed Feb. 8, 1934 2 Sheets-Sheet 1

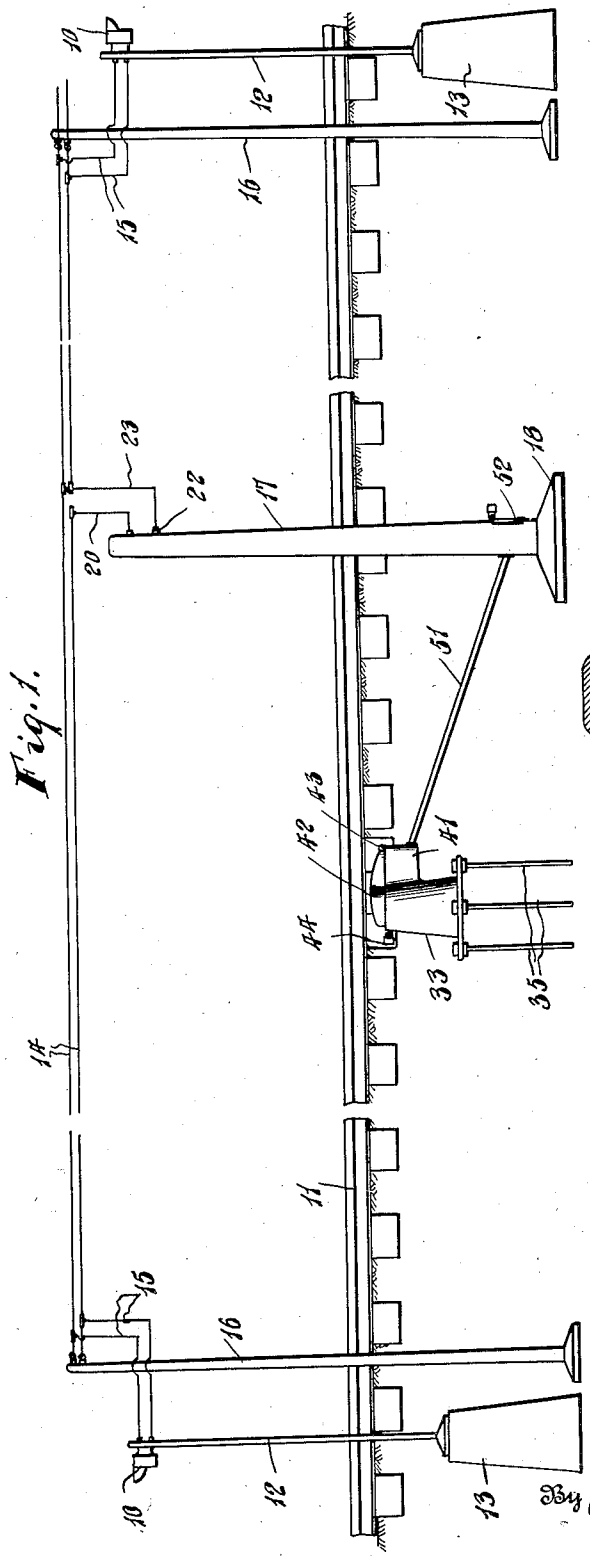


Fig. 1.

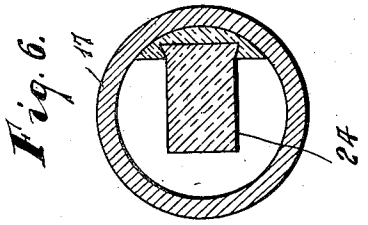


Fig. 6.

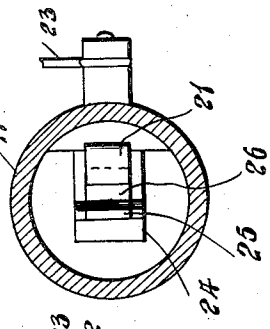


Fig. 5.

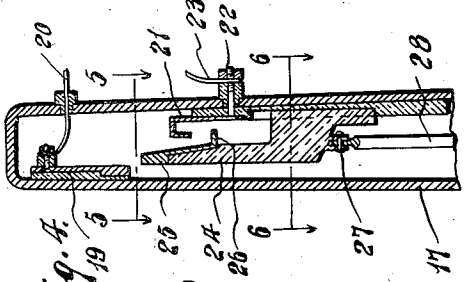


Fig. 4.

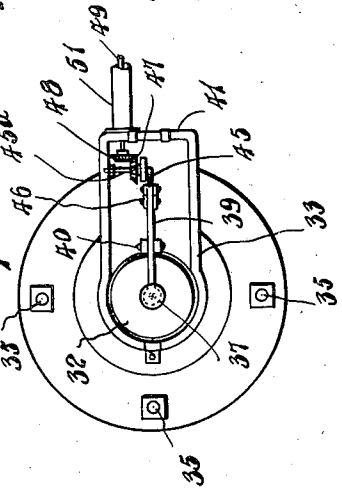


Fig. 3.

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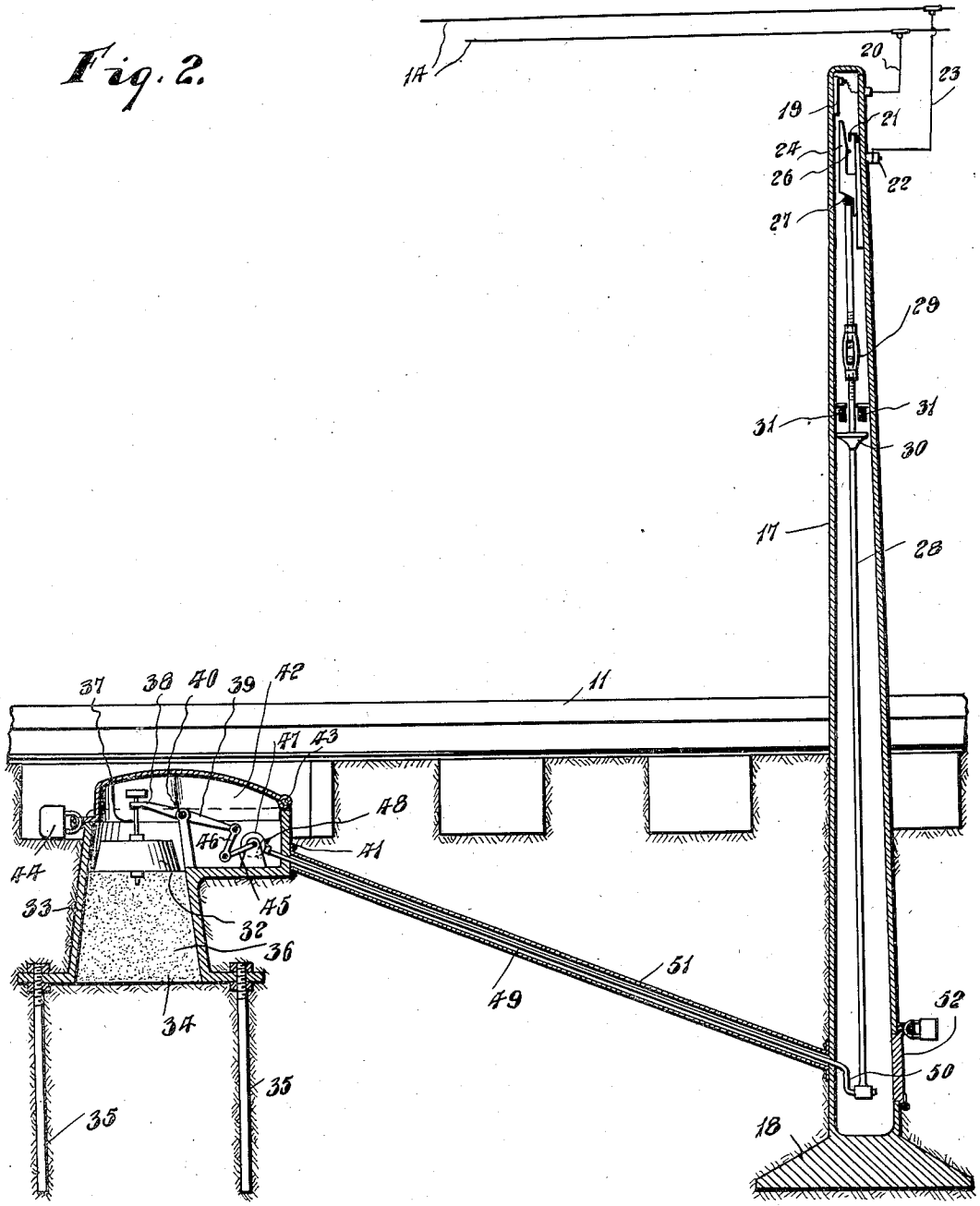
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Filed Feb. 8, 1934 2 Sheets-Sheet 2

Fig. 2.



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Patented Dec. 17, 1935 2,024,784

UNITED STATES PATENT OFFICE

2,024,784

RAILROAD WASHOUT SAFETY SIGNAL

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Application February 8, 1934, Serial No. 710,344

4 Claims. (Cl. 246—121)

This invention relates to a signaling means adapted for automatic operation in the event of a washout on a railroad, to apprise oncoming trains of such fact as a safety feature.

It is aimed to provide a novel means which is weight or other otherwise controlled in the event of a flood or washout, adapted to operate to give a signal.

Another object is to provide a novel construction whereby the signaling means is primarily electric and the circuit for which is adapted to be normally open and closed upon the occurrence of a flood or washout.

It is further aimed to provide a novel construction of circuit closing or switch means in connection with the device.

Referring specifically to the drawings wherein like reference characters designate like or similar parts,

Figure 1 is a view in side elevation illustrating the invention in connection with a section of a railroad;

Figure 2 is an enlarged substantially vertical sectional view through the central part of the apparatus;

Figure 3 is a plan view of the actuating weight stand, with the cover removed;

Figure 4 is an enlarged detail of the switch means;

Figure 5 is a cross sectional view taken on the line 5—5 of Figure 4, and

Figure 6 is a cross sectional view taken on the line 6—6 of Figure 4.

The apparatus is adapted for use along railroads, adjacent rivers, and streams, bridges or the like, where washouts may occur.

Signals are used at 10, in any desired number or distances apart and on either or both sides of the river, stream, bridge or other location most likely to have a washout. Such signals 10 may be electric lamps, bells, or both, thus being either visible or audible or both. These signals are mounted in any suitable way along side of the railroad track suggested at 11, for instance, being elevated and carried adjacent the top of conventional poles 12 having a secure and relatively deep foundation 13. The electric current for energizing the signals 10 is supplied from any suitable source through conductors 14 and from the same through branches 15 to the signals. The conductors 14 are supported or mounted by usual conventional poles 16 having a deep and efficient foundation along one side of the track 11 as shown.

A hollow switch pole 17, of metal, cement, composite or otherwise as preferred, is securely anchored at 18, at the desired depth for security at one side of the track 11. Such pole at the top, interiorly thereof, has a fixed contact 19 insulated from the pole and to which a conductor 20 leads from one of the conductors 14. Another fixed, inverted hook-shaped contact 21 is rigidly fastened within, to and insulated from the pole 17, having a binding post 22 securing it to the pole and to which binding post a conductor 23 leads from the other conductor 14.

Adjacent the top of and within the hollow pole 17 is a vertical slide 24 of suitable insulation which carries a metallic or conductor contact or tip 25 which is normally disengaged from the contacts 19 and 21 as shown in Figure 4. In order to close the electric circuit through the signals, as hereinafter specifically described, the slide 24 moves upwardly to the extent permitted by the engagement of a lug 26 on the contact 25 with the contact 21, at which time, contact 25 also wipes the contact 19, accordingly bridging the contacts 19 and 21 and closing the electric circuit.

Said slide 24 is pivotally connected as at 27 to a vertical rod 28 having a turn buckle 29 therein enabling adjustment as to length in order to properly position the contact 25. An abutment 30 is carried by the rod 28 and is engageable with cushioning springs 31 adjacent the end of the upward movement of the rod 28 to minimize the impact of engagement of lug 26 with the hook contact 21.

The circuit is closed to the said switch 19—21—25 through the falling of a weight 32 or equivalent means. This weight 32 is located within a casing 33 open at its bottom as at 34 and supported as by means of rods 35 driven many feet into the ground or in any other manner efficiently supported. Within the casing 33 is a body of sand 36 or other material which is more rapidly washed away than ordinary soil in the event of heavy rains or a flood. This sand 36 normally holds the weight 32 in its uppermost and hence inoperative position, but in the event the sand 36 is washed away, the weight 32 will fall and effect the operation of the signals as a safety feature. Said weight 32 is carried by a rod 37 which passes through an eyelet 38 of a lever 39 which is pivoted as at 40 on the upper end of a wall of the casing. The casing is provided with an extension 41 forming a chamber to which extension a cover 42 is pivoted at 43, for the casing, being held in closed position by padlock means as at 44.

Journaled transversely of the extension 41 is a shaft 45, having a crank 45a to which a link 46 is pivoted and which in turn is also pivoted to the lever 39. On shaft 45 is a bevel gear 47 enmeshed with a bevel gear 48 rigid on a shaft 49 having a crank at 50 operatively connected to the rod 28. Shaft 49 extends through a tube 51 connected to the extension 41 and to the hollow pole 17. A removable cover plate 52 is provided in pole 17 adjacent the crank 50 for inspection and repair purposes.

It will be realized that in the event of water washing away the sand 36, or other material, or fluent and ordinary soil, the weight 32 will drop thus tilting lever 39, elevating link 46 and tilting crank 45a and shaft 45, causing gears 47 and 48 to rotate the shaft 49 and through the crank 50 elevate rod 28 and thereby move the contact 25 into circuit closing engagement with contacts 19 and 21, thus giving the signal or alarm to approaching trains as a safety feature.

Various changes may be resorted to provided they fall within the spirit and scope of the invention.

I claim as my invention:—

1. Mechanism of the class described, in combination with the ballast of a railway track bed containing a body of material more fluent than the ballast, the mechanism comprising a signal, a casing, a weight within said casing, the material in said ballast being partly disposed in said casing normally supporting the weight in a raised position, means operable by the weight to energize the signal through lowering of the weight by washing away of the material prior to the ballast, a lever pivoted within the casing to which the weight is connected, a hollow body, a switch in said body, an operating rod controlling the switch, means to actuate said rod through movement of the lever to control the signal, said switch comprising spaced contacts carried by the body, a slide on the rod, and a contact on the slide engageable with both of said first mentioned contacts.

2. Mechanism of the class described, in combination with the ballast of a railway track bed containing a body of material more fluent than the ballast, the mechanism comprising a signal, a casing, a weight within said casing, the material in said ballast being partly disposed in said casing normally supporting the weight in a raised position, means operable by the weight to energize the signal through lowering of the weight by washing away of the material prior to the ballast, a lever pivoted within the casing to which the weight is connected, a hollow body, a switch in said body, an operating rod controlling the switch, means to actuate said rod through movement of the lever to control the signal, said switch comprising spaced contacts carried by the body, a slide on the rod, a contact on the slide engageable with both of said first mentioned contacts, the third mentioned contact being engageable with one of the first mentioned contacts for limit of its movement, and cushioning means to minimize the impact of engagement of the contacts.

3. A device of the class described comprising a casing having a lateral extension, a hollow wall interiorly of the casing at the junction of the extension therewith, a lever within the casing pivoted to said wall, a weight carried by the lever, a casing having an open bottom and adapted to contain material more fluent than railway ballast and on which the weight rests, a shaft journaled within the extension, a crank on said shaft connected to said lever, a switch-operating rod extending from said casing, and gearing within the casing between said shaft and switch operating rod.

4. Mechanism of the class described, in combination with the ballast of a railway track bed containing a body of material more fluent than the ballast, the mechanism comprising a signal, a casing, a weight within said casing, the material in said ballast being partly disposed in said casing normally supporting the weight in a raised position, means operable by the weight to energize the signal through lowering of the weight by washing away of the material prior to the ballast.

CHARLES H. STANTON.