

E. O. GRAY.
STOP MECHANISM FOR LOCOMOTIVES.
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1,066,409.

Patented July 1, 1913.

2 SHEETS—SHEET 1.

Fig. 1.

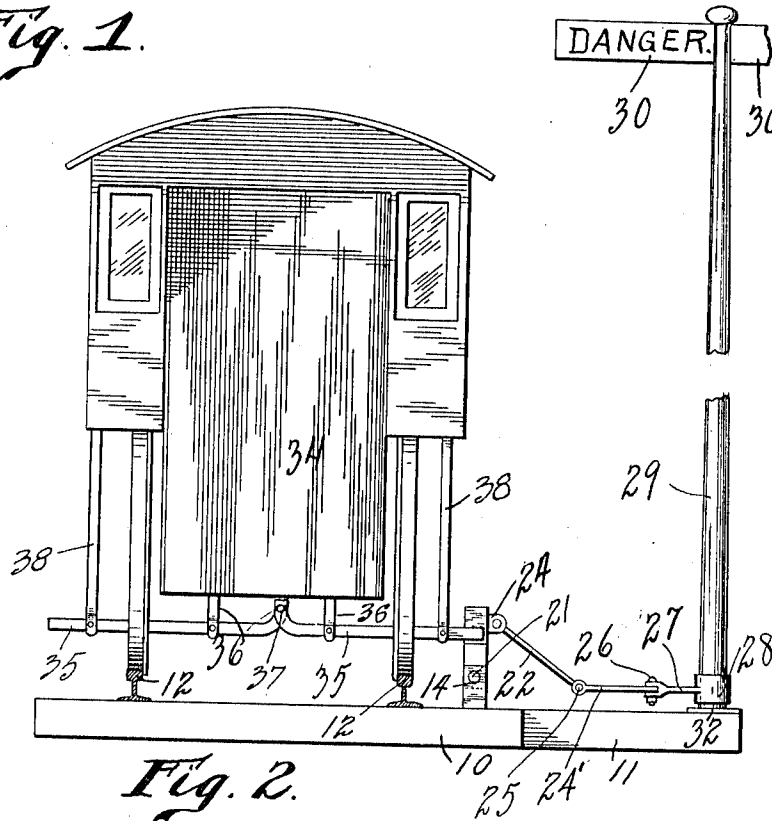
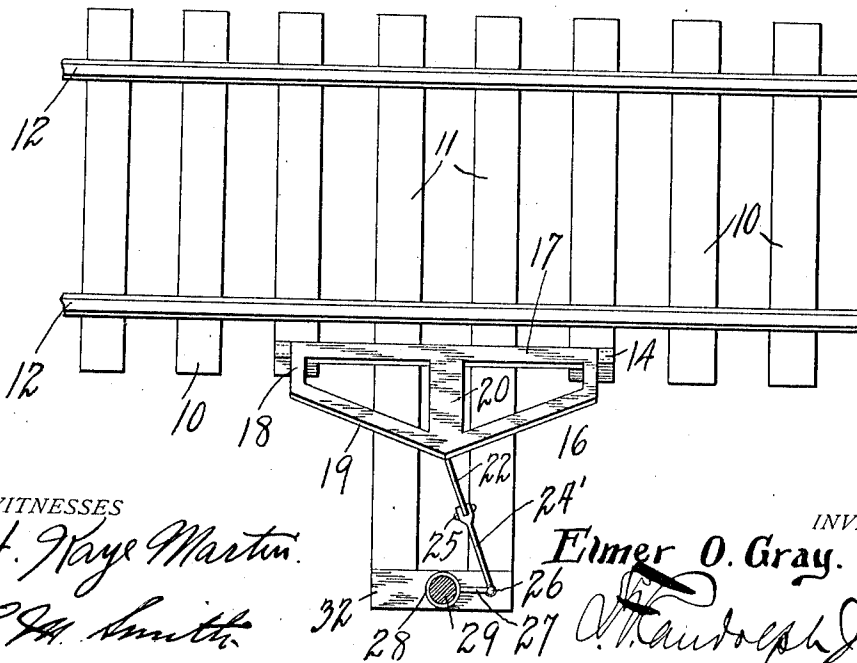


Fig. 2.



WITNESSES

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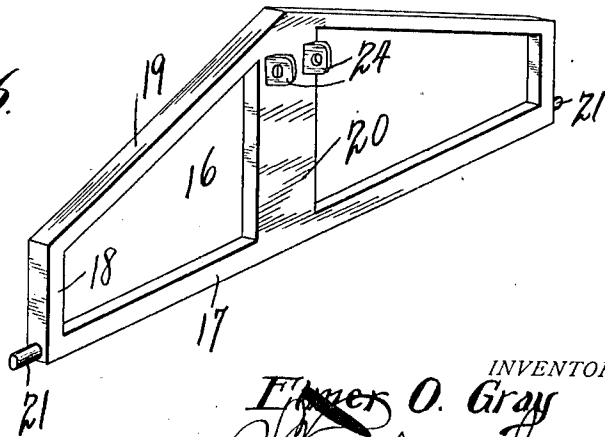
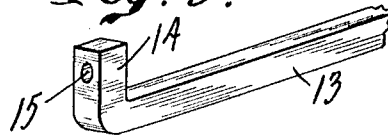
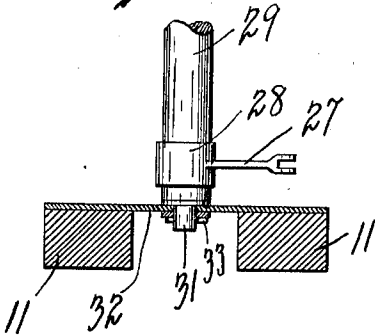
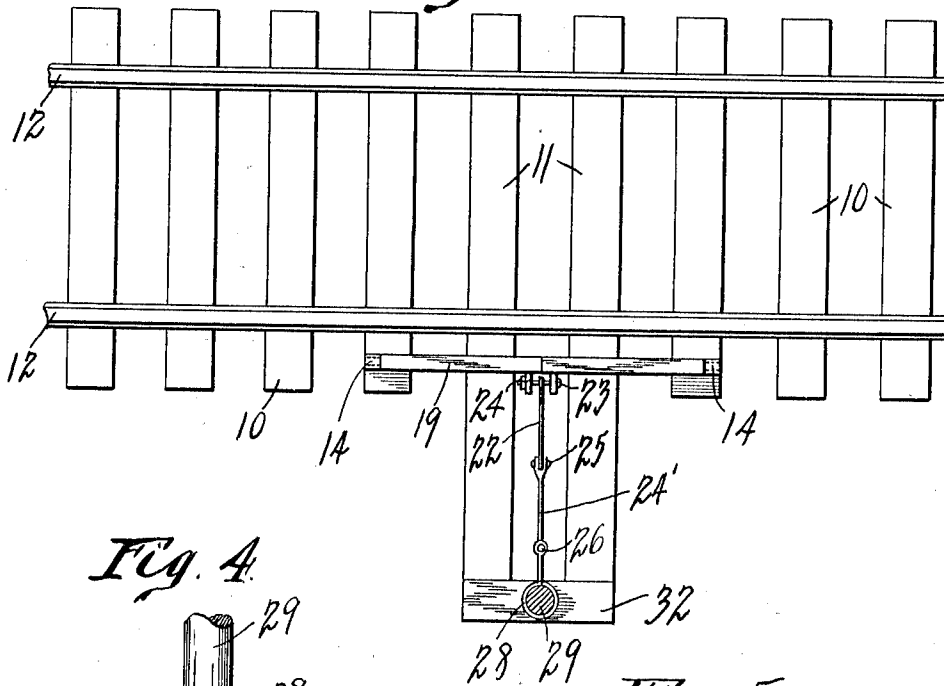
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2 SHEETS—SHEET 2.



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STOP MECHANISM FOR LOCOMOTIVES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ELMER O. GRAY, a citizen of the United States, residing at Colebrook, in the county of Coos and State of New Hampshire, have invented certain new and useful Improvements in Stop Mechanism for Locomotives, of which the following is a specification.

This invention comprehends improvements in safety appliances for locomotives, etc., and relates more particularly to mechanism for automatically stopping a locomotive should the same run by a signal set at danger.

The primary object of the invention is to provide a novel form of obstacle and novel means actuated by the rotation of a signal post, for throwing said obstacle into its operative or inoperative position.

The invention also aims to generally improve devices of this nature to render them more useful, reliable, and commercially desirable.

With these and other objects in view, as will become more apparent as the description proceeds, the invention consists in certain novel features of construction, combination, and arrangement of parts, as will be hereafter described and claimed.

For a complete understanding of my invention, reference is to be had to the following description and accompanying drawings, in which,

Figure 1 is an end elevation of my invention, showing the same in the act of engaging means carried upon a locomotive for stopping the same, Fig. 2 is a top plan view of my invention, showing the same in its inoperative position, Fig. 3 is a similar view, showing the device in its operative position, Fig. 4 is a fragmentary detail view of one end of a signal post and connections thereof, Fig. 5 is a detail perspective view of one end of the obstacle, and, Fig. 6 is a perspective view of the trip.

Referring in detail to the drawings by numerals, 10 designates the ordinary cross ties of a railroad track, 11 a pair of ties of greater length than the first mentioned ties, and 12 the rails which are secured to said ties. A U-shaped frame 13 having the arms 14, which are provided with openings 15, extending parallel to the central portion of the frame, is secured in parallel relationship to the rails 12. The frame is positioned upon

the outer side of one of the rails and is secured to the ties 11 and the ties 10, which are adjacent thereto.

16 designates generally an obstacle comprising a horizontal bar 17, relatively short bars 18 extending from the ends of the first mentioned bar at right angles thereto, and oppositely inclined bars 19. A central brace bar 20 somewhat greater in length than the bars 18 and extending parallel thereto, is formed integrally with the bars 17 and the meeting ends of the bars 19. The obstacle is preferably formed integral and is of such size and material as to have the required strength. It is to be understood that the arms 19 may be of any relative length and inclined at any suitable angle to the bars 17. Trunnions 21 extend longitudinally from the ends of the bars 17 and are fitted within openings 15, whereby the trip member is pivotally secured to the frame 13.

A link 22 is pivotally secured at one end to the bar 20 adjacent its outer end by means of a bolt 23 which passes through apertured ears 24 formed upon said bar and through the end of the link. The opening in the end of the link through which the bolt 23 passes is somewhat larger in diameter than said bolt. The other end of the link 22 is pivotally connected to the bifurcated end of a horizontal link 24' by means of a suitable horizontal pivot 25. The link 24' is connected at its other end by means of a vertical pivot 26 to the bifurcated end of the arm 27, which arm is rigid with a collar 28 fixed to the signal post 29. The post 29 carries the usual arms 30 and is rotatably secured in a vertical position by means of the reduced cylindrical portion 31, which extends through an opening in the cross plates 32. A cotter pin or similar fastening 33, retains the reduced portion 31 within the opening in the cross plate.

Upon reference to Fig. 1, the relative positions of the various members forming the connection between the obstacle and the signal post may be readily perceived. When the signal arms 30 are extended at right angles to the rails 12 to indicate danger, the arm 27 will extend directly toward the tracks and the trip member 16 will be retained in its operative position. When the post 29 is rotated so as to dispose the arms 30 parallel to the track, the free end of the arm 27 swings away from the track, pulling

the obstacle from its operative position to its inoperative position, as shown in Fig. 2. It is to be noted that the vertical pivot 26 holds the link 24' always in a horizontal plane so that the inclined link 22 will operate effectually.

Any suitable mechanism may be secured to the locomotive 34 for coöperation with the obstacle 16 in order that the steam may be cut-off from the cylinders and the air brakes applied. For the purpose of illustration, I have shown a pair of levers 35 pivotally supported intermediate their ends by the depending standards 36 and projecting at their outer ends so as to engage the obstacle when the same is in its operative position. The inner ends of the levers are upturned, as indicated in Fig. 1, and are connected by pins 37, which work within a slot formed in one of the levers. Rods 38 are pivotally connected to the levers adjacent their outer ends and are moved upwardly, when one of said levers comes in contact with the obstacle, to control the flow of steam and air. It will be seen that this construction provides for a simultaneous movement of the rods 38 and that it is only necessary to provide a single obstacle to stop the train when it is moving in either direction.

It is to be understood that while I have shown and described the preferred embodiment of my invention, I do not wish to be limited to this exact construction, combination, and arrangement of parts, but may

make such changes as will fall within the spirit and scope of the invention.

Having thus described my invention, what I claim is:—

In safety stop mechanism for locomotives, the combination of a U-shaped frame secured parallel to the rails in the same horizontal plane therewith, the arms of the frame being upturned and apertured, an obstacle comprising a horizontal base bar, end bars extending at right angles thereto, oppositely inclined top bars, and a central bar longer than said end bars, the central bar being connected to the meeting ends of the top bars, trunnions extending longitudinally from the bottom bar and fixed within said openings, a pair of ears formed upon the central bar adjacent the outer end thereof, a link, a horizontal pivot connecting one end of said link to the ears, a second link, a horizontal pivot connecting said links, a rotatable signal post, a horizontal arm rigid with said signal post, and a vertical pivot connecting the free end of said arm to the second mentioned link, the rotation of the signal post causing the obstacle to swing into or out of the path of the trip carried by the locomotive.

In testimony whereof I affix my signature in presence of two witnesses.

ELMER O. GRAY.

Witnesses:

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."