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W. T. GATES.

SAFETY SIGNAL BOARD ATTACHMENT.

APPLICATION FILED JULY 13, 1906.

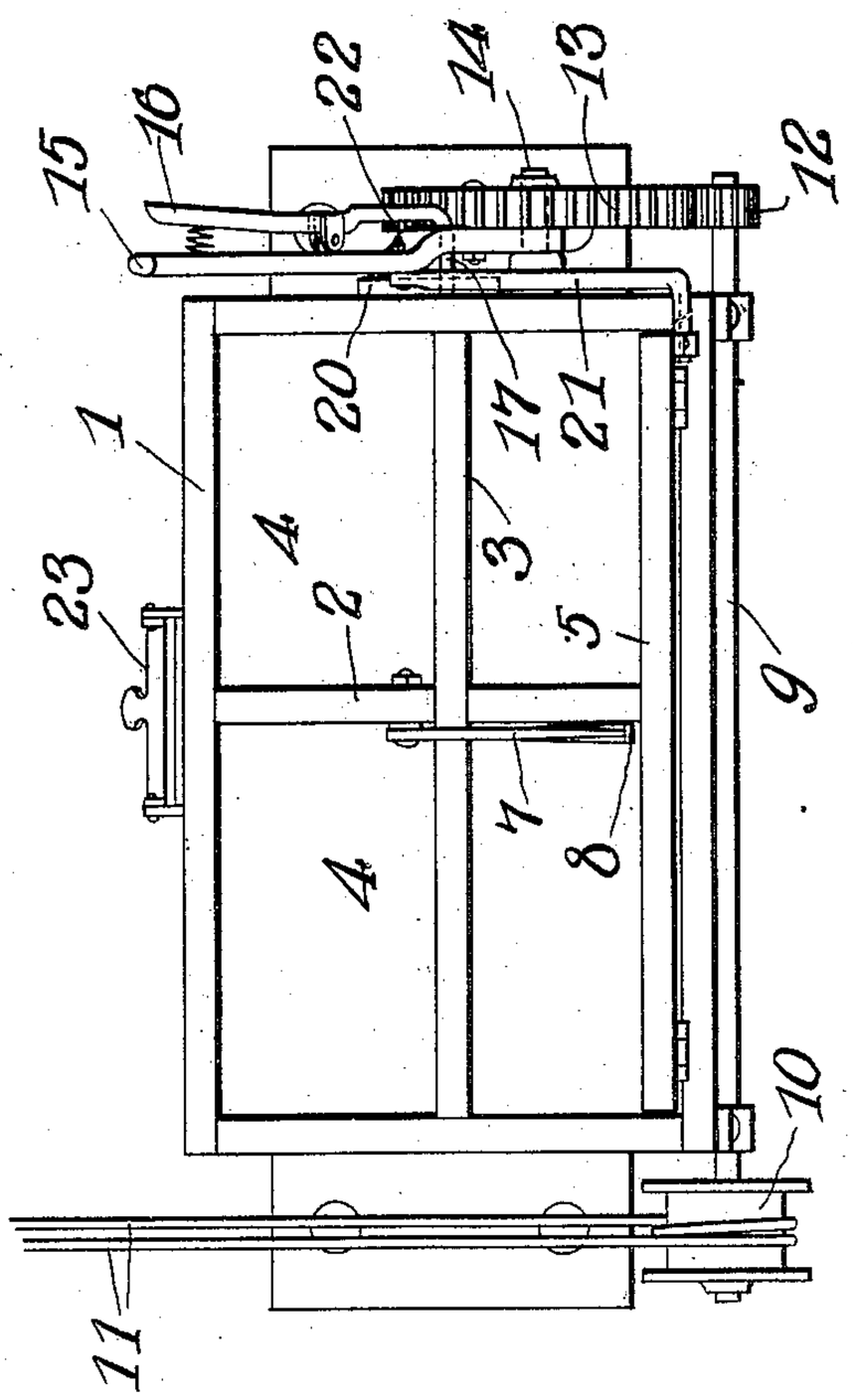

Fig. 1.

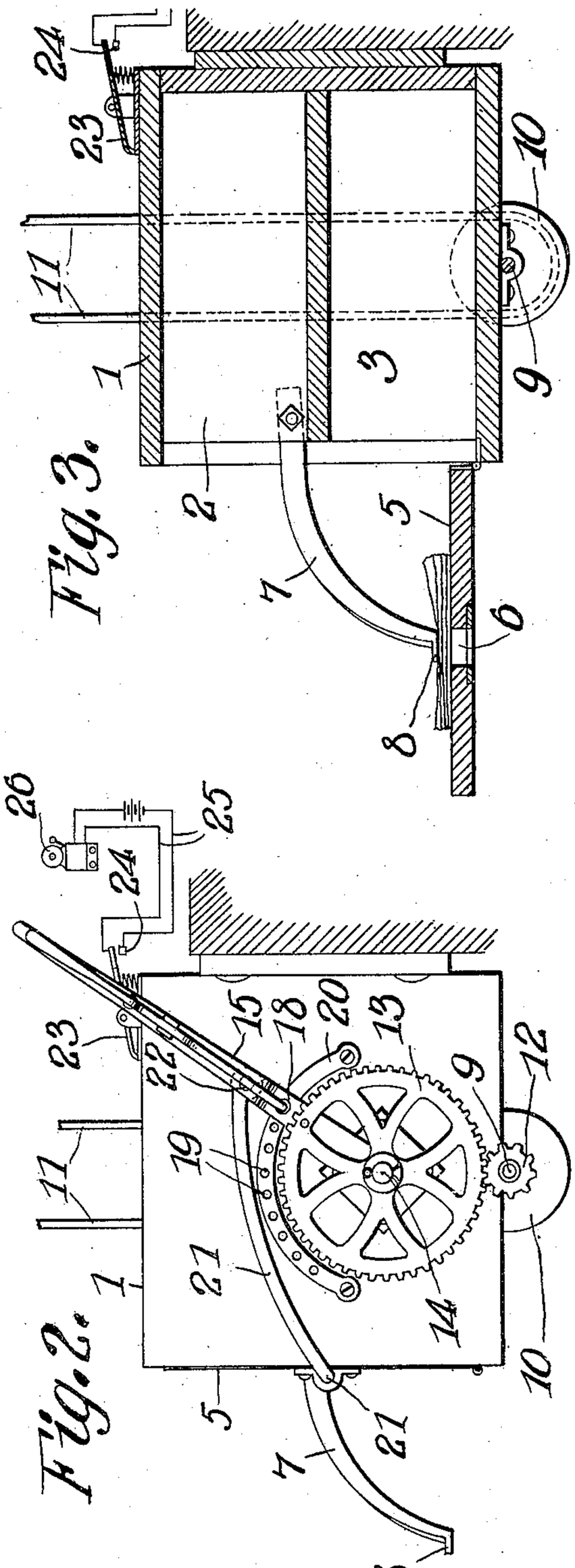

Fig. 2.

Fig. 3.

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SAFETY-SIGNAL-BOARD ATTACHMENT.

No. 845,076. Specification of Letters Patent. Patented Feb. 26, 1907.

Application filed July 13, 1906. Serial No. 326,149.

To all whom it may concern:

Be it known that I, WILLIAM THOMAS GATES, a citizen of the United States, residing at Aubrey, in the county of Denton and State of Texas, have invented a new and useful Safety-Signal-Board Attachment, of which the following is a specification.

This invention relates to safety signal-boards, and it is particularly adapted for use by railroad operators.

The object of the invention is to provide means whereby it becomes impossible for an operator to take an order for a train without first displaying a danger or stop signal or to indicate a clear road for the train when he has an order which should be delivered to it.

With these and other objects in view the invention consists of a case in which the orders for various trains are adapted to be placed, and this case has a closure which is adapted to be opened automatically when the stop or danger signal of the semaphore is projected. The orders for the various trains are adapted to be placed within this case and can only be reached by opening the closure, which of course necessitates the setting of the danger or stop arm of the semaphore. The orders are adapted to be placed upon the closure, and when so positioned means are provided whereby the case cannot be closed and the clear-signal displayed unless the orders are replaced in the case. Should it be desired to remove the orders and to close the case, so as to show the clear-signal, said orders can be placed in a clip upon the case provided for the purpose; but this will result in the constant ringing of an alarm as soon as the orders are in this position.

The invention also consists of certain other novel features of construction and combinations of parts, which will be hereinafter more fully described, and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings, Figure 1 is a front elevation of the apparatus open. Fig. 2 is an end elevation of the closed apparatus and showing the alarm apparatus diagrammatically; and Fig. 3 is a vertical section through the case and showing the cover open and orders in position thereon to lock the cover in said position.

Referring to the figures by characters of reference, 1 is a case subdivided by vertical and horizontal partitions 2 and 3 into compartments 4, in which are train-order manifold-books. A closure 5 is hinged to the forward edge of the bottom of the case and is adapted to swing upward and close the case. This closure has an opening 6, preferably adjacent the center thereof, and the curved arm 7 is fastened to the vertical partition 2 and is adapted when the closure is swung upward to project through the opening 6, as shown more particularly in Fig. 2. A foot 8 is arranged at the free end of the arm 7, and when the closure is opened this foot is supported slightly above the top surface thereof, so that the train-order manifold-book can be placed on the closure and under the foot.

A shaft 9 is journaled under the case and extends from side to side thereof, and secured upon one end of the shaft is a drum 10, about which is wound a cable 11, adapted to be secured to and to actuate the danger or stop arm of a semaphore. A gear 12 is secured to the other end of the shaft 9 and meshes with a large gear 13, journaled on a stud 14, extending from one side of the case. A lever 15 is secured to this gear 13, whereby the same may be partly rotated manually. A spring-pressed locking-lever 16 is fulcrumed upon the lever 15 and has a finger 17 extending therefrom and through an opening 18 in lever 15. This finger is adapted to be seated in any one of a series of apertures 19, formed in a plate 20, said apertures being disposed in an arc concentric with the gear 13. A link 21 is pivotally secured to the closure 5 and is also pivoted to the lever 15, as at 22.

A spring-clip 23 is arranged at the top of the case, and a contact 24 is disposed thereunder and is adapted to be contacted thereby whenever a manifold-book is placed within the clip. The clip and contact are connected to the two wires of an electric circuit 25, in which a bell or other alarm 26 is included. As heretofore indicated, the train-order manifold-books are normally located within the compartments 4, and whenever the white or clear arm of the semaphore is exposed the closure 5 is raised, so that access cannot be had to the compartments. This position of the parts is shown in Fig. 2. When an order is to be given to a train, the operator releases the lever 15 and swings it forward, so as to open the closure. The same operation will cause the rotation of drum 10 and the display of the stop or danger arm of the sema-

phore. The manifold-book can then be removed from the compartment and placed on the closure and beneath the arm 7, as shown in Fig. 3. It will thus be impossible to again display the white or clear arm of the semaphore unless the manifold-book is removed from under the arm 7, because, as shown in the drawings, this book will prevent the arm from projecting through the opening 6, and it will not, therefore, be possible to swing the lever 15 and actuate the semaphore. The danger or stop signal can only be removed after this manifold-book has been withdrawn from under the arm 7. If it should be desired to display the white or clear arm to a train for which there are no orders, the manifold-book may be placed within the clip 23, so that the closure may be swung upward. Said clip will close the circuit through the contact 24 and cause the continuous sounding of the alarm 26 while the book is in position within the clip. This will prevent the operator from overlooking the fact that the book is to be used for giving orders to the next train, and after the passage of the train to which no orders are to be delivered the danger or stop signal may be reset and the manifold-book placed upon the closure and under the arm 7. Not only does the book serve to lock the closure in open position, but the arm also prevents the leaves of the book from blowing out of place.

In some cases a segmental rack may be employed for locking the lever 15 instead of the perforated plate 20. (Shown in Fig. 2.) When the rack is used, the latter will be mounted on the stud 14 with its peripheral teeth disposed in the path of movement of the lever, so that when the lever is adjusted laterally the locking-pawl will engage said teeth and lock the lever in adjusted position.

It is to be understood that by the term "semaphore" herein used is meant any form of signal which may be operated by means of the mechanism herein described.

The preferred form of the invention has been set forth in the foregoing description; but I do not limit myself thereto, as I am aware that modifications may be made therein without departing from the spirit or sacrificing the advantages thereof, and I therefore reserve the right to make such changes as fairly fall within the scope of the claims.

What is claimed is—

1. The combination with a case having a hinged closure and arm rigidly connected to the case and adapted to project through the closure when the case is closed and to be suspended thereabove when the case is opened; of semaphore-actuating means, and mechanism actuated by said means for operating the closure.

2. The combination with a case, a hinged closure therefor, and an arm rigidly connected to the case and adapted to project through and to be supported above the closure when the case is closed and opened respectively; of semaphore-actuating means, and mechanism operated by said means for opening the case when one signal of the semaphore is displayed and for closing the case when another signal of the semaphore is displayed.

3. The combination with a case having an apertured closure and an arm rigidly connected to the case and adapted to project through the closure when the case is closed and to be supported above the closure when the case is opened; of semaphore-actuating mechanism, a lever for actuating the same, and a link connection between the lever and closure.

4. The combination with a case, an apertured closure therefor, and an arm rigidly connected to the case and adapted to project through the aperture when the case is closed and to be supported above the closure when the case is opened; of semaphore-actuating mechanism, a lever for operating said mechanism, means for locking the lever in a predetermined position, and a link connection between the closure and the lever.

5. The combination with a case having a closure hinged thereto, and an arm rigidly connected to the case and adapted to project through the closure when the case is opened; of a rotatable semaphore-actuating shaft, a lever fulcrumed upon the case, means operated by the lever for rotating the shaft, means for locking the lever in adjusted position, and means for transmitting motion from the lever to the closure to open and close the case.

6. The combination with a case, an apertured closure therefor, and an arm rigidly connected to the case and adapted to project through the aperture when the case is closed and to be supported above the closure when the case is opened; of semaphore-actuating mechanism, a lever for operating said mechanism, means for locking the lever in a predetermined position, a link connection between the closure and the lever, a clip upon the case, and an alarm adapted to be sounded by the clip for engaging an object.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

WILLIAM THOMAS GATES.

Witnesses:
S. C. HENDERSON,
B. P. SPERRY.