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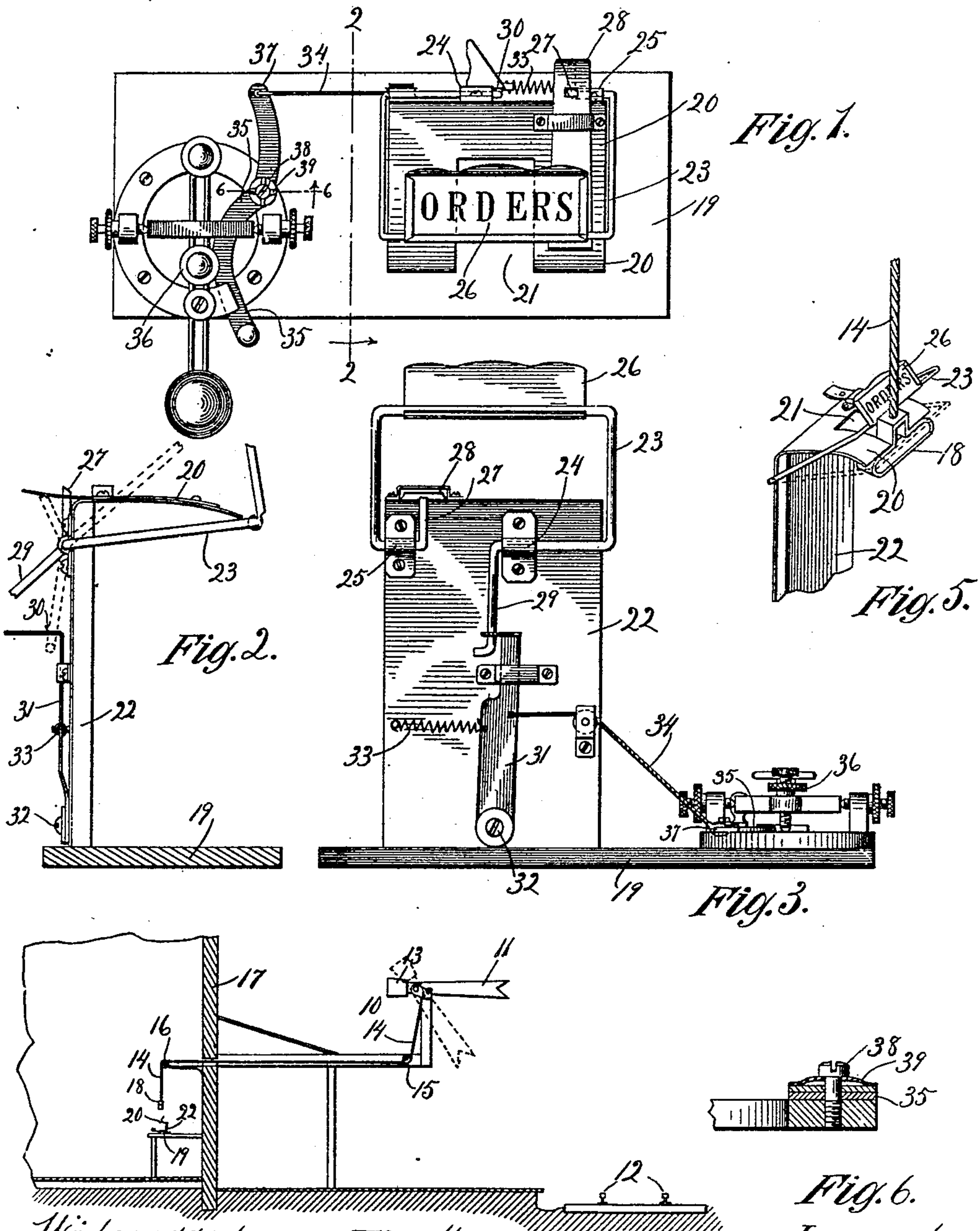
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AUTOMATIC REMINDER FOR TELEGRAPH OPERATORS.

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Fig. 4

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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC REMINDER FOR TELEGRAPH OPERATORS.

No. 832,303.

Specification of Letters Patent.

Patented Oct. 2, 1906.

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*To all whom it may concern:*

Be it known that I, SAMUEL F. ESTELL, a citizen of the United States, and a resident of Los Angeles, county of Los Angeles, and State of California, have invented certain new and useful Improvements in Automatic Reminders for Telegraph Operators, of which the following is a specification and which are illustrated in the accompanying drawings, forming a part thereof.

The invention relates to a device for use in connection with electric-telegraph apparatus for reminding a telegraph operator of instructions received by telegraph when the time arrives for him to act under them.

More particularly, the invention relates to such a device intended to remind a railway-telegraph operator of instructions regarding the shifting of signals for the control of railway-trains, and has for its object to increase the safety of railway travel by avoiding the necessity of depending entirely upon the memory of one intrusted with the duty of signaling trains to insure the proper setting of signals when the train arrives.

The invention is exemplified in the structure to be hereinafter described, and illustrated in the accompanying drawings, in which—

Figure 1 is a plan view showing a device constructed according to the invention and the method of connecting it to telegraph apparatus of well-known form. Fig. 2 is a vertical section taken on the line 2 2 of Fig. 1. Fig. 3 is a rear elevation of the parts illustrated in Fig. 1. Fig. 4 is a sectional view showing details of a railway track and station, the parts illustrated in Figs. 1, 2, and 3 appearing in side elevation. Fig. 5 is a detail of the device, drawn in perspective; and Fig. 6 is a sectional detail taken on the line 6 6 of Fig. 1.

The particular form of device illustrated in the drawings is intended for preventing a railway-telegraph operator or train despatcher who has received instructions or orders for the crew of an approaching train from forgetting to signal the train when it arrives to stop for its orders.

In railway practice it is customary to provide at certain predetermined points along the route, usually points common with those also selected as stations for the receiving and discharge of freight or passengers, a manually-controlled signal supported in an elevated position adjacent the track and com-

monly termed a "semaphore." At such points a telegraph operator is constantly in attendance, and he receives by telegraph from time to time instructions for the conduct of trains, which he transcribes and delivers to those in charge of the train when it reaches his station. At many stations certain trains stop only if the operator at that point has received instructions to deliver to its crew; but it has been found desirable to display at every station, by means of the semaphore just referred to, a signal which indicates at all times, except just at the moment a train is to be allowed to pass, that approaching trains are to stop. If then the operator has no instructions to deliver to the crew of a train and there are no passengers or freight to be taken on at his station, he shifts the signal of his semaphore when he hears the train approaching, indicating in that way that the train may pass without stopping. If, however, he has instructions for the conduct of a train or for any other reason wishes it to stop at his station, he leaves his signal as it normally is. It frequently happens that the telegraph operator in charge of such a signal has various other duties to perform—as, for example, to care for freight and express-packages, to sell tickets, and the like. Moreover, in order that traffic may not be unnecessarily delayed he is expected to shift his signal to permit a train to pass without stopping as soon as he hears a train approaching and recognizes it to be one which does not generally stop at his station unless he has reason for doing otherwise. In so doing he is not unlikely to shift his signal to permit a train to pass without stopping before he recalls having received instructions to deliver to the crew of that train, and as a result the train proceeds upon the supposition of its crew that the condition of the track ahead and the time of trains running thereon is as usual, when, in fact, there has been a change of one or the other. Serious accidents occur not infrequently for just this reason. In carrying out the invention it is proposed to avoid such accidents by providing a device for use in railway-stations designed to be automatically shifted when a telegraphic message is received at that station and which will then prevent the operator from changing the signal of his semaphore without first being reminded of the receipt of such a message.

In the drawings there is shown a railway-



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signal or semaphore 10 of that type having a signal-arm 11 pivotally supported in an elevated position adjacent the rails of a track 12 to swing in a vertical plane. The signal-arm 11 is preferably provided with a counterweight 13, by means of which it is normally held in a horizontal position to indicate, as understood in railway practice, that trains approaching on the track 12 are to stop.

When a train is to be allowed to pass without stopping, the signal-arm 11 is drawn to the dotted-lines position of Fig. 4, preferably by means of a flexible cord or cable 14, attached to the signal-arm beyond its pivot and, as shown, leading over pulleys 15 16 to the interior of a station house or shelter 17 and having at its end a T-handle 18, which hangs in a conveniently-accessible position over an operator's desk 19 within the station.

To support the signal-arm 11 in the inclined position, there is provided within the station a hook for engaging the end of the cable 14, which, as shown, takes the form of a horizontally-disposed plate 20, having a notch 21 for receiving the shank of the T-handle 18, carried by the cable and supported by a bracket-plate 22, rising from the surface of the desk 19.

An arm 23, preferably of yoke form and pivotally secured at 24 25 to the rear face of the bracket-plate 22, is provided to swing in front of the plate 20 to close the notch 21, thereby preventing the handle 18 from being hooked therein and the signal-arm 11 from being secured in its lowered position. As shown, the arm 23 is formed of wire and carries a placard 26, suitably printed to attract the attention of the operator. One of its ends, as 27, extends beyond the pivot 25 to engage when the arm is in the position indicated by full lines in Fig. 2, in which it closes the notch 21 of the plate 20, a spring-latch 28, carried by the plate 20, while its other end 29 extends from the pivot 24 to engage when the arm is raised to the dotted-lines position of Fig. 2 the hook 30 of a trigger 31, as shown, pivotally attached to the rear face of the bracket-plate 22 at 32 and normally advanced to receive the end of the arm by a spring 33. The arm 23 is adapted to fall by gravity when the trigger 31 is released and cannot be again raised until its end 27 is disengaged by manually raising the spring-latch 28.

The trigger 31 is designed to be operated whenever a telegraphic message is received at the station 17, and to this end is connected, preferably by a cord or cable 34, to the circuit-lever 35 of a telegraph-key 36. This key is of ordinary construction, except, as shown, the circuit-lever 35 has a rearwardly-extended portion 37, to the end of which the cord 34 is attached and is provided at its pivot 38 with a friction-washer 39, Fig. 6, which affords sufficient resistance to its

movement to prevent the lever from being shifted by means of the spring 33 controlling the trigger 31.

In practice the arm 23, bearing the placard 26, will normally occupy an inclined position, as shown by dotted lines in Fig. 2 and by full lines in Fig. 5, being supported in this position by means of the trigger 31, in the hook 30 of which the extended end 29 of the arm is secured. When the arm is in this position, the handle 18 of the cable 14 may be hooked into the notch 21 of the plate 20, Fig. 5, to secure the signal-arm 11 in its inclined position, indicating that a train approaching on the track 12 may pass without stopping. The normal position of the signal-arm 11, however, is horizontal, and when the signal is in that position the handle 18 of the cable 14 is disengaged from the plate 20 and hangs some distance above it, as shown in Fig. 4. Whenever a telegraphic message is to be received at the station 17, the operator's attention is first called by certain sounds produced upon his telegraph instrument, (not shown,) and when he is ready to take the message he opens the circuit by shifting the circuit-lever 35 and announces that fact to the sender of the message by means of the telegraph-key 36. The shifting of the circuit-lever 35 moves the trigger 31, permitting the arm 23 to fall to close the opening of the notched plate 20 and display the placard 26. With the parts in this position the operator will be unable to pull down the signal-arm 11 by means of the cable 14 and secure it in its inclined position to allow an approaching train to pass without having the receipt of the message called to his attention, as he cannot hook the end of the cable into the notch 21 of the plate 20 without first raising the arm 23 and the placard 26. If then the message contained instructions to hold the train or was in the nature of orders to be delivered to the crew of the train, he will leave his signal in its normal position, thus indicating that the train is to stop, while if the message did not relate to the approaching train he may easily raise the arm 23 to its inclined position to permit him to hook the handle 18 into the notch 21 of the plate 20 by releasing the spring-latch 28.

I claim as my invention—

1. The combination with a signal apparatus including a hook for receiving a signal-cord and a telegraph-key having a circuit-lever, of an oscillatable arm movable in front of the opening of the hook, a trigger normally in the path of movement of the arm, and operative connection between the trigger and the circuit-lever of the telegraph-key.

2. The combination with a signal apparatus including a hook for receiving a signal-cord and a telegraph-key having a circuit-lever, of an oscillatable arm movable in front of the opening of the hook, a trigger for ar-



resting the movement of the arm in one direction, operative connection between the trigger and the circuit-lever of the telegraph-key, and a latch for arresting the movement  
5 of the arm in the reverse direction.

3. The combination with a signal apparatus including a movable signal member and a telegraph-circuit having a lever for opening the circuit, of an oscillatable arm movable  
10 into the path of the signal member, means for arresting the movement of the arm in one direction, and operative connection between such arresting means and the lever of the telegraph-circuit.

15 4. The combination with a telegraph-key having a circuit-lever, of an oscillatable arm carrying a placard, a trigger for arresting the movement of the arm in one direction, operative connection between the trigger and the  
20 circuit-lever of the telegraph-key, and a latch for arresting the movement of the arm in the reverse direction.

5. In combination, an automatic reminder-signal, a detent for holding the signal out of indicating position, an electric-circuit switch, 25 and a cord connecting the switch and the detent.

6. In combination with a shiftable handle, an obstruction automatically movable into the path of the handle, a detent for holding 30 the obstruction out of operative position, an electric-circuit switch, and operative connection between the switch and the detent.

7. The combination with a telegraph-circuit, of a manually-controlled lever for opening the circuit, an automatic reminder-signal, a detent for holding the signal out of indicating position, and operative connection 35 between the detent and the lever.

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