

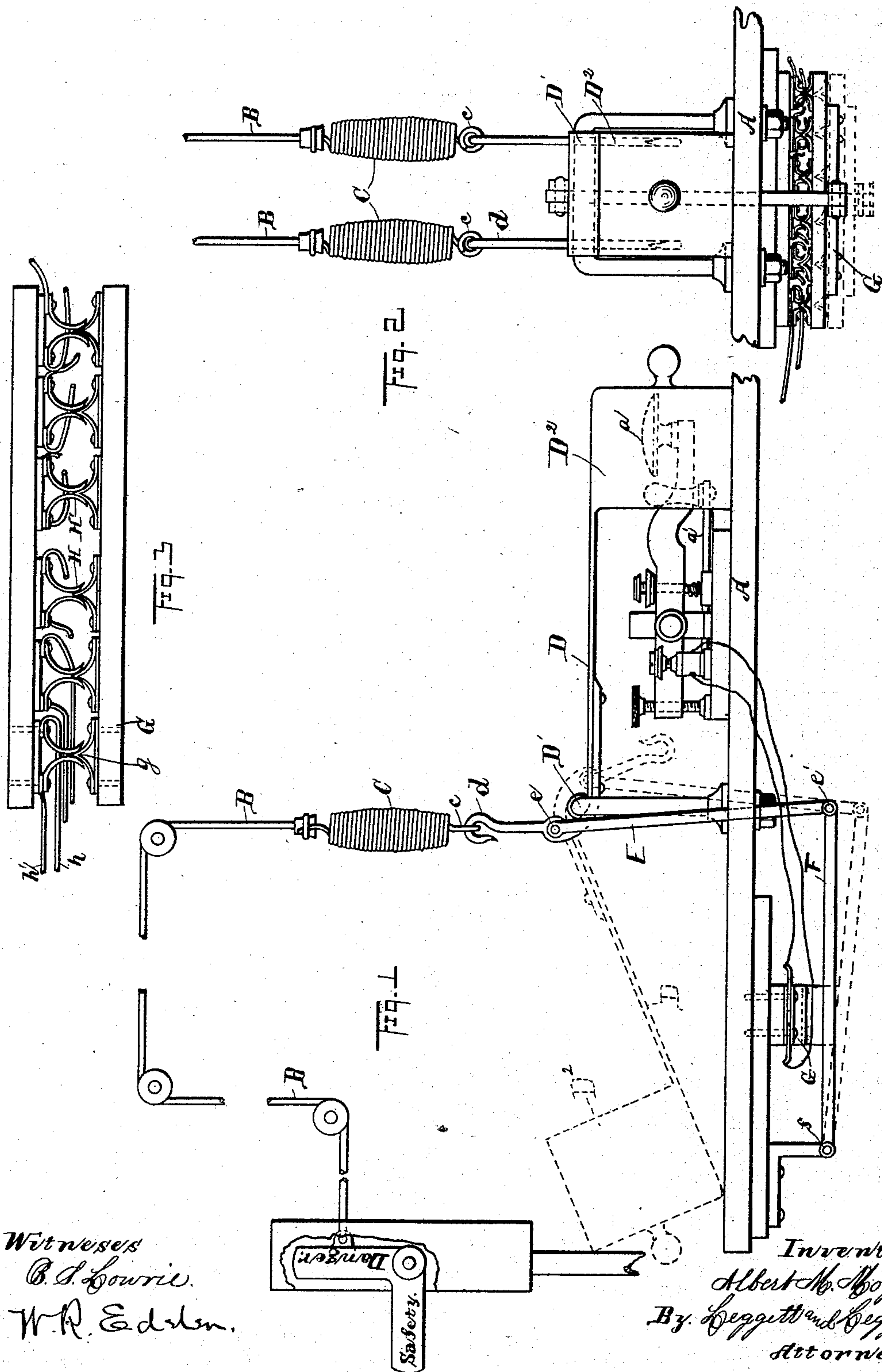
(No Model.)

A. M. MOZIER.

METHOD OF OPERATING RAILROAD TRAIN ORDERS, &c.

No. 413,261.

Patented Oct. 22, 1889.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ALBERT MILLER MOZIER, OF GALION, OHIO.

## METHOD OF OPERATING RAILROAD-TRAIN ORDERS, &c.

SPECIFICATION forming part of Letters Patent No. 413,261, dated October 22, 1889.

Application filed July 3, 1889. Serial No. 316,475. (No model.)

*To all whom it may concern:*

Be it known that I, ALBERT MILLER MOZIER, of Galion, in the county of Crawford and State of Ohio, have invented certain new and useful Improvements in the Method of Operating Railway-Train Order and other Signals by Operators at Railway-Telegraph Stations; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to a method or system of operating signals and telegraph-instruments for railway service, in which by means of suitable connecting mechanism the key of the transmitter is rendered inoperative during the time that the safety-signal is fastened in position. With various systems of semaphores and other signaling devices for railroad service the normal position of the parts is with the danger-signal displayed, whereby the trains are brought to a full stop at the station. If the train is to pass the station without stopping, the safety-signal is displayed and held in its exposed position while the train is passing, after which the safety-signal is released and the parts automatically return to their normal position, again displaying the danger-signal. At many small stations but one man is employed, whose duties embrace attending to the signals, telegraph-operator, and the work generally of the station. It is often necessary for an operator to fasten the signal so that the safety-signal is displayed for a considerable length of time in order to prevent the blocking of trains—as, for instance, when the operator is absent at meals or overnight, or at other times—and it frequently happens that upon returning to the office a train is approaching which should be held at the station, and the operator, hearing his call, perhaps, from the train-dispatcher, or having some other pressing duty, in his haste to answer such call or attend to such duty neglects at the time and afterward forgets to unfasten the safety-signal, which latter consequently remains displayed and the train passes the station without stopping, and perhaps meets with accident. To avoid such disasters, which in the past have been too frequent from such cause, I

provide connecting mechanism whereby the transmitter is rendered inoperative during the time that the safety-signal is displayed by being fastened, and consequently the operator must first change the signal from “safety” to “danger” before he can operate the key of the transmitter.

In the accompanying drawings is shown suitable means for carrying out my invention, although such mechanism may be varied indefinitely, according to circumstances.

Figure 1 is a side elevation. Fig. 2 is an end elevation. Fig. 3 is an enlarged elevation in detail of switch for the shunt-circuits.

A represents an ordinary transmitter having key *a* and circuit-breaker *a'*.

B is a cord or other device by means of which the signals are operated, the safety-signal being “turned on” or displayed by drawing on the cord, and the safety-signal is retired and the danger-signal is turned on by releasing the cord, and consequently, the safety-signal having been displayed, the cord is fastened to retain the safety-signal in such position. When there are two or more signaling apparatus—for instance, on different tracks or for different directions—a cord B leads to each, two such cords being shown in Fig. 2. To each cord is preferably attached a coil-spring C, the latter having a loop *c*, for fastening upon hook or hooks *d*, by which fastening the safety-signal is held in position displayed. The cord is liable to expand and contract under conditions wet and dry; hence spring C to compensate for any change in the length of the cord. A lever D, of the bell-crank variety, is pivoted at D' at the elbow thereof. The short arm of the lever terminates in hook or hooks *d* aforesaid, and the long arm of the lever is provided with hood D<sup>2</sup> for inclosing the operative ends of key *a* and circuit-breaker *a'*. In the position shown in solid lines in Fig. 1 the safety-signal is displayed and the transmitter is of course inoperative. By disengaging loop *c* from hook *d* and releasing the cord the signal mechanism will return by gravity to its normal position, displaying the danger-signal. The bell-crank lever bearing the hood is then reversed to the position shown in dotted lines, thus leaving the transmitter unobstructed.

When there is more than one transmitter



at the station, my invention renders the different transmitters inoperative by means of shunt-circuits closed by a multiple circuit-closer, as shown in the drawings, to wit:

5 E is a link pivoted at *e* to the short arm of the bell-crank lever and pivoted below at *e'* to lever F, the latter being fulcrumed at *f*. To lever F is attached a cross-bar G, the latter having the necessary contact-points *g*.

10 H H' are springs or other apparatus arranged in pairs and connected, respectively, with wires *h h'* of a shunt-circuit for cutting out the respective transmitters.

When the bell-crank lever is in the position 15 shown in dotted lines, Fig. 1, lever F and bar G are depressed, so that points *g* are disengaged from their opposing springs or apparatus H H', and hence the different shunt-circuits are opened, and consequently do not 20 interfere with the working of the different transmitters. When lever D is turned to the position shown in solid lines, bar G is elevated, so that the different points *g* engage their opposing springs or apparatus H H' and 25 close the different shunt-circuits, whereby the different transmitters are rendered inoperative. Of course there are a great variety of circuit-closers, any one of which would answer the purpose.

30 It is evident that the devices may be varied indefinitely without departing from the spirit and purpose of my invention. For instance, a pin or stop of any kind thrust up from be-

low or thrust down from above, or turned laterally so as to lock the circuit-breaker, will 35 render the transmitter inoperative, and if such pin or stop were connected with cord B, so as to render the transmitter inoperative while the safety-signal was being displayed, 40 such mechanism would answer the purpose. The same results may be attained by any mechanism for establishing a shunt-circuit, whereby when such circuit is closed the transmitter is cut out or rendered inopera- 45 tive, the mechanism for closing such shunt-circuit of course being detachably connected with cord B, by means of which the shunt-circuit is closed when and during the time such safety-signal is displayed by being fast- 50 ened down.

What I claim is—

The method or system herein described of operating signals and transmitters for railway service, and consisting, essentially, in 55 holding the safety-signal in position displayed by means of a suitable device that will simultaneously render the transmitter inoperative, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 18th 60 day of April, 1889.

ALBERT MILLER MOZIER.

Witnesses:

CHAS. H. DORER,  
S. G. NOTTINGHAM.