No. 892,811. PATENTED JULY 7, 1908.

J. P. COLEMAN.

SAFETY APPARATUS FOR CARS OR TRAINS.

APPLICATION FILED MAR. 14, 1905.

Fig: 1.

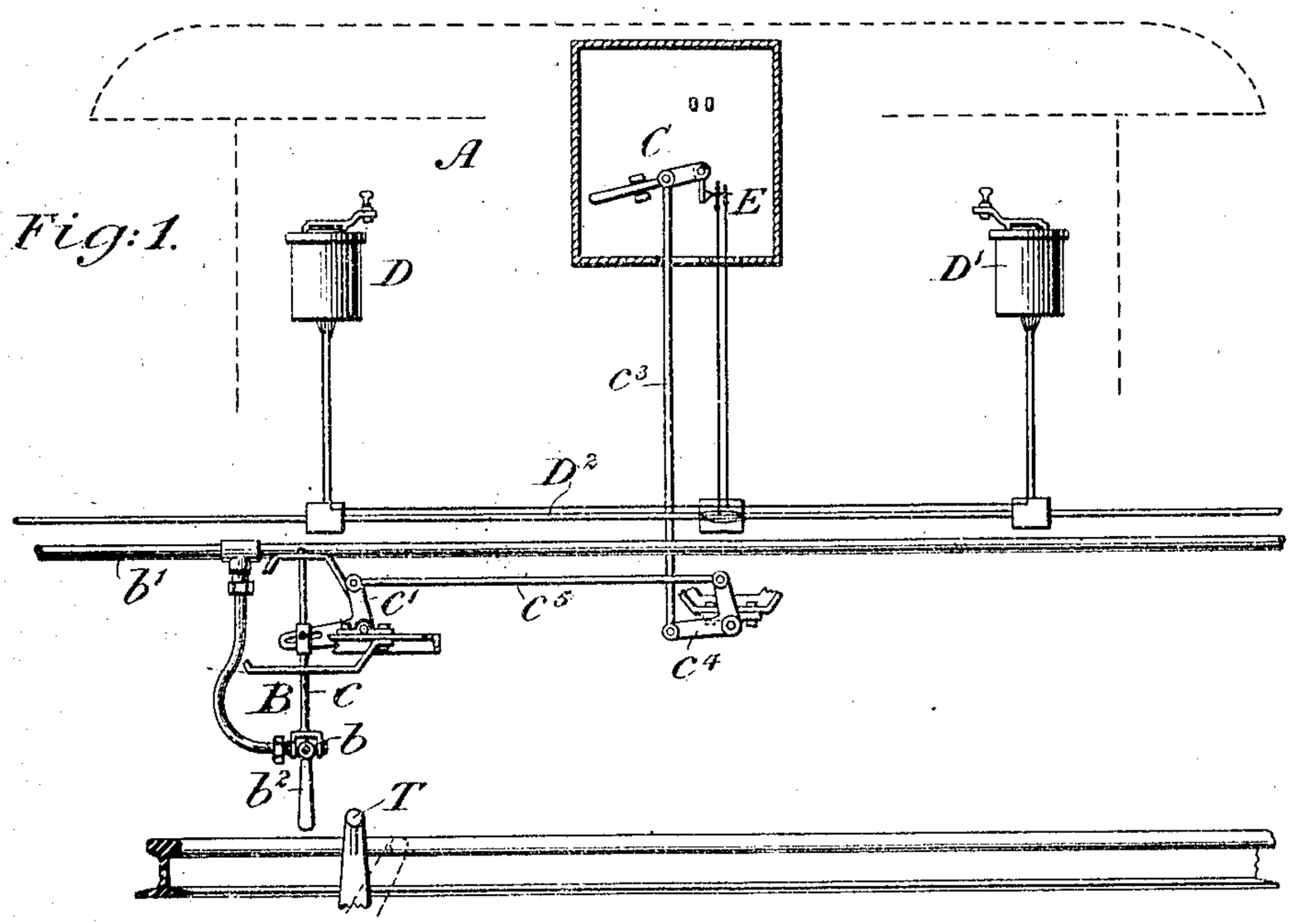

Fig: 2.

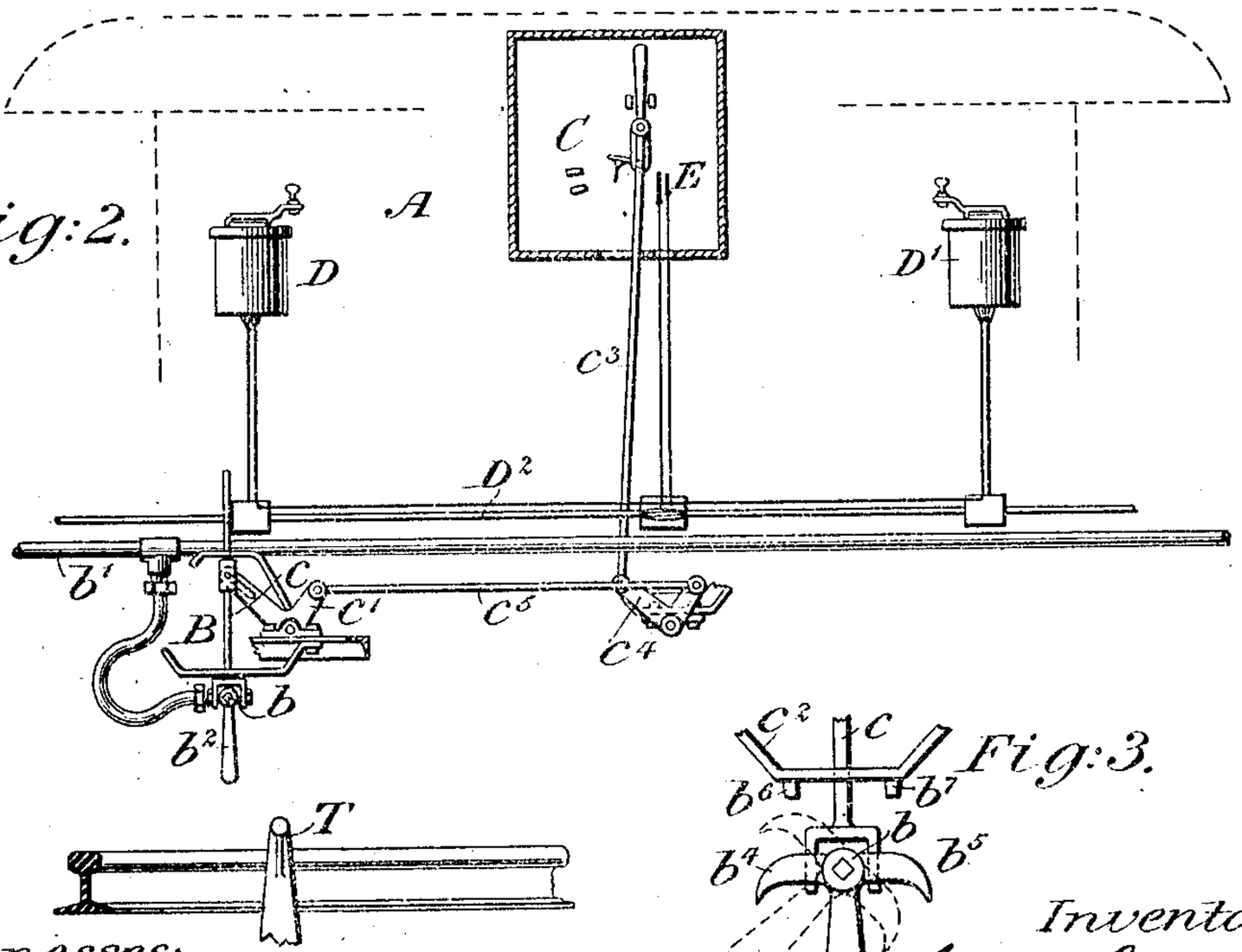

Fig: 3.

Witnesses:
John A. Rennie
P. Herman Wegner.

Inventor:
John P. Coleman
By Geo. E. Greene
his Attorney.

UNITED STATES PATENT OFFICE.

JOHN PRESSLEY COLEMAN, OF EDGEWOOD, PENNSYLVANIA, ASSIGNOR TO THE UNION SWITCH AND SIGNAL COMPANY, OF SWISSVALE, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

SAFETY APPARATUS FOR CARS OR TRAINS.

No. 892,811. Specification of Letters Patent. Patented July 7, 1908.

Application filed March 14, 1905. Serial No. 250,017.

To all whom it may concern:

Be it known that I, JOHN PRESSLEY COLEMAN, a citizen of the United States, residing at Edgewood, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Safety Apparatus for Cars or Trains, of which the following is a specification.

My invention relates to safety apparatus carried by cars or trains which is designed, when operated, to affect the motion of the car or train, for example, to apply the brakes on the car or train or to shut off the supply of motive power to the motor or motors of the train. Such apparatus is generally operated by a trip or arm located adjacent the railway, and the trip is generally used in connection with railway signals. An example of this use is illustrated in U. S. Patent No. 769058, granted to me on August 30th, 1904.

My present invention relates to the movement of the safety apparatus into and out of what may be termed its operative position, so that it may or may not, as desired, be engaged by the trip, and the interrupting of the supply of motive power to the motor or motors of the train or the control of the motive power supply when the apparatus is moved out of its operative position. When the motive power supply or the control of the motive power supply is interrupted, it can only be established through the movement of the safety apparatus to its operative position.

My present invention also relates to the resetting of the safety apparatus from the car after an operation of it due to its engagement with a trip.

I will describe a safety apparatus having applied to it one form which my invention may assume, and then point out my invention in claims.

In the accompanying drawings, Figure 1 is a diagrammatical view in side elevation of a car provided with a safety apparatus, a trip with which the safety apparatus co-acts and a means embodying my invention for moving the safety apparatus into and out of its operative position and for interrupting the control of the motive power for propelling the cars. In this figure the apparatus is in its operative position. Fig. 2 is a view similar to Fig. 1 but showing the apparatus in its inoperative position. Fig. 3 is a detail view.

Similar letters of reference designate corresponding parts in all of the figures.

Referring now to the drawings, A designates a car which is provided with air (brakes not shown), and B a safety apparatus through the operation of which the brakes on the car may be set. Usually this apparatus, and as shown in the drawings, comprises a valve b provided in what is termed a "train pipe" b^1 or in a branch of said pipe and an arm b^2 by which the valve is operated. Usually the arm is in a vertical position (its set position) and when in this position the valve b is closed. When, however, the arm is moved to an inclined position (see Fig. 3) the valve is opened to exhaust air from the train pipe and thus apply the brakes. This is so well known that I have not deemed it necessary to illustrate or describe.

T designates a trip which is located adjacent the railroad and with which the arm b^2 of the apparatus co-acts. The trip may be moved from its inoperative position (see dotted lines in Fig. 1) to its operative position (see full lines in Fig. 1) by any desired apparatus which may operate automatically or be manually operated. Such trips are generally used in connection with block signaling systems on both steam and electric railroads and one such trip with its automatically operating mechanism is located near a railway signal at the entrance of each block section, and the control of the mechanism for such trip may be obtained by the train in a manner similar to the railway signals. Usually the arrangement is such that when a signal is set to "danger" the trip adjacent the signal is also set to its operative position so that a succeeding train, should it run past the danger signal will be automatically stopped by the trip engaging an arm b^2 carried by the train. The manner of moving the trip to its operative or inoperative position is immaterial, but it should only be moved to its operative position when it is desired to stop a train at any desired point to prevent collisions or other accidents. In the case of the trip being moved to its operative position when an adjacent signal is in its

"danger" position, and the driver of the train bringing his train to a stop on account of the "danger" signal (which is what is desired) he may proceed past the "danger" signal with his train under control, this being prescribed in the operating rules for the railroad. To do this it is nesessary, so long as the trip is in its operative position, to move the safety apparatus B out of its operative position (see Fig. 2) so that it will not be operated by the trip. This may be accomplished in a variety of ways, either manually or automatically. In the drawings I have shown the apparatus B as being supported from a rod c connected with one arm of a bell crank lever c^1 suitably fulcrumed on a support c^2 carried by the car so that upon movement of the lever c^1 on its fulcrum the apparatus may be raised from or lowered into its operative position. Movement of the bell crank lever c^1 is obtained from a lever C within the car and preferably within convenient reach of the driver through a rod c^3, bell crank lever c^4 and rod c^5 connecting the levers c^4 and c^1.

In moving the safety apparatus out of its operative position so that a train may proceed past a "danger" signal, it is desirable that the motive power supply or the control thereof be interfered with or interrupted so that the train cannot be moved until all safety apparatus has been again moved to its operative position. This interruption of the motive power supply or the control thereof may be accomplished in a variety of ways, and I do not, therefore, wish to be understood as being limited to any particular way. In the drawings I have illustrated an electrical control for the motive power supply and as embodied in what is known as the "unit multiple system" of control, which as is well known, means the control of a number of motors located on different cars, comprised in the train from a single controller at any point in the train. As this is well known in the art I will not describe it in detail.

D, D^1 designate two controllers and D^2 a cable containing a plurality of conductors, one of which is a battery wire and the others of which extend to different controllers on the train and include electrical devices for operating switches for controlling the motive power to the motors.

E designates a circuit maker and breaker which may be of any desired construction. The function of this circuit maker and breaker is when open to prevent a controller D or D^1 etc. being operated to supply motive power to the motors of the train. The circuit maker and breaker E is, therefore, operated to open the circuit when the safety apparatus is moved out of its operative position. As shown in the drawings (Fig. 2) it is operated to open the circuit when the lever C is lifted. It will be understood, of course, that if the driver of a train should stop before a "danger" signal he will put his train in motion before raising the safety apparatus so as to only proceed past the stop.

In Fig. 3 in addition to raising the safety apparatus out of its operative position, I have shown means which serve to reset the safety apparatus should it be engaged by a trip. These means as shown, comprise laterally extending arms b^4, b^5, carried by the arm b^2 and projections b^6, b^7, carried by the support c^2, together with means for raising and lowering the safety apparatus, which means as here shown consists of the means for moving the safety apparatus into and out of its operative position. The dotted lines Fig. 3 indicate the position of the arm b^2 after engagement by a trip, and when in this position it will be seen that an upward movement of the rod c^3 will cause an arm b^4 or b^5 to engage a projection b^6 or b^7 to again move the arm to its vertical position. In other words, the valve will be reset so that the brakes may be released.

My invention, therefore, may be said to comprise in connection with safety apparatus (the valve b or its equivalent) a means for moving it into and out of its operative position, which means act also to interrupt or otherwise control the supply of motive power when the safety apparatus has been moved out of its operative position and to establish the control or supply of motive power when the apparatus is reset.

My invention may also be said to comprise means for resetting the safety apparatus from the car after its engagement by a trip, and preferably in conjunction with the means for moving it into and out of its operative position.

As hereinbefore stated, the means for moving the safety apparatus into and out of its operative position may be manually operated or they may be automatically operated and controlled in its automatic operation in any desired manner. Also the means for resetting the safety apparatus from the car may be any desired, and may be independent of the means for moving the safety apparatus into and out of its operative position.

By "safety apparatus" as herein used, I mean any apparatus which is carried by a car or train and acts to apply the brakes of the car or train, or to affect the supply of motive power, or to apply the brakes and affect the supply of motive power.

What I claim as my invention is:

The combination with a car provided with a motor for propelling it, an electrical control for the supply of motive power to the motor, a safety apparatus carried by the car and

adapted to occupy two different positions, one of which is its operative position and the other of which is its inoperative position, a trip located adjacent the line of way adapted to position and to engage with the safety apparatus when the safety apparatus and the trip are in their operative positions, and means for moving the safety apparatus from one of its positions to the other and for interrupting and establishing the electrical control of the motive power during such movements of the safety apparatus.

In testimony whereof I have signed my name to this specification in the presence of two subscribed witnesses.

JOHN PRESSLEY COLEMAN.

Witnesses:
W. L. McDANIEL,
JAMES CHALMERS, Jr.