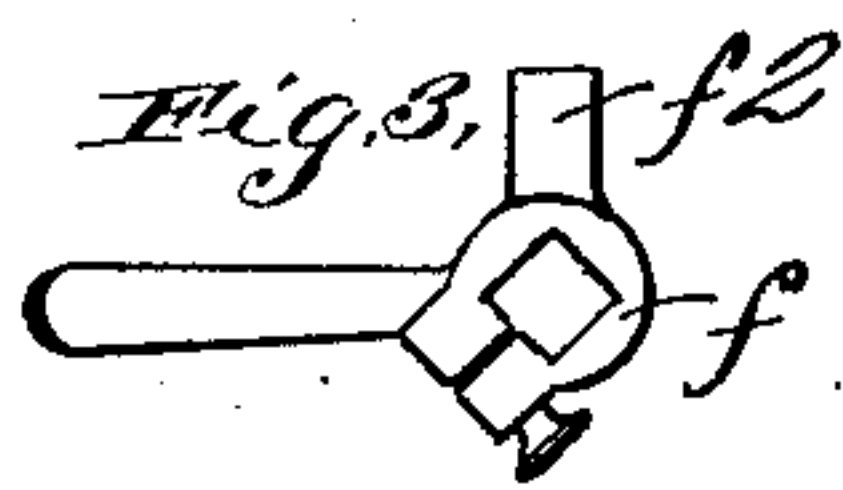
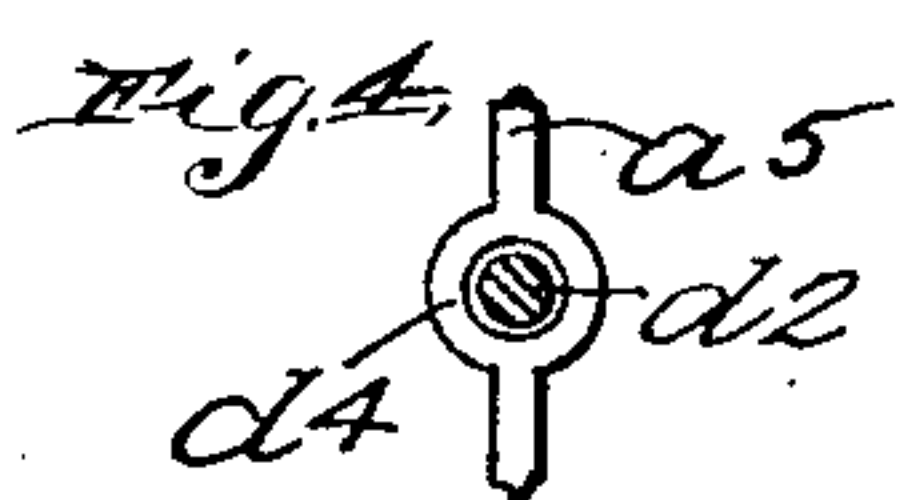
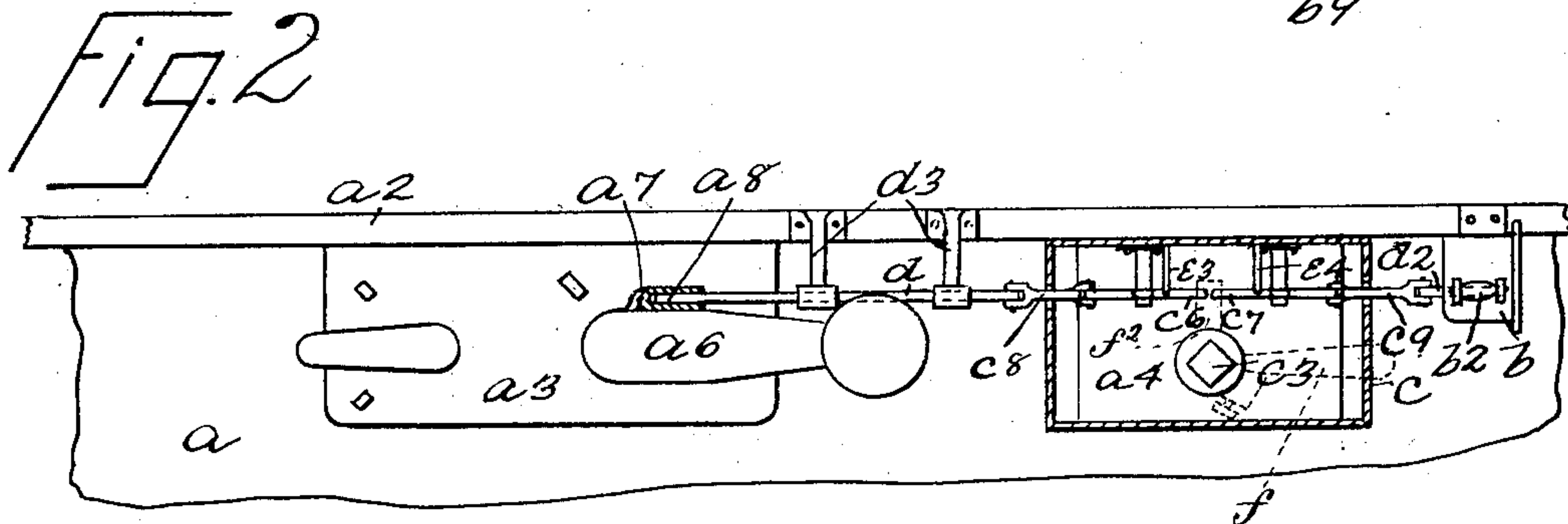
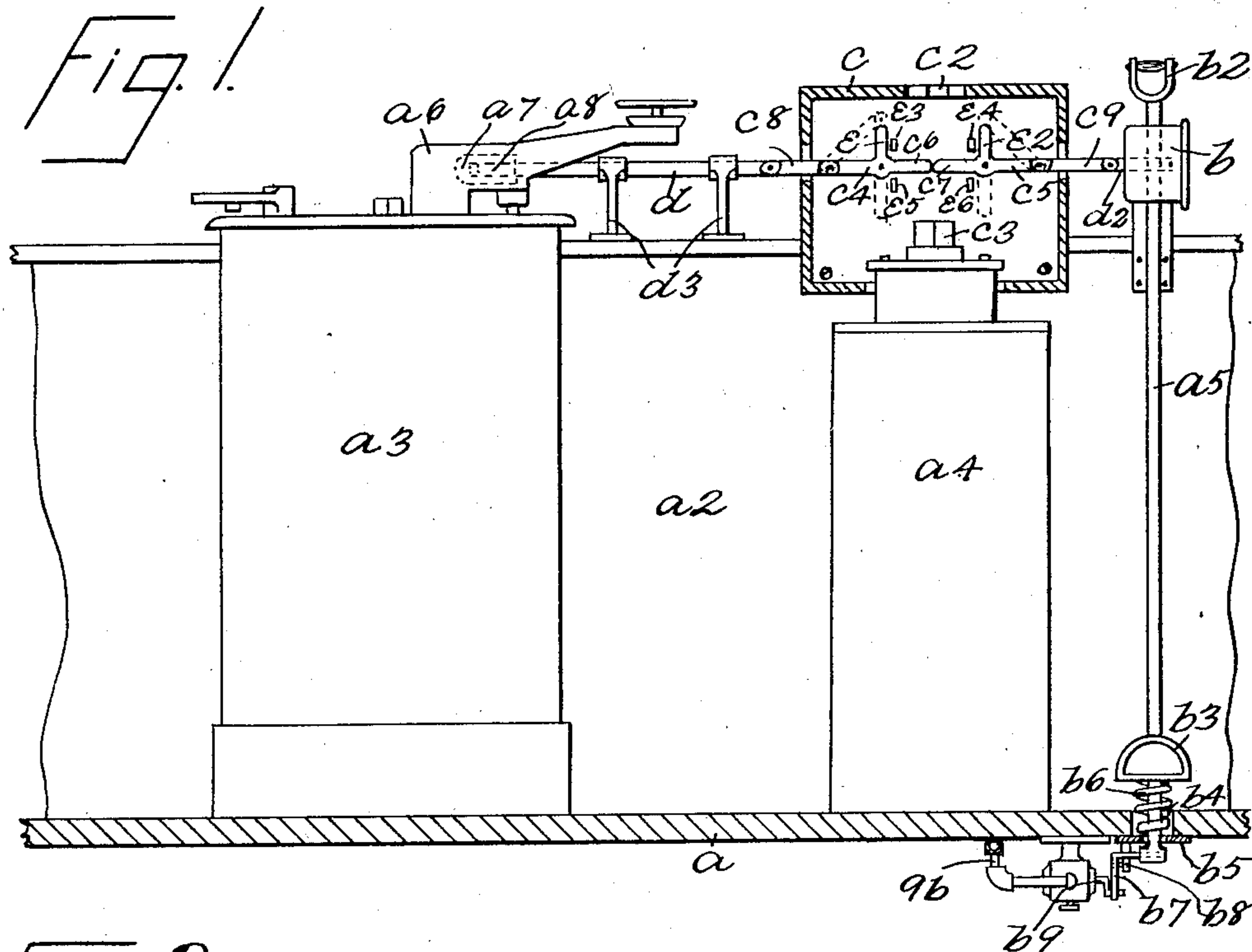


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SAFETY BRAKE APPARATUS FOR MOTOR CARS.

APPLICATION FILED SEPT. 11, 1902.

NO MODEL.



WITNESSES

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CHARLES F. PEEL, JR., OF NEW YORK, N. Y.

SAFETY BRAKE APPARATUS FOR MOTOR-CARS.

SPECIFICATION forming part of Letters Patent No. 720,376, dated February 10, 1903.

Application filed September 11, 1902. Serial No. 122,912. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. PEEL, Jr., a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Safety Brake Apparatus for Motor-Cars, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

The object of this invention is to provide a safety device for electric motor-cars whereby the train-line air-brakes may be automatically operated in the event of the motorman being overcome through any cause, a further object being to provide an apparatus of the class hereinafter described and claimed which will lock said air-brake and current-controller automatically, rendering the same safe from molestation by any person when the motorman leaves the motor-car, taking his brake-handle with him.

As arranged in motor-cars at present, the controller-handle is always removed by the motorman when he leaves his post, if only for a moment, and the brake apparatus may be tampered with in his absence, and as at present arranged should the motorman be overcome while at his post the current is automatically shut off, but the brakes are not applied, and should this occur on a downgrade the results may be serious. By means of my apparatus the current may still be on in such an emergency; but the brakes will be automatically set and bring the car to a standstill, and when the motorman leaves his post for any length of time he removes the brake-handle, and the controller and brake apparatus will be automatically locked and cannot be operated by any person not provided with a similar brake-handle.

My invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by suitable reference characters in each of the views, and in which—

Figure 1 is a rear view of a part of a car-platform and dashboard provided with my apparatus partly incased, said casing being shown in vertical section thereof; Fig. 2, a similar plan view thereof, the casing being

shown in horizontal section; Fig. 3, a bottom plan view of a brake-handle which I employ, and Fig. 4 a part of a brake-rod forming part of my invention.

In the drawings forming part of this specification I have shown at *a* an ordinary car-platform in section provided with a dashboard *a*², upon which are mounted an electric-current controller *a*³, an air-brake controller *a*⁴, both as usually employed, and a spring-operated rod *a*⁵, connected with the train-line air-brakes; but these parts may be mounted upon any suitable part of the body of a car, as will be apparent.

The current-controller *a*³ is provided with a crank-handle *a*⁶, which differs from that at present employed in having a projecting member *a*⁷ on one side thereof, and their member is provided with a longitudinal recess *a*⁸, the object of which will be hereinafter explained.

The air-brake controller *a*⁴ is for the car upon which it is mounted only, while the brake-rod *a*⁵ is for the train-line brakes.

The air-brake rod *a*⁵ is slidably mounted in a casing *b* and is provided at its top with a handle *b*², and near the bottom of the rod *a*⁵ is a foot-bracket *b*³, and beneath the foot-bracket *b*³ is a continuation of the rod *a*⁵, which passes through an opening *b*⁴ in the platform *a* and through a plate *b*⁵, secured beneath the opening *b*⁴, and resting upon the plate *b*⁵ and bearing against the bottom of the foot-bracket *b*³ is a coil-spring *b*⁶, which operates to force the brake-rod *a*⁵ upwardly. At the bottom of the brake-rod *a*⁵ is connected one end of a crank-lever *b*⁷, which is pivoted to a support *b*⁸, secured to the bottom of the platform *a*, and the other end of the crank-lever *b*⁷ is connected with an air-brake valve *b*⁹, which is connected with the usual high-pressure air-pipe, all of which is shown in Fig. 1.

Secured above the brake-controller *a*⁴ is a casing *c*, which is provided with an opening *c*² in the top thereof, and pivoted within the casing *c* and above and in front of the square end of the crank-shaft *c*³ are two toggle-levers *c*⁴ and *c*⁵, the inner ends *c*⁶ and *c*⁷ of which are close together, and the outer ends of which are connected with links *c*⁸ and *c*⁹, and these links are also connected with bolts *d* and *d*²,

the operation of which will be hereinafter explained. The toggle-levers c^4 and c^5 are provided with upwardly-directed arms e and e^2 , adjacent to each of which is one end of a spring e^3 and e^4 , the other ends of which are secured to the casing c , and the outer ends of the springs e^3 and e^4 do not project beyond the farther edges of the arms e and e^2 , so that when these arms are forced against the springs and the pressure being continued the arms e and e^2 will pass the ends of the springs and will not resume their normal position until power is applied to again force them past the springs e^3 and e^4 , and beneath the inner ends of the toggle-levers c^4 and c^5 are similar springs e^5 and e^6 , the action of which on the inner ends of the toggle-levers is similar to the action of the springs e^3 and e^4 on the arms e and e^2 . The bolt d passes through supports d^3 , secured to the car, and the outer end of the bolt d is adapted to enter the recess a^8 in the projection a^7 of the current-controller handle a^6 , which will be locked thereby. The bolt d^2 normally passes through an opening d^4 in the brake-rod a^5 , as shown in detail in Fig. 4, and the brake-rod is thereby prevented from being depressed, as will be readily seen.

Connected with one side of the brake-controller handle f , as shown in Fig. 3, is a lug f^2 , which when the handle f is placed in position on the end c^3 of the shaft of the brake-controller a^4 extends over the inner ends c^6 and c^7 of the toggle-levers c^4 and c^5 , as indicated in dotted lines in Fig. 2, and comes in contact with and depresses said ends, when the handle f is forced down into position, and the ends c^6 and c^7 are forced past the springs e^3 , e^4 , e^5 , and e^6 and into the position shown in dotted lines in Fig. 1, at which time the lug f^2 of the brake-handle f is free to pass beneath the ends of the toggle-levers c^4 and c^5 , and said handle may be readily rotated, and in this position of the toggle-levers the bolts d and d^2 are withdrawn from the current-controller handle a^6 and the opening d^4 of the brake-rod a^5 , respectively, and the current-controller a^3 and air-brake rod a^5 are then in operative position.

It will be understood that in the position of the air-brake rod a^5 shown in Fig. 1 the train-line air-brakes are set, and in order to release said brakes it is necessary to depress the said rod either by hand or foot, thereby closing the valve b^9 and releasing the brakes, and constant downward pressure must be kept on the brake-rod a^5 to keep said valve closed, so that if anything occurs to prevent the motorman from exerting this pressure the rod a^5 will be forced upward by the spring b^6 , and the air-brakes of the train-line are automatically set and the train brought to a standstill. In this position of the parts of my apparatus the current-controller may be manipulated at will with one hand, and the air-brake controller a^4 , by means of the handle f , with the other hand, the air-brake controller a^4 , as previously stated, being only for the car upon which it

is placed and for ordinary use, whereas the air-brake rod a^5 controls the emergency-brakes.

When the toggle-levers c^4 and c^5 are forced into the position shown in dotted lines in Fig. 1, the arms e and e^2 are then in the position normally occupied by the ends c^6 and c^7 , and when the motorman intends to remove the brake-handle f he shuts off the current-controller a^3 , the handle a^6 then being in the position shown in Fig. 2 and ready to be engaged by the bolt d , and the brake-rod a^5 is allowed to rise until the opening d^4 therein is opposite the bolt d^2 , thereby setting the brakes of the train-line, and upon removing the handle f the lug f^2 thereon strikes the members e and e^2 of the toggle-levers, forcing said levers into their normal position, as shown in full lines in the drawings, and the bolts d and d^2 enter the recess a^8 and opening d^4 , respectively, and the current-controller and air-brake controller are locked thereby, and the springs e^3 , e^4 , e^5 , and e^6 operate to prevent the toggle-levers from moving from one position to the other.

It will be apparent that my invention may be applied to cars of different construction and of different motive power, and I reserve the right to make any such changes in and modifications of the construction herein shown and described as will properly come within the scope of the same.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In an air-brake-operating apparatus, a vertically-movable spring-operated rod, and air-valve connected with the lower end of said rod, said air-valve being in operative connection with the brakes, said rod being provided with a handle and foot-bracket and said spring-operated rod operating to open said air-valve and set the brakes, substantially as shown and described.

2. In combination with a motor-car provided with a motor-controller and an air-brake controller, an emergency-air-brake-operating device comprising a vertically-movable spring-operated rod, having an opening therein and connected at the bottom thereof with an air-valve in operative connection with the brakes, said spring-operated rod operating to open said air-valve and set said brakes, a locking-bolt passing through said opening, a toggle-lever connected with said locking-bolt and means for operating said toggle-lever, substantially as shown and described.

3. In combination with a motor-car provided with a motor-controller, air-brakes and an air-brake controller; an operating-handle for said motor-controller provided with a projection on one side thereof and a longitudinal recess in said projection, a locking-bolt passing into said recess, a toggle-lever connected with said locking-bolt, a vertically-movable spring-operated rod having an opening therein and connected at the bottom

thereof with an air-valve in operative connection with said air-brakes, a locking-bolt passing through said opening, a toggle-lever connected with said last-named locking-bolt
5 and means for operating said toggle-levers, substantially as shown and described.

4. The combination with a motor-car of a motor-controller, air-brakes, an air-brake controller, and a brake-operating device comprising a vertically-movable spring-operated
10 rod connected at the bottom thereof with an air-valve in operative connection with the brakes, locking devices for the handle of said motor-controller and said vertically-movable
15 rod, a casing mounted over said brake-controller, and toggle-levers pivoted within said casing and adjacent to said brake-controller,

the outer ends of said toggle-levers being in operative connection with said locking devices, and the handle of said brake-controller
20 being provided with a lug on the side thereof, and adapted to pass through said casing, said lug being adapted to engage the inner ends of said toggle-levers, substantially as shown and described. 25

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 10th day of September, 1902.

CHARLES F. PEEL, JR.

Witnesses:

F. A. STEWART,
C. E. MULREANY.