

No. 724,807.

PATENTED APR. 7, 1903.

T. T. CHALONER.

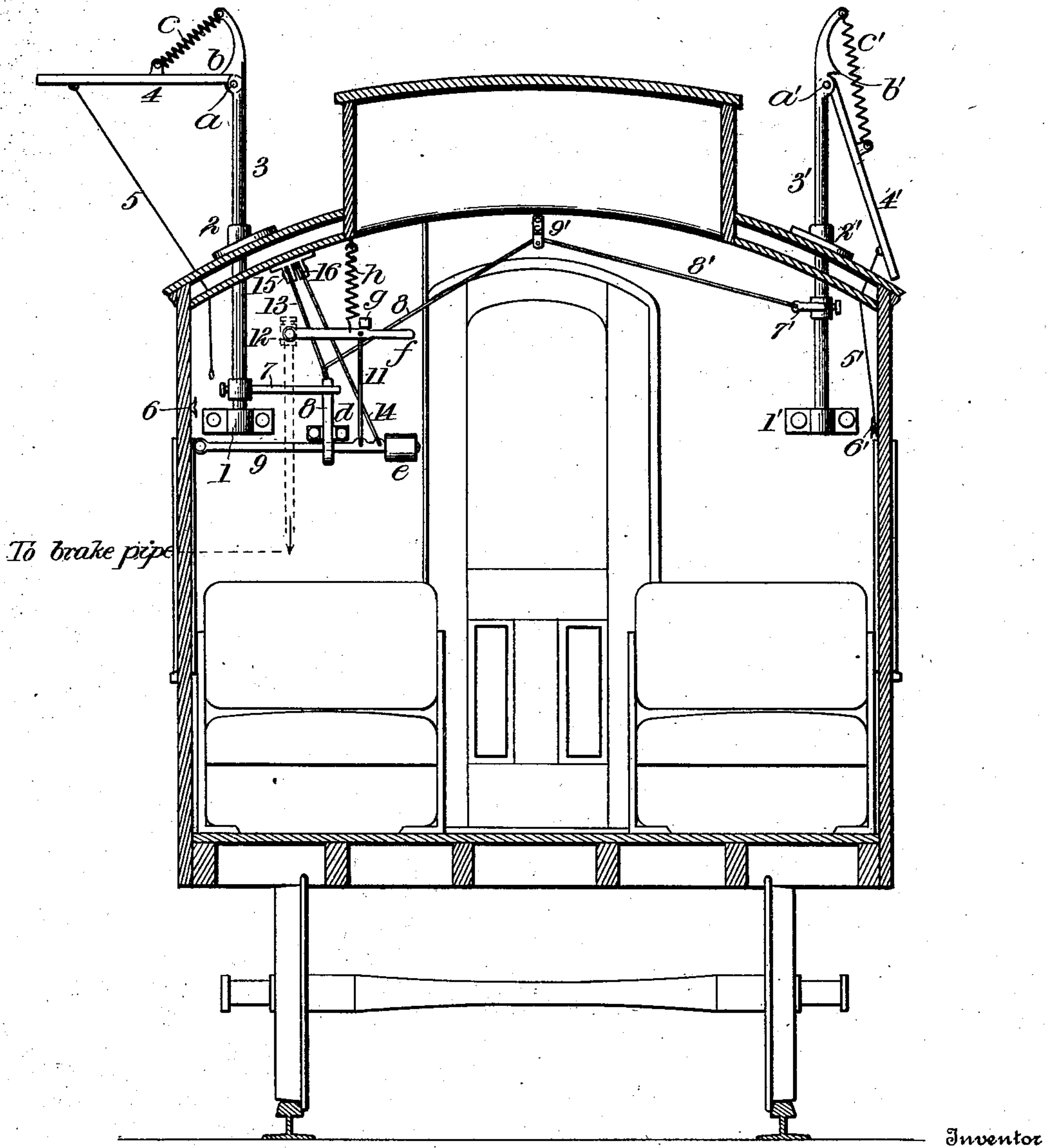
SAFETY DEVICE FOR STOPPING RAILWAY TRAINS.

APPLICATION FILED SEPT. 9, 1902.

NO MODEL.

2 SHEETS—SHEET 1.

*Fig. 1.*



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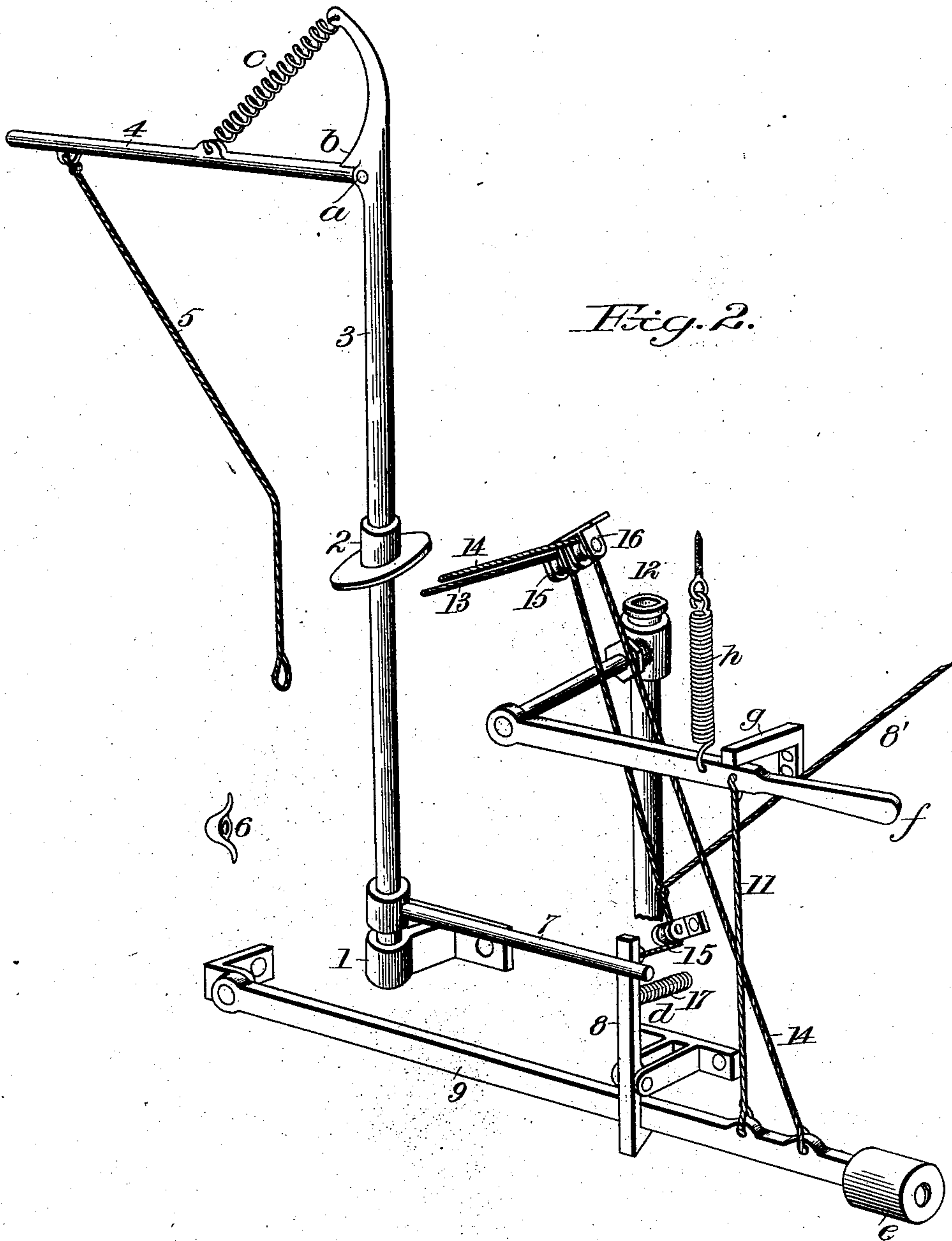
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# UNITED STATES PATENT OFFICE.

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## SAFETY DEVICE FOR STOPPING RAILWAY-TRAINS.

SPECIFICATION forming part of Letters Patent No. 724,807, dated April 7, 1903.

Application filed September 9, 1902. Serial No. 122,710. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS T. CHALONER, a citizen of the United States of America, and a resident of the borough of Manhattan, New York city, in the State of New York, have invented a new and useful Improvement in Safety Devices for Stopping Railway-Trains, of which the following is a specification.

This invention is additional to my "Improvement in automatic stop-signals for railways," patented the 8th of July, 1902, by United States Letters Patent No. 704,174. One function of that device is to automatically liberate a weight in case a danger-signal is overlooked by the engineer and by means of such weight to operate the air-brake valve in the locomotive of a railway-train.

The leading object of the present invention is to thus operate automatically what is known as the "conductor's valve" of the air-brake system situated at one end of each car of a train and adapted to be operated by hand in case of emergency.

Another object of this invention is to so construct the external tappet-arm of the safety device that it may be lowered at will, and thus rendered inoperative when there is no occasion for the automatic operation of the device.

Another object is to simplify the falling weight mechanism and to render the same more compact, so that it can be accommodated as a whole against a small portion of the end of a car or in a like position.

The invention consists in certain novel combinations of parts hereinafter set forth and claimed.

Two sheets of drawings accompany this specification as part thereof.

Figure 1 represents a vertical cross-section through a railway passenger-car provided with the improved safety device. Fig. 2 is a perspective view of the parts of the improved safety device detached.

Like reference letters and numbers indicate corresponding parts in the two figures.

In suitable bearings 1 and 2 a vertical rock-shaft 3 is mounted so as to project above the roof of the car, and is provided at its upper end with a normally horizontal external tappet-arm 4, hinged to the rock-shaft at its inner end by a horizontal pintle *a* and held in normal position against a stop *b* by a spring

*c*. A cord 5, extending from said external tappet-arm 4 to a convenient point within the car, provides for lowering the tappet-arm to render it inoperative, and a suitable detent 6, adapted to hold said cord 5, provides for fastening the arm in lowered position.

A tappet-arm 4', so fastened in lowered position by a retracting-cord 5' and a detent 6', is shown at the right in Fig. 1 as the tappet-arm of an alternative or duplicate attachment for use in case the car is run on a track where this side of the car would be outermost. The remainder of such duplicate attachment comprises a vertical rock-shaft 3', mounted in bearings 2' and 1' and provided within the car with an arm 7', from which a cord 8' extends by way of conveniently-arranged sheaves 9' to the main safety device.

The rock-shaft 3 first referred to carries within the car a tappet-arm 7, arranged to engage the upper end of a detent-lever 8 above its fulcrum *d*, the lower hooked end of such detent-lever engaging a weight-lever 9, which carries a weight *e* permanently or in an equivalent manner and is connected by a rod or cord 11 with the hand-lever *f* of the conductor's valve 12, such hand-lever being constructed and arranged to project normally in a horizontal or substantially horizontal position beneath a stop *g*, against which it is held by a retracting-spring *h*. The parts of the safety device being thus constructed and arranged, when the external tappet-arm 4 at the left in Fig. 1 strikes an overlooked signal or the arm of a corresponding tappet device attached directly or indirectly to the road-bed, as set forth in my specification forming part of said Letters Patent No. 704,174, the corresponding inner tappet-arm 7 disengages the hooked end of the detent-lever 8 from the weight-lever 9 and permits the latter to drop and by its gravity to pull down the hand-lever *f* of the conductor's valve 12, so as to admit air to the brake-pipe, and thus to insure the instantaneous application of the air-brakes throughout the train.

Cords 13 and 14, extending, respectively, from the upper end of the detent-lever 8 and from the weight end of the weight-lever 9 by way of conveniently-arranged sheaves 15 and 16 from end to end of the car, provide, respectively, for operating the safety device by



hand from any part of the car in case of emergency and for restoring the safety device to operative condition, so that the retracting-spring *h* may automatically close the conductor's valve.

The cord 8', extending from the duplicate attachment, may conveniently be attached to the detent-retracting hand-cord 13 at any convenient point, or it may be attached directly to the upper end of the detent-lever 8 in the same manner as said hand-cord 13.

A spring 17, Fig. 2, or its equivalent restores the detent-lever to its effective position after each actuation.

The external tappet-arm 4 or 4' on the outer side of the car is allowed to project in effective position, as at the left in Fig. 1. The other external tappet-arm is fastened down, as at the right in Fig. 1, and the other parts of the safety device are left in working condition in the positions in which they are shown in both figures of the drawings.

Should the effective external tappet-arm strike an overlooked signal or the arm of a corresponding tappet device, the vertical rock-shaft to which the arm is attached is thereby turned, and by its inner tappet-arm 7, if it be the main device, or by means of its arm 7' and connections, if it be the duplicate attachment, it retracts the upper end of the detent-lever 8 and disengages its hooked lower end from the weight-lever 9, permitting the weight to actuate the conductor's valve 12, as above described.

The construction of external tappet-arm above described may be employed in the stop-signal device set forth in my previous specification forming part of said Letters Patent No. 704,174 or in any stop-signal or safety device operating by impact with overlooked signals or with a tappet device attached directly or indirectly to the road-bed. The improved safety device as a whole may be carried by a locomotive-cab adapted to receive the same and provided with an emergency-valve corresponding with the conductor's valve, and other like modifications will suggest themselves to those skilled in the art.

Having thus described said improvement, I claim as my invention and desire to patent under this specification—

1. The combination with the hand-lever of a conductor's valve, in an air-brake system, of a weight-lever connected with said hand-lever, a detent-lever for holding said weight-lever in its elevated position, a vertical rock-shaft provided with an external tappet-arm, and means for transmitting motion from said rock-shaft to said detent-lever for liberating said weight-lever and thereby automatically operating said conductor's valve.

2. The combination with the hand-lever of a conductor's valve, in an air-brake system, of a weight-lever connected with said hand-lever, a detent-lever for holding said weight-lever in its elevated position, a vertical rock-shaft provided with an external tappet-arm hinged to the rock-shaft by a horizontal pintle and normally held against a stop thereon by a retracting-spring, means for lowering said tappet-arm at will, and means for transmitting motion from said rock-shaft to said detent-lever for liberating said weight-lever and thereby automatically operating said conductor's valve.

3. The combination with the hand-lever of a conductor's valve, in an air-brake system, of a weight-lever connected with said hand-lever, a detent-lever for holding said weight-lever in its elevated position, and a vertical rock-shaft provided with an external tappet-arm and provided within the car with a tappet-arm arranged to strike the upper end of said detent-lever to liberate said weight-lever and thereby automatically operate said conductor's valve.

4. The combination, in a safety device for stopping a railway-train, of a tappet device carried by the train comprising a vertical rock-shaft and a normally horizontal external tappet-arm hinged to said rock-shaft by a horizontal pintle and normally held against a stop thereon by a retracting-spring, and means for lowering said tappet-arm at will.

5. The combination, in a safety device for stopping a railway-train, of a tappet device carried by the train comprising a vertical rock-shaft and a normally horizontal external tappet-arm hinged to said rock-shaft by a horizontal pintle and normally held against a stop thereon by a retracting-spring, means for lowering said tappet-arm at will, and a detent for fastening said tappet-arm in its lowered position.

6. The combination, in a safety device for stopping a railway-train by means of its air-brakes, of a conductor's valve provided with a normally horizontal hand-lever, a subjacent weight-lever connected with said hand-lever, a detent-lever normally interlocked with said weight-lever, means for automatically operating said detent-lever to release said weight-lever, a cord for tripping the same by hand from any part of the car, a cord for reëlevating the weight-lever from any part of the car, and springs for restoring said detent-lever and said hand-lever to effective position, substantially as hereinbefore specified.

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