Oct. 18, 1927. 1,646,306

R. L. MILTON

AUTOMATIC BRAKE CONTROL

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Fig. 1.

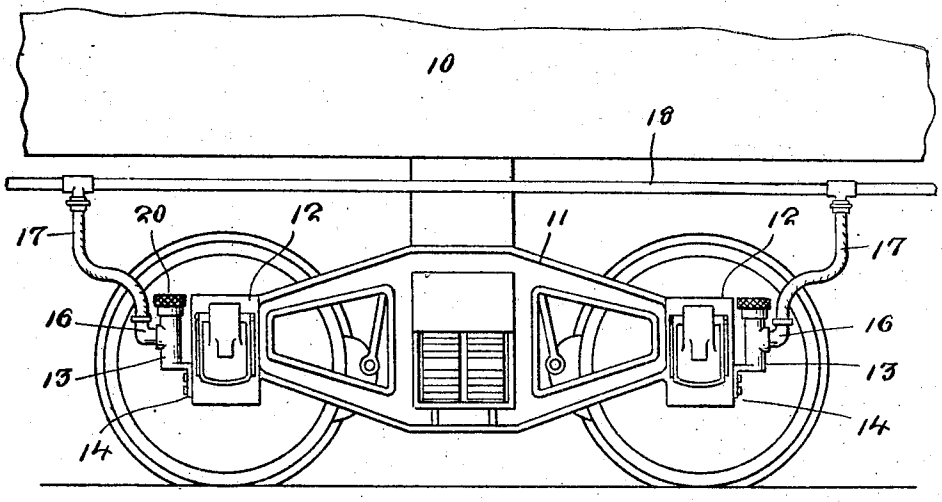
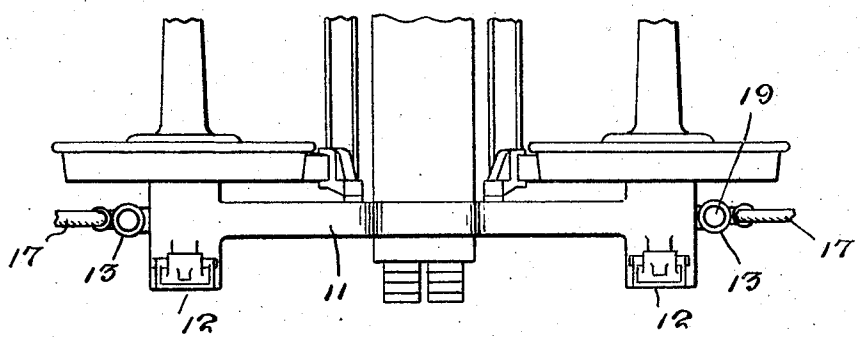


Fig. 2.



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Fig. 3.

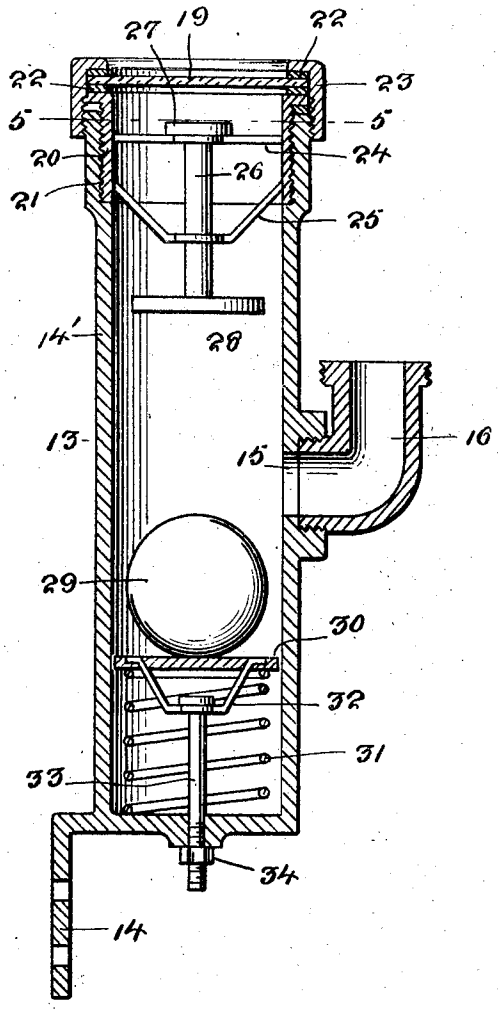


Fig. 4.

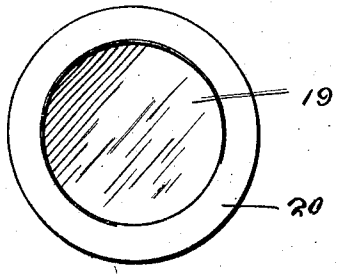
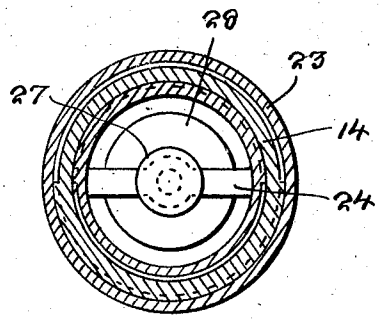


Fig. 5.



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UNITED STATES PATENT OFFICE.

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AUTOMATIC BRAKE CONTROL.

Application filed January 31, 1927. Serial No. 164,921.

This invention relates to improvements in air brake systems for railway cars, an object being to provide means for automatically opening the air line so as to apply the brakes in the event one or more of the car trucks leave the rails.

Another object of the invention is the provision of means of the above character which may be included in the system after the latter has been installed.

Another object of the invention is the provision of an air valve of novel construction, designed to be included in the air line and normally closed, but which will be automatically opened by the jolting of the car should any of the trucks leave the rails.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claims.

In the drawings:

Figure 1 is a side elevation showing a fragmentary portion of a railway car with the invention applied.

Figure 2 is a top plan view of one side of one of the trucks of a car.

Figure 3 is an enlarged longitudinal sectional view through the valve.

Figure 4 is a top plan view.

Figure 5 is a section on the line 5—5 of Figure 3.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the reference character 10 indicates a fragmentary portion of a railway car, 11 one of the trucks and 12 the journal boxes at opposite ends of the trucks.

The valves which constitute part of the present invention are indicated generally at 13 and may be supported upon any suitable part of the car. The valves are preferably supported upon the journal boxes 12 and for this purpose are provided with brackets 14 which are secured to these boxes.

One of these valves is shown in detail in Figure 3 of the drawings and consists of a preferably cylindrical housing 14′ which is provided with an air inlet port 15. A nipple 16 is secured to the casing in communication with the port 15 with its opposite end coupled to a preferably flexible air pipe 17. The pipe 17 is in turn coupled to a pipe 18 which receives air from the main air line. Any number of valves 13 may be provided, but it is preferred to provide one of these valves at each end of the truck and at each side of the latter.

The valves are normally closed by means of a fragile disk 19 which is carried by a cage 20, the latter having a threaded engagement 21 with one end of the casing 14′. The disk 19 is clamped between compressible gaskets 22 by means of a cap 23 which threadedly engages the adjacent end of the casing 14′. Extending diametrically within the cage 20 are guide bars 24 and 25 which are provided with openings for the passage of an impact member which includes a shank 26. A head 27 is carried by one end of the shank and is positioned adjacent the disk 19 so as to strike and break the disk as will be hereinafter apparent. The opposite end of the shank 26 carries a relatively large head 28.

Freely movable within the casing 14 is a preferably spherical member 29 which is adapted to be actuated by the jolting of the wheels of the car in the event the wheels should leave the rails. The ball in its movement will contact with the head 28 of the impact member and cause the head 27 to shatter the disk 19 so as to bleed the air line and apply the brakes.

The member 29 is normally supported upon a disk or platform 30 and located between this disk or platform and the adjacent end of the casing is a spring 31 which acts to force the member 29 in a direction toward the head 28. This spring is held under tension by the disk or platform 30 which has depending therefrom a yoke 32. This yoke is slidable upon a bolt 33 whose threaded end extends through the casing and is provided with an adjusting nut 34. The tension of the spring may thus be regulated.

Should the wheels of any of the trucks of the car leave the rails, the consequent jolting will act to move the member 29 within the casing, which movement will be assisted by the action of the spring 31. The member 29 will thus contact with the head 28 and cause the head 27 to shatter the disk 19 as previously mentioned.

By removing the cap 23, a new disk 19 may be positioned so as to again close the valve. If necessary, the entire cage may be replaced, as well as the disk 19.

The invention is susceptible of various changes in its form, proportions and minor details of construction and the right is herein reserved to make such changes as prop-

erly fall within the scope of the appended claims.

Having described the invention what is claimed is:—

1. In an air brake system for railway cars, a normally closed valve adapted to be connected in the air line, a fragile closure for said valve and means included in the valve and operable by the bumping of the car in the event the wheels of the latter leave the rails to act on said closure and open the valve.

2. In an air brake system for railway cars, a normally closed valve adapted to be connected in the air line, a removable fragile closure for said valve and means included in the valve and operable by the bumping of the car in the event the wheels of the latter leave the rails, to act on said closure and open the valve.

3. In an air brake system for railway cars, a normally closed valve adapted to be connected in the air line, said valve comprising a casing, a fragile closure for one end of the casing, a member mounted for longitudinal movement adjacent to and adapted to act on said closure to open the end of the casing and a member freely movable within the casing and operated by the bumping of the car to act on the longitudinally movable member should the car leave the rails.

4. In an air brake system for railway cars, a normally closed valve adapted to be connected in the air line, said valve comprising a casing, a fragile closure for one end of the casing, a member mounted for longitudinal movement adjacent to and adapted to act on said closure to open the end of the casing and a member freely movable within the casing and operated by the bumping of the car to act on the longitudinally movable member should the car leave the rails and a spring actuated support for the freely movable member to assist in the operation of the latter.

5. In an air brake system for railway cars, a normally closed valve adapted to be connected in the air line, a cage removably positioned at one end of the valve, a fragile disk mounted on the cage to provide a closure for the valve, an impact member slidingly mounted in and carried by the cage to contact with the disk and break the latter to open the valve and means included in the valve and operable by the bumping of the car in the event the wheels of the latter leave the rails, to act on said closure and open the valve.

6. In an air brake system for railway cars, a normally closed valve adapted to be connected in the air line, a cage removably positioned at one end of the valve, a fragile disk mounted on the cage to provide a closure for the valve, an impact member slidingly mounted in and carried by the cage to contact with the disk and break the latter to open the valve, a member freely movable within the valve for contact with the impact member to actuate the latter and spring means operable when the wheels of the car leave the rails to assist in the operation of the freely movable member.

In testimony whereof I affix my signature.

ROBERT L. MILTON.