March 28, 1950 J. F. FERGUSON 2,501,715

SAFETY ATTACHMENT FOR AIR BRAKES

Filed Nov. 19, 1946

Fig. 1.

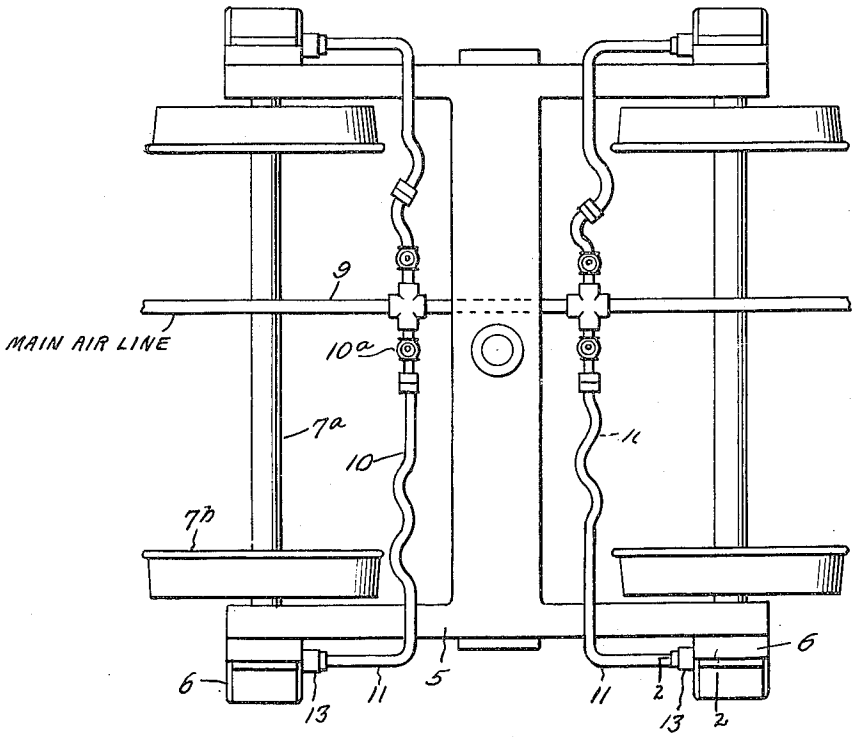


Fig. 2.

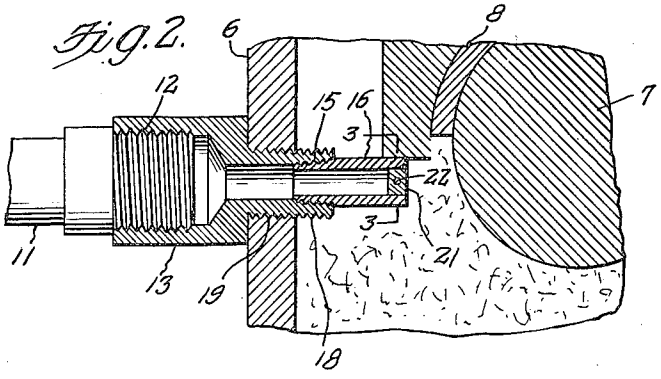


Fig. 3.

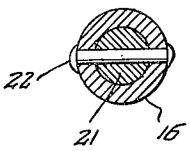
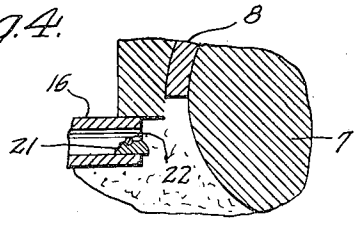


Fig. 4.



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SAFETY ATTACHMENT FOR AIR BRAKES

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2 Claims. (Cl. 246—169)

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This invention relates to new and useful improvements in air-brake attachments and more particularly to a safety attachment for air-brakes of railroad cars.

The primary feature of this invention is to provide a device adapted to be used in connection with the air supply to the brakes, when the axle of the train wheels become overheated said device allows air to escape from the air supply to the brakes thereby reducing the air pressure in the supply line and applying the brakes.

Another feature of this invention is to provide a pipe connection between the air supply line and the brakes of a train, said pipe connection provided with fusible plugs, which will easily melt when the wheel axles become overheated thereby allowing a loss of pressure in the air brake line and consequently setting of the brakes of the train.

A still further feature of this invention is to provide a device of this character that is efficient and reliable in operation, relatively inexpensive to manufacture, and otherwise well adapted for the purposes for which the same is intended.

Other objects and advantages reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a top plan view of one of the trucks of a railroad car showing the invention applied thereto;

Figure 2 is an enlarged sectional view taken on the line 2—2 of Figure 1;

Figure 3 is an enlarged sectional view taken on the line 3—3 of Figure 2; and,

Figure 4 is an enlarged fragmentary sectional view showing the fusible plug melted to open the air line.

Referring now to the drawing in detail, wherein for the purpose of illustration, I have disclosed a preferred embodiment of the invention, the numeral 5 represents a conventional form of railroad truck, which supports a train car (not shown) and disposed at each end of the truck 5 are conventional forms of journal boxings 6, in which the spindles 7 of the axles 7a are rotatably mounted in bearings 8.

The main air line 9 of the air-brake system is provided with a branch pipe 10, the outer ends 11 of said pipe being threaded at 12 into a fitting 13.

The threaded end 15 of a metal tube 16 is threaded into the decreased inner end 18 of the

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fitting 13, said inner end 18 being externally threaded at 19 into the wall of the boxing 6.

The inner end of the tube 16 terminates adjacent the bearing 8 and is closed by a plug 21 of lead or other fusible material held in position by a rivet or pin 22.

As the boxing 6 becomes overheated the lead sealing plug 21 in tube 16 melts thereby causing a loss of pressure in pipe line 10 and setting the brakes of the train as shown in Figure 4.

Standard manually operated cutoff valves 10a are provided in pipe line 10 so that in the event a hot box occurs, air pressure is reduced and the brakes are set, then the air pressure to the particular wheel where the hot box has occurred can be shut off by hand. Thus air pressure can again be built up throughout the entire system.

The rivet or pin 22 cooperates with the plug 21 in a novel manner. From tests that the inventor has made, he has found that the fusible metal will first melt on one side of the rivet, thereby reducing air pressure by an amount in the order of fifteen pounds, which will automatically apply the brakes and slow down the train. Approximately thirty seconds later, the fusible metal plug will be blown out and the air pressure will then be further reduced and the brakes will be fully set automatically. This rivet, therefore, provides that by use of automatic brakes, with which trains are now equipped, the train will not immediately go into full emergency stop, causing breakage of equipment and discomfort to passengers, but the rivet and fuse plug construction provides for a stop in two stages. This operation is illustrated in Figure 4 in the drawing, the plug 21 being illustrated as partially melted away on one side of the rivet 22, allowing a limited reduction of pressure in the air line. The figure also indicates one possible arrangement of the elements of this invention in relation to cooperating elements in a standard journal box, whereby unequal heating of the fuse plug by reason of contact of the tube 16 and a portion of the journal box bearing 8 will assure that one portion of the fuse plug will reach a melting temperature before another portion thereof. The rivet or pin 22 will, of course, serve to retain the remaining portion of the plug for a very short period of time after a first portion of the plug has melted. It is believed that the cooling effect of the air rushing from the tube while a portion of the plug still remains will tend to delay the melting of the remaining portion of the plug, so that a lapse of time in the order of about thirty seconds between the initial partial melting of the

plug and the complete removal thereof from the tube 16 is easily understood.

In view of the foregoing description taken in conjunction with the accompanying drawings it is believed that a clear understanding of the device will be quite apparent to those skilled in this art. A more detailed description is accordingly deemed unnecessary.

It is to be understood, however, that even though there is herein shown and described a preferred embodiment of the invention the same is susceptible to certain changes fully comprehended by the spirit of the invention as herein described and the scope of the appended claims.

What is claimed as new is:

1. A fuse plug and air hose fitting for use with an air brake hose system and a journal box in a railway car truck, comprising a fitting internally threaded at one end to receive an end of an air hose and having a neck externally threaded for insertion through a wall of said journal box, a tube externally threaded at one end for connection in the inner end of said neck, a pin extending diametrically through the other end of said tube, and a mass of material normally closing said other end and fusible at a predetermined temperature, said pin extending through said mass, said other end being in contact with a portion of the journal box bearing on one side of the tube only, thereby causing that portion of the fusible mass adjacent said portion of the bearing to fuse prior to the remaining portion of the fusible mass.

2. A fuse plug and air hose fitting for use with an air brake hose system and a journal box in a railway car truck, comprising a fitting internally threaded at one end to receive an end of an air hose and having a neck externally threaded for insertion through a wall of said journal box, a tube externally threaded at one end for connection in the inner end of said neck, the other end of said tube contacting the journal box bearing on one side of the tube, a pin extending diametrically through the other end of said tube, and a plug of material normally closing said other end and fusible at a predetermined temperature, said pin extending through said plug temporarily retaining a portion of said plug in position after another portion of the plug has been melted and thus allowing for gradual decrease of pressure in an air brake system and gradual application of brakes when a journal box bearing becomes overheated.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
605,973	Pojarkow	June 21, 1898
891,341	Hunt et al.	June 23, 1908
2,420,924	Whittaker	May 20, 1947