E. O. DAVIS.

HOT BEARING ALARM.

APPLICATION FILED JAN. 13, 1913.

1,105,888.

Patented Aug. 4, 1914.

Fig. 1.

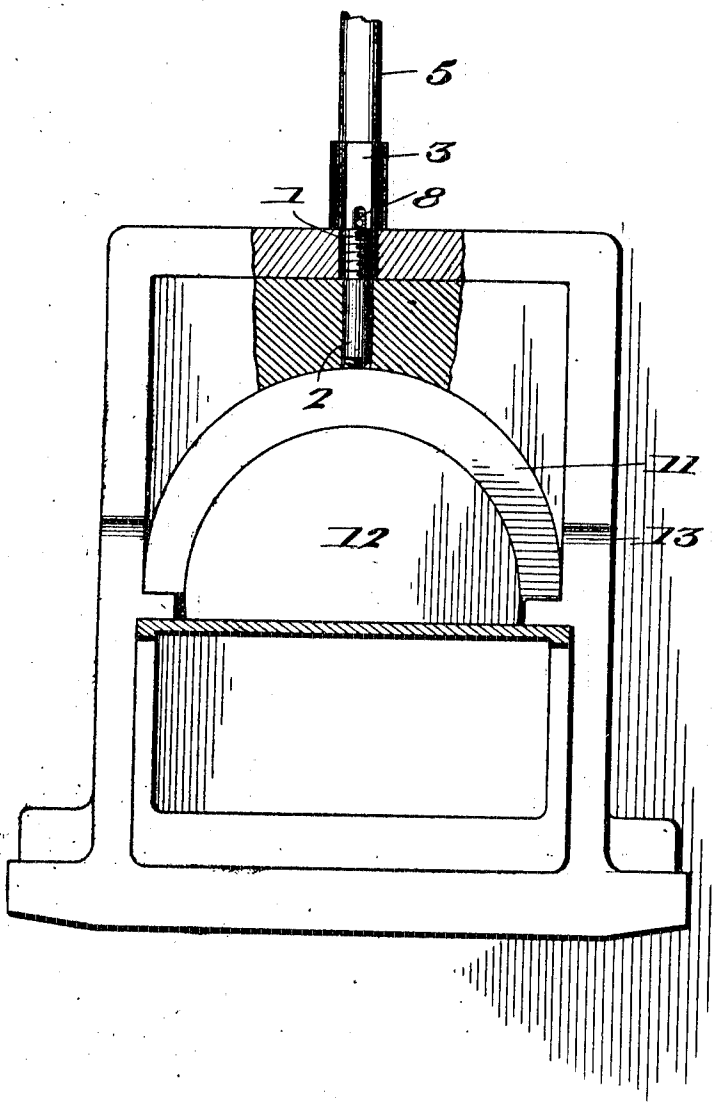


Fig. 2.

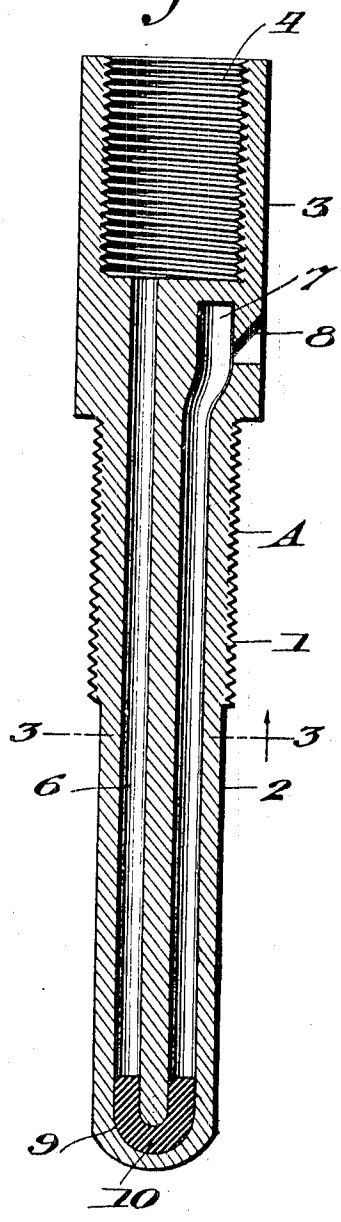
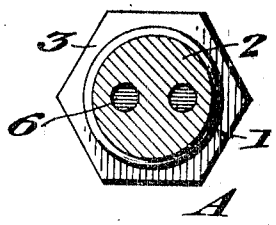


Fig. 3.



Witnesses

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HOT-BEARING ALARM.

1,105,888. Specification of Letters Patent. Patented Aug. 4, 1914.

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To all whom it may concern:

Be it known that I, ELMER O. DAVIS, a citizen of the United States, residing at the city of Denver, in county of Denver and State of Colorado, have invented certain new and useful Improvements in Hot-Bearing Alarms, of which the following is a specification.

My invention relates to an improvement in hot bearing alarms, and is more particularly adapted for use in detecting hot boxes on railway rolling stock.

The device is adapted to be used in connection with the air supply to the brakes, although it may be used in any other connection where a source of fluid supply is available.

When used in connection with the journal boxes of railway cars the device is intended to be so connected with the air supply pipes to the brakes that when a box becomes dry and overheated an alarm will be sounded and if the train is not stopped, the air supply will eventually be exhausted and will stop the train automatically.

This invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings—Figure 1 is a view in elevation of a journal box with parts broken away to show my device applied thereto; Fig. 2 is a vertical sectional view through the device, and Fig. 3 is a transverse sectional view on the line 3—3 of Fig. 2.

The casting A has its exterior formed on two diameters 1 and 2 and on the upper end is made preferably hexagonal, as at 3, or of any convenient form to fit a wrench. At the upper end the casting is counterbored at 4 and this counterbored portion is screw threaded to fit a pipe 5 which leads from the source of air supply to the brakes. A U or goose neck passage 6 communicates at its one end with the counterbored portion 4 and the opposite end is brought up, as at 7, to within a short distance of the counterbored portion and communicates with a whistle 8 which exhausts to the atmosphere through the side of the hexagonal portion 3 of the casting. A loop 9 of the passage 6 is in use intended to be filled to the desired height with a fusible plug 10 of lead or any other suitable medium so that it forms, as it were, a trap to prevent the escape of air from the air pipe 5 to the whistle 8. In use, it is intended that the portion of the casting A in which the loop 9 is located, shall bear against or be in proximity to the bushing 11 on which the axle 12 bears in the journal box 13. The portion 1 of the casting is provided with screw threads, and, as better shown in Fig. 1, the casting is preferably screwed down into the journal box from the top so that the lower end is in proximity to that part of the bushing which carries the greatest weight and consequently would generate the greatest heat although the casting may be introduced from the side of the journal box and yet attain the desired result.

With the casting inserted against the bushing shown in Fig. 1 and the air supply pipe 5 from the brake supply connected, the air supply is in no wise affected as the plug 10 prevents the escape of the air through the passage 6, but when the bearing becomes heated say to a temperature of 612 degrees, which is below the melting point of the bushing, the lead plug 10 would be melted, and, due to the pressure of the air from the pipe 5, the molten metal would be blown out from the bend 9 and the air escaping through the whistle 8 will cause it to sound an alarm. The whistle will continue to blow as long as air is supplied from the engine, and if the train is not stopped, the escape of the air through the passage 6 will eventually decrease the pressure in the brake lines until the brakes will be set which will automatically stop the train. In this connection it might be said that the size of the passage 6 and the opening through the whistle 8 may be varied as the occasion demands so that the brakes will be set immediately or after a certain length of time and that the fusible plug 10 might be of any metal or alloy, other than lead, which would melt and be liquid at a degree of heat best adapted to the metal used for the bushings.

When the hot bearing has been detected and the box properly attended to, the casting which has had the fusible plug discharged therefrom will be removed and a new one inserted and connected as before with the air supply, care being taken that the casting is not screwed down upon the hot bearing immediately. The casting which has been thus discharged can readily be recharged by having a small amount of lead run into the loop 9 thereby forming a new

fusible plug and making the device as operative as before.

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

1. A device of the character described comprising a casting, a U-passage formed in the casting, a pipe connecting one leg of said passage with a suitable source of fluid supply, the other leg being open to the atmosphere and a fusible plug located in the loop of the U-passage so that, as the temperature of the casting around the plug is raised to a sufficiently high temperature, the plug will be liquefied and will be discharged from the passage, thus permitting the escape of the fluid through the passage.

2. A device of the character described constructed to be used in connection with the air supply system to the brakes of a train, comprising a casting having a U passage formed therein, an air pipe connecting one end of said passage with the train supply system, and the other end of said passage free to exhaust to the atmosphere, the casting so constructed that the loop of the U passage may be placed and held in proximity to the bearing, of a wheel axle, and a fusible plug located in the bend in such a position that as the bearing becomes heated to a great degree, the plug will liquefy and be discharged from the passage by the pressure of the air thus permitting the air to escape and reducing the pressure to such an extent that the brakes will be set.

3. A device of the character described comprising a casting, a U passage formed in the casting, a pipe connecting one end of said passage with a suitable source of air supply, the other end of said passage connecting with a whistle which exhausts to the atmosphere, said casting so constructed that the loop of the U passage may be secured in proximity to the bearing, and a fusible plug so located in said loop that when the temperature in the bearing has risen to a certain degree the plug will be liquefied and will be discharged from the passage by the air causing the whistle to sound an alarm.

In testimony whereof I affix my signature. in the presence of two witnesses.

ELMER O. DAVIS.

Witnesses:
GEO. F. DAVIS,
L. M. HICKEY.