E. JORDAN & J. F. REINERT.

AUTOMATIC HOT BOX ALARM FOR JOURNAL BOXES OF RAILROAD CARS.

APPLICATION FILED AUG. 18, 1917.

1,270,954.

Patented July 2, 1918.

2 SHEETS—SHEET 1.

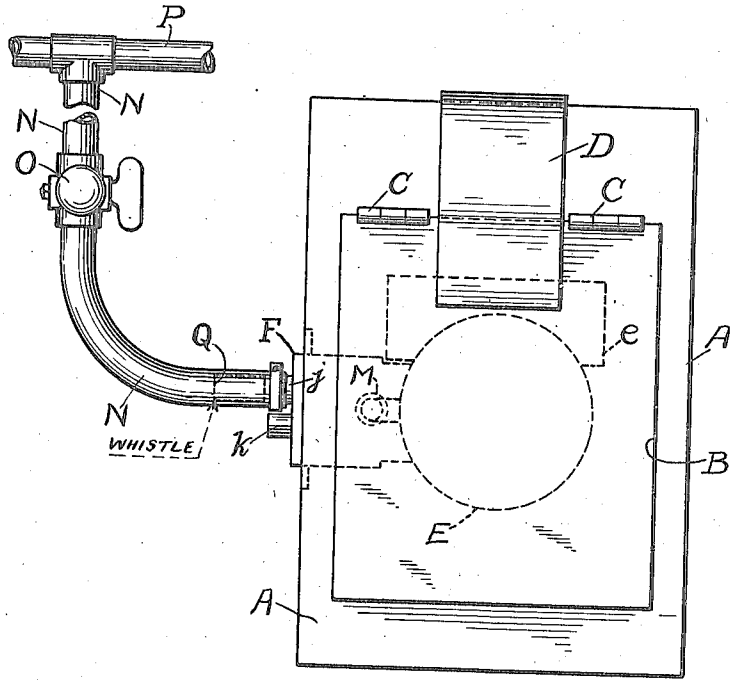


Fig. 1.

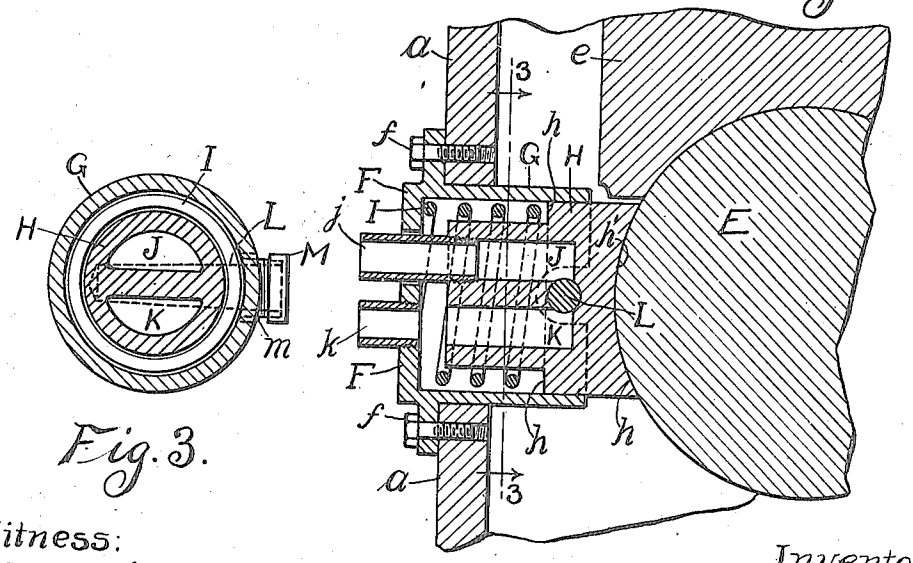


Fig. 2.

Fig. 3.

Witness:
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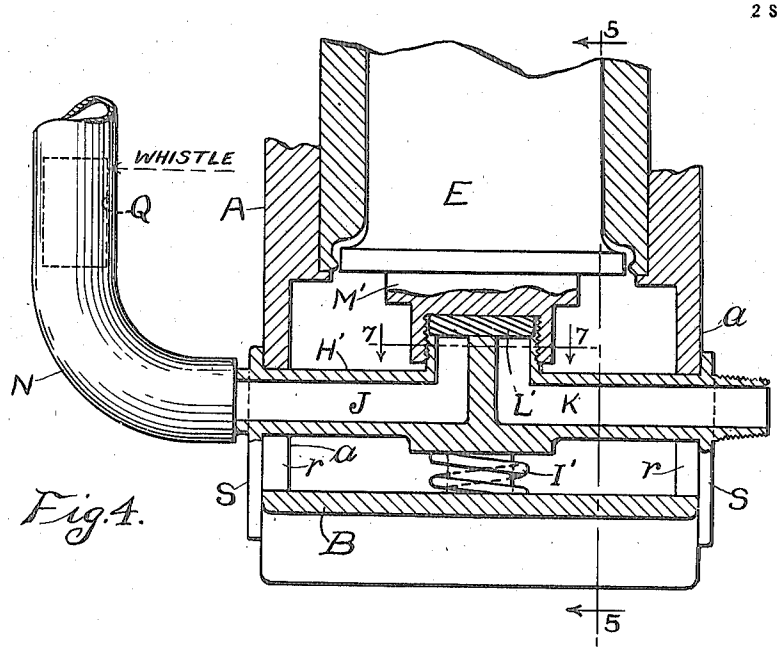


Fig. 4.

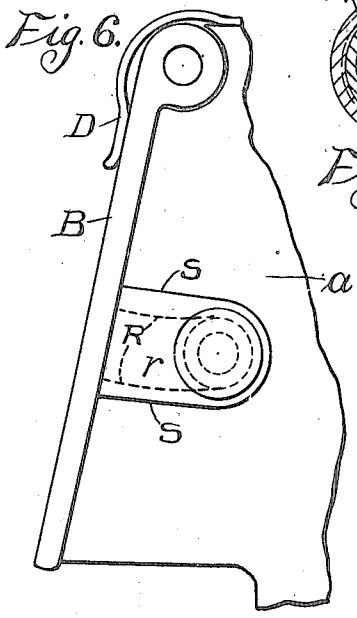


Fig. 6.

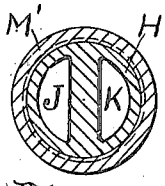


Fig. 7.

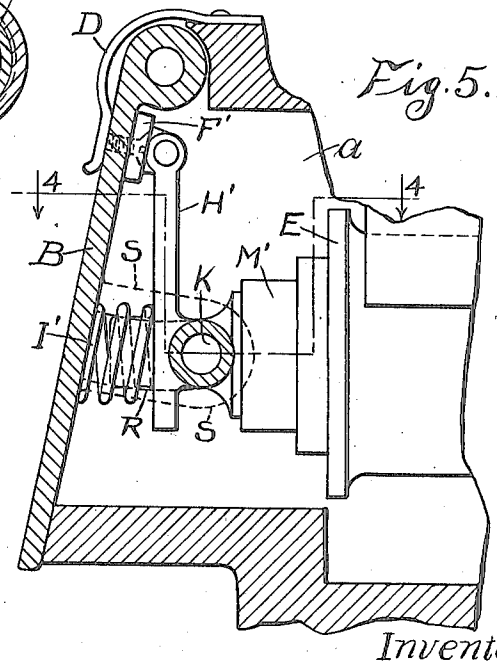


Fig. 5.

Witness:
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UNITED STATES PATENT OFFICE.

EDWARD JORDAN, OF OAK PARK, AND JOHN F. REINERT, OF SOUTH ELGIN, ILLINOIS, ASSIGNORS OF ONE-THIRD TO EDWARD J. ROCHE.

AUTOMATIC HOT-BOX ALARM FOR JOURNAL-BOXES OF RAILROAD-CARS.

1,270,954. Specification of Letters Patent. Patented July 2, 1918.

Application filed August 18, 1917. Serial No. 187,015.

To all whom it may concern:

Be it known that we, EDWARD JORDAN, residing at Oak Park, in the county of Cook and State of Illinois, and JOHN F. REINERT, residing at South Elgin, in the county of Kane and State of Illinois, have jointly invented certain new and useful Improvements in Automatic Hot-Box Alarms for Journal-Boxes of Railroad-Cars, of which the following, when taken in connection with the accompanying drawing, is a full and complete specification.

The invention relates to means whereby an alarm will be automatically given when a predetermined temperature obtains in the journals of the axles of a car, and to means whereby when said temperature obtains the air brakes of the trains of which said car is a member will be automatically applied to bring said train to a stop.

The objects of the invention are to obtain a mechanism which may be readily attached to the box of a car journal, and easily connected to the train pipe of the air brake system:—

A mechanism which will not be liable to break or get out of order, which is automatic in its operation and positive in its action, which is simple in construction and readily understood; which can be maintained in operative condition by trainmen during the time the car to which it is attached is a member of a traveling train, and which can be restored to operative condition by said train men in case automatic action thereof occurs.

Additional objects are set forth in this specification and disclosed by the claims.

Figure 1 is an end elevation of a journal box, and indicating a device embodying essential parts of the invention installed therein.

Fig. 2, is a view showing an axle in transverse vertical section and essential elements of the device illustrated in Fig. 1 in longitudinal section and

Fig. 3 is a vertical section of the device on line 3—3 of Fig. 2, viewed in the direction indicated by the arrows.

Fig. 4, is a vertical sectional view of a modification of a device embodying the invention on line 4—4 of Fig. 5, viewed in the direction indicated by the arrows.

Fig. 5, is a vertical section on line 5—5 of Fig. 4, viewed in the direction indicated by the arrows.

Fig. 6, is a side elevation of a portion of a journal box showing the door thereof in end elevation and

Fig. 7, is a sectional view on line 7—7 of Fig. 4, viewed in the direction indicated by the arrows.

A reference character applied to designate a given part indicates said part throughout said figures of the drawing wherever the same appear.

A represents the box of a journal bearing, *a* the sides of said box, and B a door, which is attached to the box by means of the hinges C, D represents a spring which yieldingly holds door B closed. E, Figs. 1 and 2, represents a car axle and *e* the brass of the journal of said axle. F represents a base which is secured rigidly to side wall *a* of box A, as by bolts *f*. Base F is provided with the cylindrical portion or part G, which forms a guide for movable member H. Member H is provided with a shoulder *h*, and I represents a spring which is interposed between the shoulder *h* and the base F, said spring tending to maintain the member H in an advanced position with the end *h'* of said member in contact with axle E. The spring I, in addition to maintaining the end *h'* in contact with the axle E serves as a take-up member, which provides for continued contact of said end axle on the reduction, by wear, of the diameter of said axle. The member H is of heat conducting material and is provided with the passageways J and K, which are adapted to be in communication with each other when fusible member L, is not in position illustrated in the drawings.

Said fusible member L is positioned at the ends of said passageways and arranged to obstruct said passageways when at climatic temperature.

The fusible member L which is illustrated in Figs. 1, 2 and 3 of the drawing is in the form of a tapering plug, and M is a cap provided with screw threads engageable with screw threads *m* (see Fig. 3), which covers the end of the plug L and may be used to force said plug firmly into place to make air tight contact betwen said plug and the walls in member H with which it comes in contact. *j* and *k*, Figs. 1 and 2 represent

nipples in communication respectively with the passageways J and K. N, represents a flexible pipe which is rigidly secured on nipple *j*, and O represents a stop cock interposed in flexible pipe N.

The pipe N is in communication with train pipe P which is illustrated in Fig. 1. Q represents a signal in flexible pipe N.

It will be noted that the pressure in pipe N against the fusible member L is the pressure carried in the train pipe P, at all times when the cock O is open and the device in operative condition, hence said fusible member is made to fit closely in position.

The stop cock O is to be closed only in case of the device having operated, the fusible member L having been melted, blown from the passageway K by the air pressure in J and during the time a new fusible member is being put in the device.

In the modification illustrated in Figs. 4 to 7, inclusive, the construction embodying the invention is designed to be attached to the cover or door B of box 8, by means of base F', which corresponds in function with the base F in Figs. 1 and 2.

The movable member H' performs the same function as member H and the spring I' functions in the same manner as does spring I.

In this modification the cap M' performs the function of cap M, so far as forcing the fusible member L' into position to obstruct communication between passageways J and K, and also performs in addition, the function of a conductor of heat from the axle E (with the end of which it is maintained in close contact by spring I'), in the same manner as the end *h'* performs the function of a conductor in the construction which is illustrated from 1 to 3.

The broken lines designated by the character R in Fig. 6 represent the upper and lower lines of the slot *r* in the side walls *a* of the box A, and S represents a plate on member H' which is adapted to cover slot *r* when the device is in operative position. Signal Q is an ordinary whistle in pipe *n* which is sounded by air flowing therethrough in the operation of the device.

In the construction illustrated in Figs. 1, 2 and 3, the cap M is exposed, to permit removal thereof, when the cover B is raised and in the modification described the raising of the cover B carries along therewith the member H' permitting the removal of the cap M'.

In the construction illustrated in Figs. 4 to 7, inclusive, the device is wholly removable from the journal box (by raising door B), thereby permitting care of said box.

The operation of the device is: when from any cause the axle or journal bearing of the car becomes heated heat is conducted therefrom to the fusible member (L or L') and said fusible member is reduced to a liquid form or into a pasty condition not sufficiently rigid to resist the pressure thereon of air in passageway J and is by said air "blown" from its position and from passageway K.

The flow of air from the train pipe, through this device, sounds the signal Q and also sets the brakes in the ordinary way of setting air brakes, by the reduction of the pressure in the train pipes thereof.

The sounding of the signal directs the attention of the train men to the particular bearing which is overheated.

In case a new fusible member cannot be put into the device the stop cock O may be closed and left closed while the train is moved, as to a siding.

We claim:

1. In an automatic alarm for a journal box, a base, a movable member to said base, said movable member provided with passageways extending into and out from said box, and a fusible member positioned in and arranged to obstruct said passageways, in combination with a rotatable shaft and an additional member positioned between said shaft and said fusible member, said interposed member being of heat conducting material and adapted to raise the temperature of said fusible member correspondingly with the rise in temperature of said shaft and to maintain the continuity of said passageways independently of said fusible member.

2. In an automatic alarm for a journal box, a movable member provided with passageways extending into and out from said box, a fusible member positioned in and arranged to obstruct said passageways, and an additional member arranged to force said fusible member into position, and to maintain the continuity of said passageways independently of said fusible member in combination with a rotatable shaft, said movable member being of heat conducting material and arranged relative to said shaft to raise, by conducting heat from said shaft thereto, the temperature of said fusible member correspondingly with the rise in temperature of said shaft.

3. In an automatic alarm for a journal box, a movable member provided with passageways extending into and out from said box, a fusible member positioned in and arranged to obstruct said passageways, and an additional member arranged to force said fusible member into position, and to maintain the continuity of said passageways independently of said fusible member, in combination with a flexible pipe in communication with one of said passageways, a signal arranged to be actuated by the flow of air through said pipe, and a rotatable shaft, said movable member being of heat conducting material and arranged relative to said shaft to raise, by conducting heat from said shaft

thereto, the temperature of said fusible member correspondingly with the rise in temperature of said shaft.

4. In an automatic alarm for journal boxes, a base, means to attach said base to the door of a journal box, a member movably attached to said base, in combination with a rotatably mounted shaft, means to yieldingly hold said movable member in an advanced position and in contact with said shaft, said movable member provided with passageways and provided with a communicating way adapted to form in combination with said passageways a continuous passageway extending into and discharging outside of said box, and a fusible member arranged to obstruct said communicating way, when said fusible and movable members are at climatic temperature.

5. In an automatic alarm for journal boxes having movable doors, the sides of said boxes adjacent to said doors provided with recesses, plates on said doors adapted to cover said recesses, a base, and means to attach said base to said door, in combination with a member movably attached to said base, and arranged to extend through said plates and, when said doors are closed, to be positioned in said recesses, said member provided with passageways and provided with a communicating way adapted to form, in combination with said passageways, a continuous passageway extending into and discharging outside of said box, a fusible member arranged to obstruct said communicating way when at climatic temperature, a rotatably mounted shaft, and means to yieldingly hold said movably attached member in an advanced position and in contact with said shaft.

EDWARD JORDAN.
JOHN F. REINERT.

In the presence of—
EDWARD J. ROCHE,
CHARLES TURNER BROWN.