June 3, 1924. 1,496,194

H. M. ZIEGLER

HOT BOX DETECTOR AND SIGNAL APPLIANCE

Filed Feb. 10, 1921

FIG. 1.

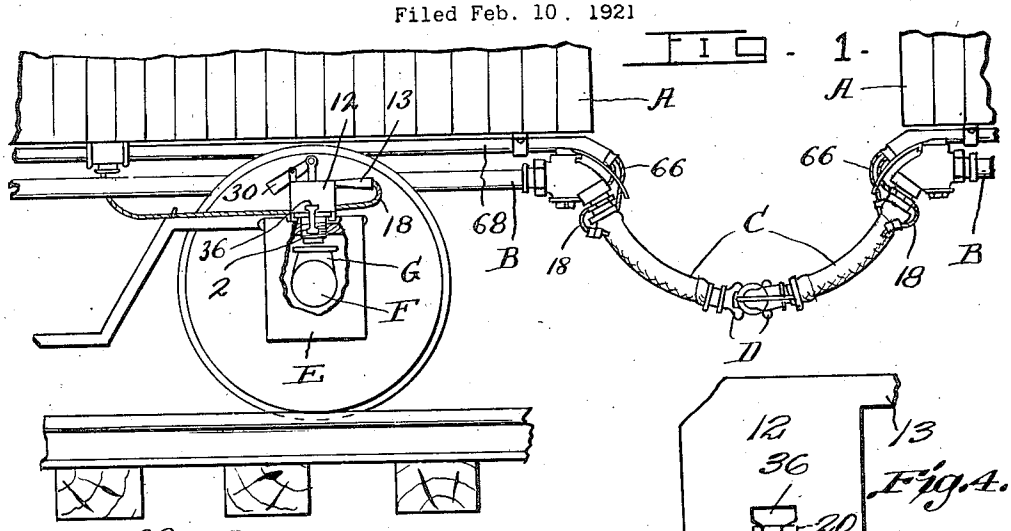


Fig. 4.

FIG. 2.

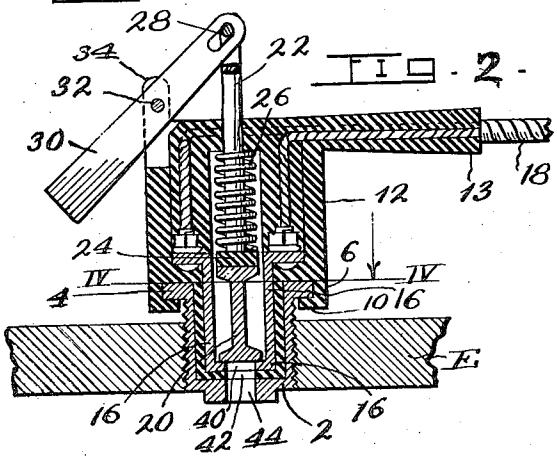
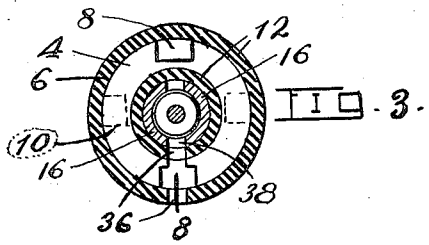


FIG. 3.



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UNITED STATES PATENT OFFICE.

HENRY M. ZIEGLER, OF SALINA, KANSAS.

HOT-BOX DETECTOR AND SIGNAL APPLIANCE.

Application filed February 10, 1921. Serial No. 444,003.

To all whom it may concern:

Be it known that I, HENRY M. ZIEGLER, a citizen of the United States, residing at Salina, in the county of Saline and State of Kansas, have invented certain new and useful Improvements in Hot-Box Detectors and Signal Appliances, of which the following is a specification.

My invention relates to a signal for indicating when any particular journal box of a train or a car is about to become overheated. The system also affords a means of communication between the engineer and the conductor both by telephone and a signal code. The system is applicable to both passenger and freight trains, and in order that the invention may be fully understood, reference will now be had to the accompanying drawings, in which:

Fig. 1 is a fragmentary side elevation of two box cars on which a portion of the system is installed.

Fig. 2 is a vertical section of an appliance installed on each journal box.

Fig. 3 is a cross section on line IV—IV of Fig. 2.

Fig. 4 is an enlarged detail elevation of certain parts disclosed by Figs. 2 and 3.

A—A designates two box cars equipped with journal boxes E in which the axle journals F are mounted in babbitted brass bearings G. All of the foregoing are of usual construction.

Referring now in detail to the means employed in carrying out my invention, 2 designates bushings, one of which is threaded into the top of each journal box E. Each bushing 2 is provided at its upper end with a coupling member 4 to which a corresponding coupling member 6 is detachably connected. As shown more clearly on Fig. 3, the coupling member 4 has two oppositely-disposed marginal openings 8 for the passage of marginal lugs 10 on the coupling member 6. On inserting the lugs 10 through the openings 8 and then turning the coupling member 6 a quarter of a revolution the two coupling members 4 and 6 are reliably connected. Conversely, by turning the coupling member 6 backward to bring the lugs 10 into coincidence with the openings 8, the coupling member 6 can be removed from its companion.

As disclosed more clearly on Fig. 2, the coupling member 6 is integral with the lower end of a housing 12 consisting, preferably, of fiber or other suitable insulating material and provided with a handle 13 whereby it may be rotated to engage or disengage the coupling member 6 from the coupling member 4. Said housing 12 is provided at its lower portion with two contacts 16 spaced apart and connected at their upper terminals to a wire 18.

The lower terminals of the contacts 16 are bridged by a fuse 20 consisting of an alloy which will burn out at a lower temperature than the babbitt in the journal brasses G. The fuse 20 is firmly held in engagement with the lower terminals of the contacts 16 by a plunger 22 extending downwardly through the housing 12 and provided at its lower end with a block of insulation 24, held upon the fuse 20 by an expansible spring 26 embracing the plunger 22 and bearing at one end against said block 24 and at its opposite end against the upper interior portion of the housing 12. The upper end of the plunger 22 has a pin-and-slot connection 28 with a visual signal 30, preferably in the form of a semaphore, mounted on a pivot 32 between two lugs 34 projecting from the housing 12.

The fuse 20 is preferably of spool-form and is placed in position through correspondingly shaped openings 36 and 38 in the housing 12 and between the contacts 16, respectively. After being passed through the openings 36 and 38 the spool is lowered into contact with the lower terminals of the contacts 16. This brings the flanges of the spool below the two enlarged portions of the openings 36 and 38, so that there will be no danger of the fuse 20 accidentally falling out through said openings.

Registering openings 40, 42 and 44 are left between the lower ends of the contacts 16, the lower end of the housing 12, and the lower end of the bushing 2, respectively, as disclosed on Fig. 2, for the fuse to escape when burned out. When the fuse burns out the plunger 22 is immediately forced downwardly by the spring 26 and raises the free end of the semaphore 30 to active position, so that a trainman can determine at a glance which journal box requires attention and a new fuse.

From the foregoing description it is apparent that I have provided a signal embodying the advantages above pointed out and while I have shown and described the preferred construction, combination and ar-

rangement of parts, I reserve the right to make such changes as properly fall within the spirit and scope of the claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent, is:

1. In combination with a journal box, a bushing having coupling members and mounted in and having its inner end substantially flush with the inner surface of said journal box, a housing supported by said bushing and having coupling members with lugs for removably engaging the coupling members of the bushing, a fuse adapted to be placed in the bushing through an opening therein and in the housing without removing the latter from the bushing, a constantly visible signal pivotally mounted upon the housing, a plunger slidably mounted in the housing and normally resting upon the fuse to hold the signal in inactive position, and a spring to actuate said plunger and cause it to move the signal to active position when the fuse burns out, substantially as shown and described.

2. In combination with a journal box, a bushing having coupling members and mounted in and having its inner end substantially flush with the inner surface of said journal box, a housing supported by said bushing and having coupling members with lugs for removably engaging the coupling members of the bushing, a handle to the housing so that the same may be readily coupled to and uncoupled from the bushing, a fuse adapted to be placed in the bushing through an opening therein and in the housing without removing the latter from the bushing, a constantly visible signal pivotally mounted upon the housing, a plunger slidably mounted in the housing and normally resting upon the fuse to hold the signal in inactive position, and a spring to actuate said plunger and cause it to move the signal to active position when the fuse burns out, substantially as shown and described.

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

HENRY M. ZIEGLER

Witnesses:
F. C. FISCHER,
L. J. FISCHER.