No. 730,097. PATENTED JUNE 2, 1903.

J. S. CRAWFORD & G. W. KINDER.

AUTOMATIC ALARM FOR HEATED JOURNALS.

APPLICATION FILED JAN. 23, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 5

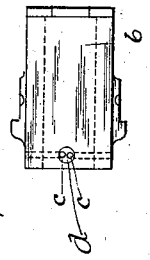


Fig. 1

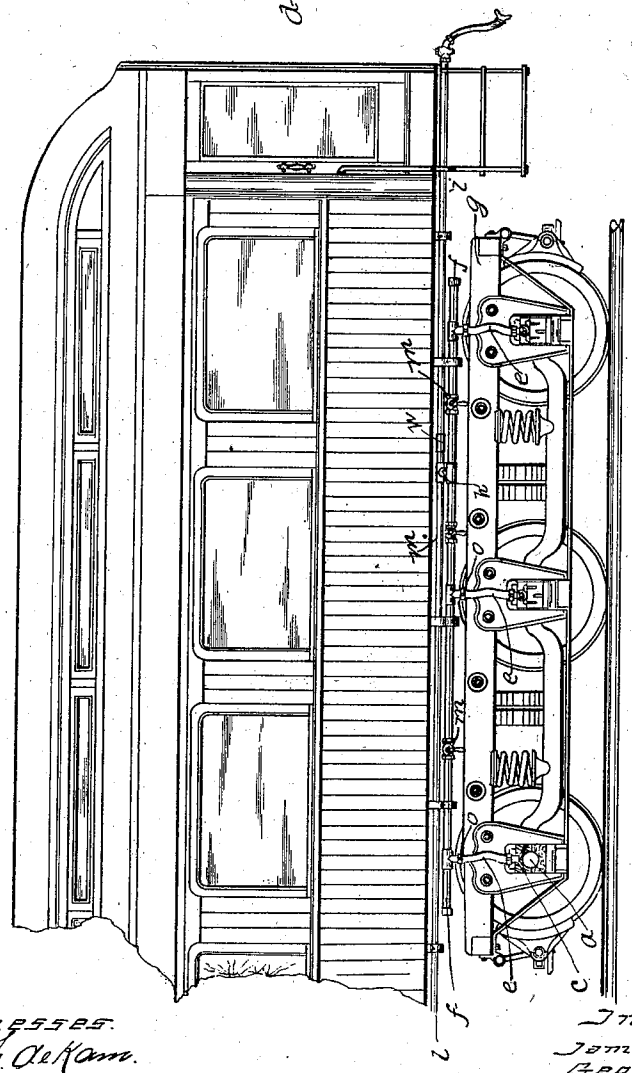
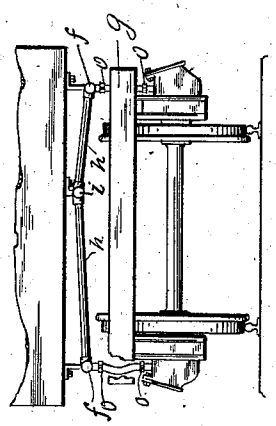


Fig. 2



Witnesses.
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By

Their Attorney.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 7

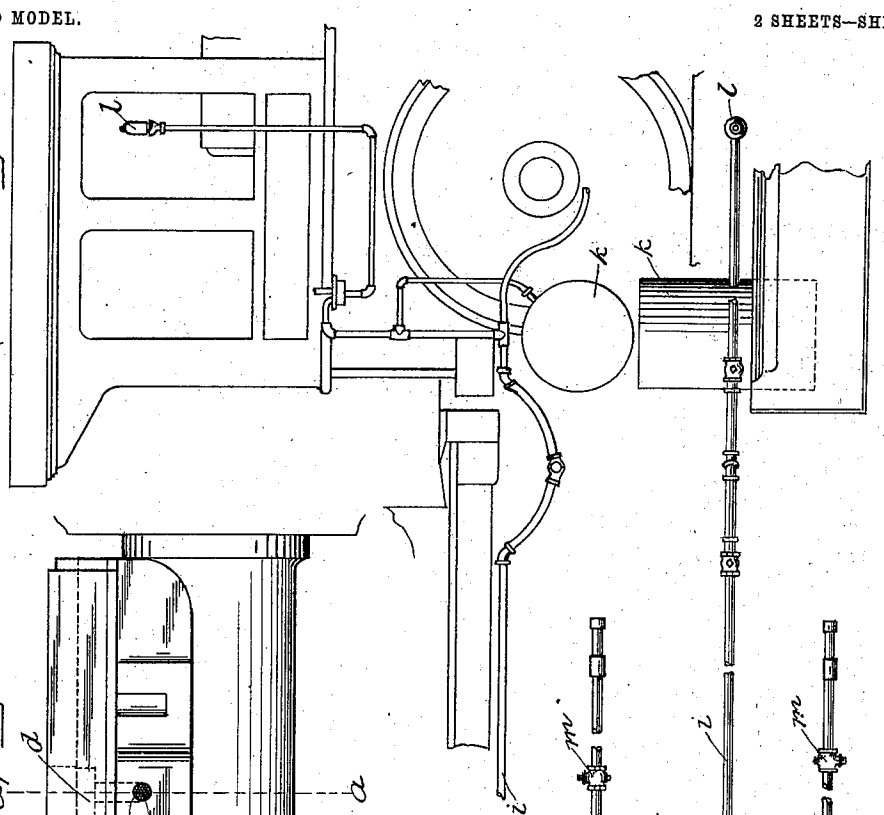


Fig. 3.

Fig. 4

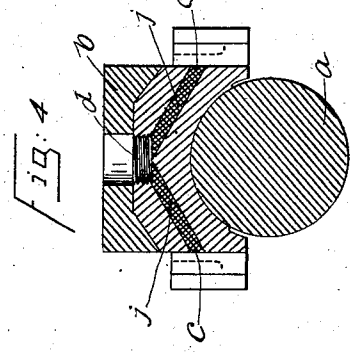
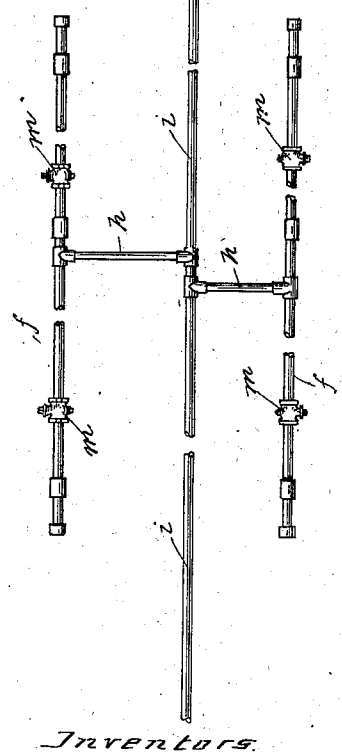


Fig. 6



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No. 730,097. Patented June 2, 1903.

UNITED STATES PATENT OFFICE.

JAMES S. CRAWFORD, OF SARNIA, AND GEORGE W. KINDER, OF STRATHROY, CANADA.

AUTOMATIC ALARM FOR HEATED JOURNALS.

SPECIFICATION forming part of Letters Patent No. 730,097, dated June 2, 1903.

Application filed January 23, 1903. Serial No. 140,233. (No model.)

To all whom it may concern:

Be it known that we, JAMES S. CRAWFORD, residing at Sarnia, in the county of Lambton, and GEORGE W. KINDER, residing at Strathroy, in the county of Middlesex, Province of Ontario, Canada, British subjects, have invented certain new and useful Improvements in Automatic Alarms for Heated Journals; and we hereby declare that the following is a full, clear, and exact description of the same.

This invention relates to an automatic alarm for heated journals and journal-boxes, designed especially for use in connection with the rolling-stock of railways, the object of the invention being to so arrange these journals or journal-boxes that they will on the heating of the journal automatically operate the air-signals to communicate to the engineer or other attendant a signal that the journal or journal-box has become heated and that an accident is likely to result therefrom.

In carrying out the invention we provide the journal-box with an air-passage normally closed by a fusible substance capable of melting at a comparatively low temperature, and we connect this air-passage with the air-pipes of the air signaling mechanism in order that when the fusible substance has melted the air signaling device will be instantaneously and automatically operated.

In the drawings, Figure 1 is a side elevation of a portion of a car, showing the automatic alarm attached. Fig. 2 is an end elevation of one of the trucks. Fig. 3 is a side view of the end of one of the axles and bearing. Fig. 4 is a vertical section of the same on the lines *a a* of Fig. 3. Fig. 5 is a plan view of the top of one of the bearing-boxes. Fig. 6 is a plan view showing the arrangement of the air-pipes, and Fig. 7 is a side elevation showing the connection with the air-whistle in the engineer's cab.

Like letters of reference refer to like parts throughout the specification and drawings.

Mounted on the axle *a* is a bearing-block *b*, in which are formed two air-passages *c*, communicating at their inner ends with the port *d*, to which is fitted one end of the flexible air-tube *e*, the opposite end of the flexible air-tube *e* being connected to the auxiliary air-pipe *f*, extending along the top of the truck *g* and connected, by means of branch pipes *h*, to the main air-pipe *i*. Contained within the air-passages *c* is a fusible substance *j* to normally close the air-passages and prevent the escape of the air from the auxiliary air-pipe *f* until the heat of the journal has attained a sufficiently high temperature to melt the fusible substance. The escape of the air through the air-passages *c* operates the signaling device in the car or engine and notifies the engineer or other attendant that one of the journals or journal-boxes has become heated and that an accident is likely to result therefrom.

It is possible to apply this automatic alarm to any style of a journal or journal-box by employing the same system of air-pipes as illustrated in Fig. 6 of the drawings and supplying the pipes with compressed air from an air-cylinder suitable for that purpose.

As shown in Fig. 6 of the drawings, the main air-pipe *i* is supplied with compressed air from the cylinder *k* and is connected to an air-signal *l* in the car or engine, the air-signal being operated on the escape of the air through the air-passage *c*.

By reference to Fig. 1 of the drawings it will be noticed that the auxiliary air-pipe *f* is fitted with a series of valves *m*, located between the flexible air-tubes and the branch pipes *h* to control the passage of the air therethrough. The flexible air-tubes *e* are of a sufficient length to permit of the play of the journal-boxes during the motion of the car and are preferably fitted with metal couplings *o*, by means of which they are connected, respectively, to the bearing-blocks *b* and the auxiliary air-pipes.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In an automatic alarm for heated journals or journal-boxes, the combination of a shaft or axle, a bearing-block therefor having an air-passage therein normally closed by fusible substance and an air-pipe arranged to be connected with an air-supply source and with a signaling device operated by the air, on the melting of the fusible substance, substantially as specified.

2. In an automatic alarm for heated jour-

nals, the combination of the shaft or axle, a bearing-block therefor having an air-passage therein closed by easily-fusible substance, an air-pipe connected with the air-passage of the bearing-block, a compressed-air cylinder supplying the air-pipe and an air-signal connected to the air-pipe, substantially as specified.

3. In an automatic alarm for heated journals, the combination of a main air-duct, a compressed-air cylinder and an air signaling device connected thereto, an auxiliary air-duct connected to the main air-duct, a shaft or axle, a bearing-block therefor having air-passages therein, a flexible tube connected to the air-passages and to the auxiliary air-pipes, a fusible substance contained in the air-passages arranged to be melted by the heating of the bearing-block, substantially as specified.

4. In an automatic alarm for heated journals the combination of the shaft or axle, an air signaling device, and means to operate the air signaling device actuated by the heating of the axle, substantially as specified.

Sarnia, January 16, 1903.

JAMES S. CRAWFORD.
GEORGE W. KINDER.

In presence of—
C. TH. DE KAM,
LEXY A. LOGAN.