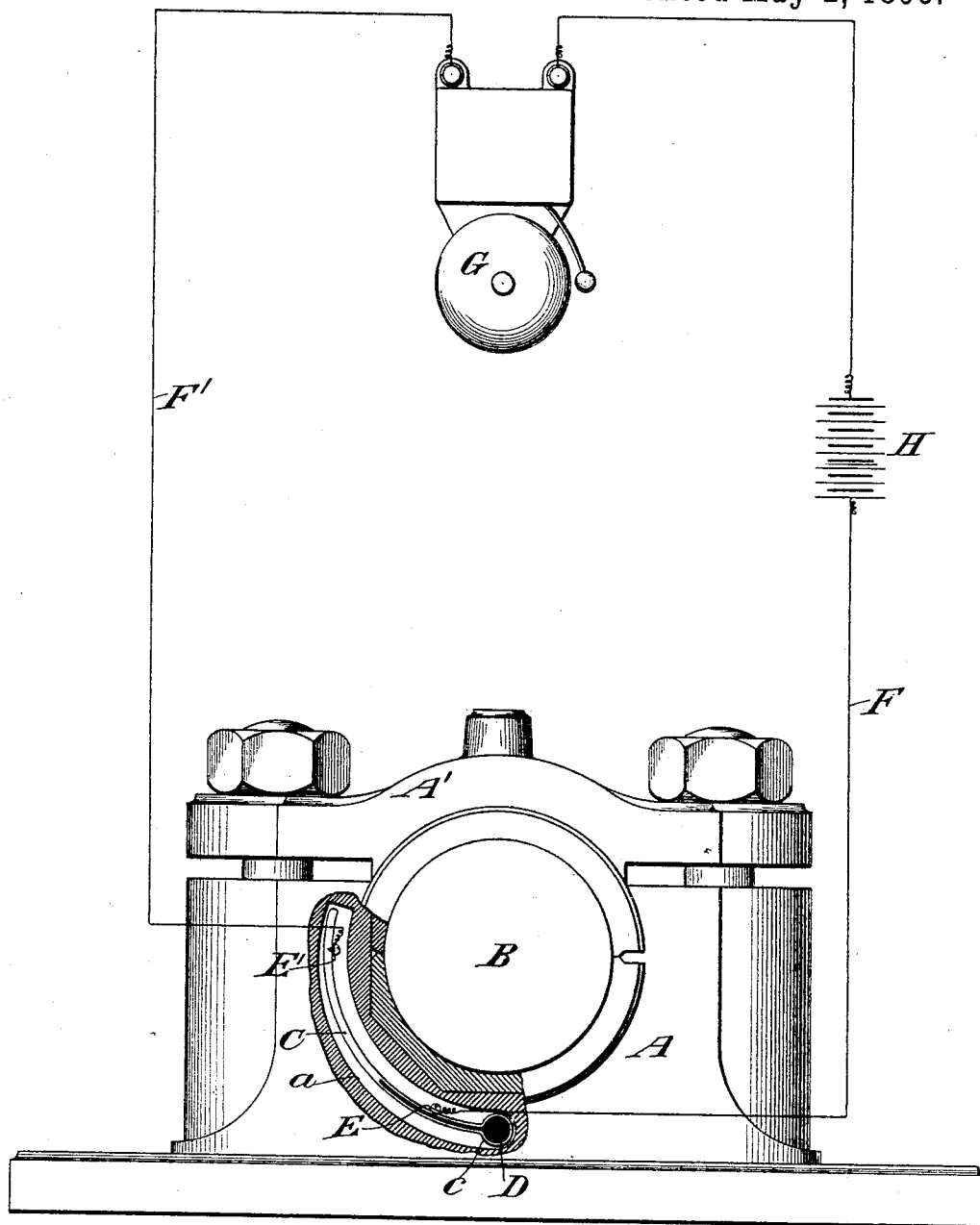


(No Model.)

R. C. KERR & P. HARDMAN.
HOT BOX DETECTOR.

No. 496,659.

Patented May 2, 1893.



Witnesses:-

B. H. Hayworth

C. Sundgren

Inventors:-

Robert C. Kerr

Peter Hardman

by attorneys

Brown & Howard

UNITED STATES PATENT OFFICE.

ROBERT C. KERR AND PETER HARDMAN, OF FALL RIVER, MASSACHUSETTS,
ASSIGNORS TO THE KERR THREAD COMPANY, OF SAME PLACE.

HOT-BOX DETECTOR.

SPECIFICATION forming part of Letters Patent No. 496,659, dated May 2, 1893.

Application filed November 26, 1892. Serial No. 453,199. (No model.)

To all whom it may concern:

Be it known that we, ROBERT C. KERR and PETER HARDMAN, of Fall River, in the county of Bristol and State of Massachusetts, have invented a new and useful Improvement in Hot-Box Detectors, of which the following is a specification.

Our invention relates to an improvement in hot box detectors in which an alarm is operated by the expansion of a part subjected to the heat developed by a journal operating in its bearing.

The accompanying drawing represents a journal and journal box with the detector in operative position relative thereto.

We have chosen, to illustrate our invention, an electric alarm circuit adapted to be closed by the expansion of the mercury confined in a tube seated within a journal box in position to render it sensitive to the heat which may be generated by the journal rotating therein.

The half sections of the journal box are denoted by A and A'. The journal, which may be the journal of line shafting, a car wheel journal, or other well known type of journal, is denoted by B. Within a recess *a*, formed in the section A of the journal box close beneath the journal, where it bears with greatest force upon the box there is located a tube C provided with a bulb *c* and containing mercury D. The tube C may be of glass and sealed after the manner of an ordinary thermometer tube. We have shown the tube in the present instance, as curved to conform to the bearing face of the half section. Contact pieces E and E' are located at intervals along the tube and extend through its wall into position to contact with the mercury therein when the latter travels along up the tube. One of the contact pieces, E for example, may be permanently in contact with

the mercury if so desired. Electric conductors F and F' extend from the contact pieces E and E' to a signal G and battery H, the circuit being complete through the battery and signal whenever the contact pieces E and E' are electrically connected. The signal G and battery H may be located wherever it is found most desirable.

The contact piece E' is so located with respect to the top of the column of mercury within the tube C that the said column of mercury will reach the contact piece E' whenever the temperature of the journal box shall have reached a degree so high as to threaten danger. The moment the mercury reaches the contact piece E', the circuit will be completed through the signal and the signal will operate to warn the person in charge, of the existence of a "hot box."

It is obvious that numerous slight changes may be made in the form and arrangement of the several parts without departing from the spirit and scope of our invention, hence we do not wish to limit ourselves strictly to the construction herein set forth, but

What we claim is—

The combination with a journal box, a signal and an electric circuit including the signal, of an expansible circuit closing medium located in a groove in the under side of the journal box in proximity to the journal on that side of the journal toward which the latter normally presses with the greatest force, and contact pieces located in position to engage the expansible circuit closing medium when the medium reaches a predetermined degree of heat, substantially as set forth.

ROBT. C. KERR.
PETER HARDMAN.

Witnesses:

GEORGE E. BAMFORD,
HENRY H. EARL.