

C. J. KEIM.  
Car-Axle Box.

No. 197,379.

Patented Nov. 20, 1877.

Fig. 1.

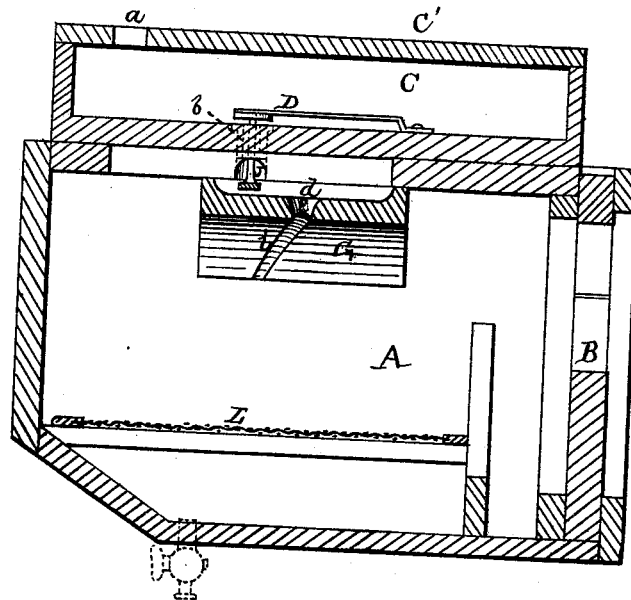
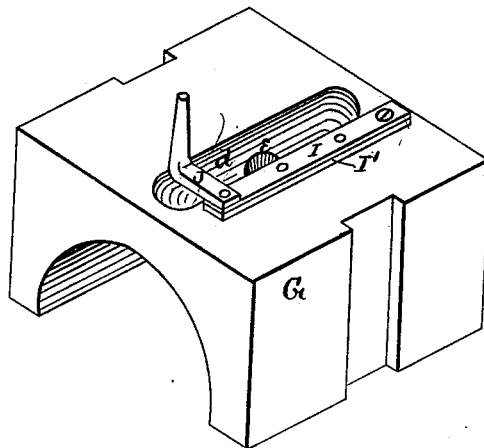


Fig. 2.



WITNESSES.

Henry V. Miller  
Nankfall

INVENTOR

C. J. Keim,  
Alexander Watson  
ATTORNEYS

# UNITED STATES PATENT OFFICE.

CHARLES J. KEIM, OF CATASAUQUA, ASSIGNOR TO CHARLES D. W. BOWER AND LOUIS H. LAMBERT, OF SAME PLACE, AND BENJAMIN B. LYNN, OF BETHLEHEM, PENNSYLVANIA.

## IMPROVEMENT IN CAR-AXLE BOXES.

Specification forming part of Letters Patent No. **197,379**, dated November 20, 1877; application filed September 27, 1877.

*To all whom it may concern:*

Be it known that I, CHARLES J. KEIM, of Catasauqua, in the county of Lehigh, and in the State of Pennsylvania, have invented certain new and useful Improvements in Automatic Lubricators for Railroad-Cars; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

My invention relates to journal-boxes for stationary machinery, railroad-car axles, locomotives, or any devices for rotating journals; and it consists in the construction of an automatic lubricator, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a longitudinal vertical section of a car-axle journal-box embodying my invention. Fig. 2 is a perspective view of the "brass" or block above the journal.

A represents a car-axle journal-box of any suitable construction, having at its inner end a sliding washer, B, to fit the journal and adjust itself thereto according to the wear. The journal-box A is formed on the top with an oil-reservoir or oil-chamber, C, provided with a cover, C', having an aperture, *a*, for the admission of oil. In the bottom of the box C is inserted a tube, *b*, to form the outlet for the oil in the box, and over said tube is placed a spring-valve, D, for closing the same, so that the oil cannot pass out except when the valve is lifted.

G represents the ordinary brass or half-box placed on top of the journal, within the journal-box A. This brass is provided with a longitudinal groove or recess, *d*, in the top, into which the oil flows from the tube *b*. In this groove or recess is a passage, *e*, to the under side of the brass, said passage leading into diagonal grooves *i i*, to distribute the oil over the journal. On top of the brass G is secured a device for automatically raising the valve D, said device consisting of two metal plates or strips, I and I', riveted together, and fastened at one end to the top of the brass, as shown.

The lower plate or strip I' is made of metal that is sensitive to heat and cold, so as to expand and contract readily by the action of different temperatures, while the upper plate or strip I is made of such metal as will not so readily expand and contract. The plate I' is, at its free end, provided or formed with an angular arm, J, which extends up through the tube *b*, as shown.

In operation, when the journal becomes hot, such heat is transmitted through the brass to the plates I and I', and the plate I expanding more quickly and readily than the plate I', the outer or free ends of said plates will automatically curve upward, so that the arm J will raise the valve D and allow the oil to flow down onto the journal, thereby cooling the same, and as it becomes cool the plate I contracts, lowering the arm J, and the valve D shuts off the supply of oil.

The bottom of the journal-box A receives the waste oil, and a screen, L, is inserted in said box below the journal, through which screen the oil passes, while it excludes all dirt, dust, and cinders, so that the oil will be in proper condition for use over again. It is intended to be drawn off through a suitable cock and be poured into the top reservoir C.

My automatic lubricator is applicable to any journal-boxes, whether it be for stationary machinery, locomotives, car-axle, or anything else.

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

1. An automatic lubricator for journal-boxes, in which the valve for letting on and shutting off the oil is controlled and operated by the unequal expansion and contraction of two or more pieces of metal, substantially as herein set forth.

2. The combination of the journal-box A, with oil-reservoir C, having outlet *b*, the valve D, brass G, and the automatic device I I' J, substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 14th day of September, 1877.

CHARLES J. KEIM.

Witnesses:

A. F. KOONS,  
JACOB S. WARN.