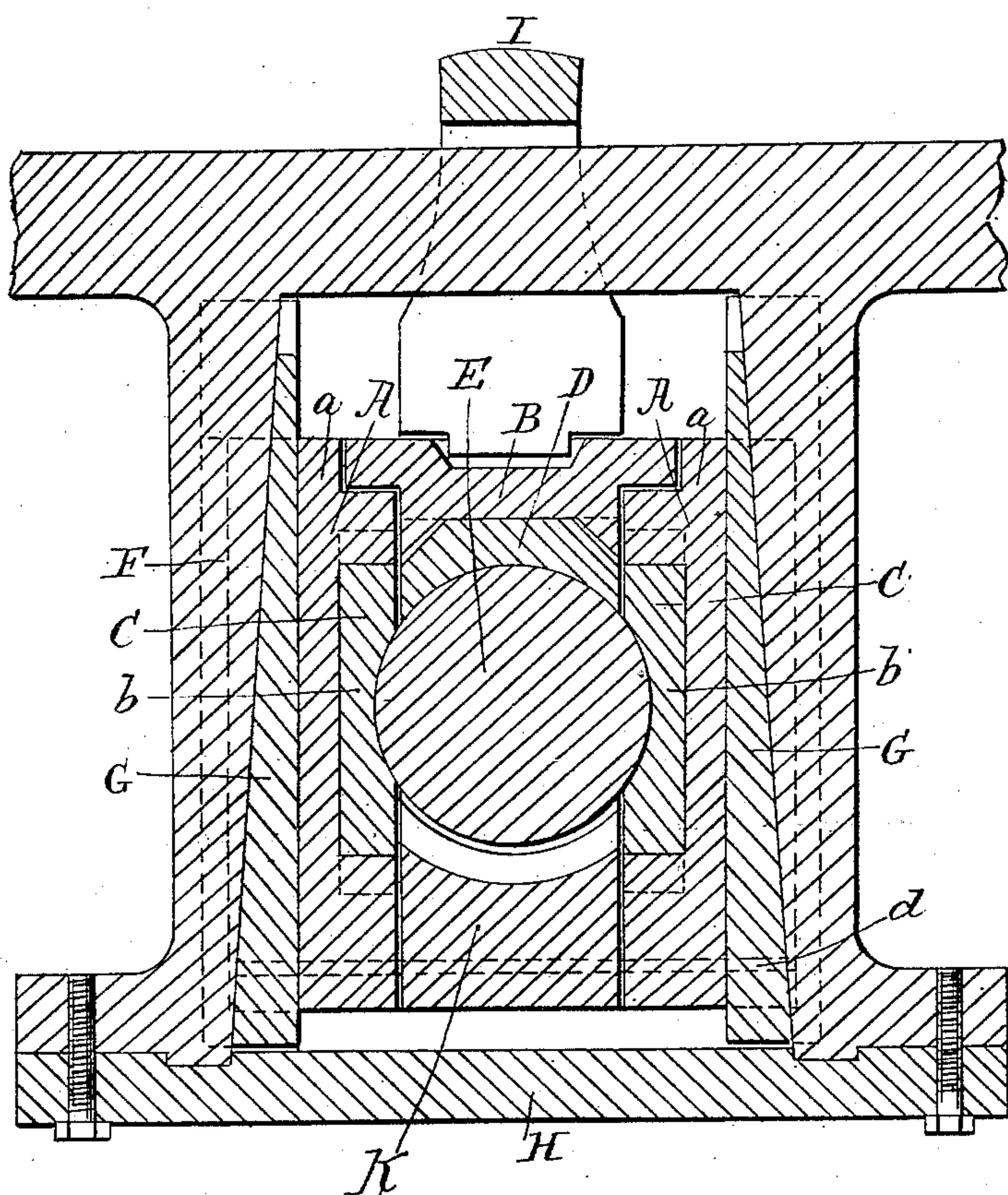


J. W. GOFF.

Axle Box.

No. 86,390.

Patented Feb. 2, 1869.



Witnesses.

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Wm A. Morgan

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# United States Patent Office.

JOSEPH W. GOFF, OF PROVIDENCE, RHODE ISLAND.

*Letters Patent No. 86,390, dated February 2, 1869.*

## IMPROVED BOX FOR LOCOMOTIVE DRIVING-AXLES.

The Schedule referred to in these Letters Patent and making part of the same.

### *To all whom it may concern:*

Be it known that I, JOSEPH W. GOFF, of Providence, in the county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Journal-Boxes, for Locomotive Driving-Axles; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to improvements in the construction of journal-boxes for the driving-axles of locomotives, whereby it is designed to provide an arrangement that will be less liable to wear and become slack in the sides, and admit of more readily taking up the slack occasioned on the sides of the boxes, by the pounding thereon of the axle under the action of the crank, and also admit of effecting the said adjustment, or the removal of the box entirely from the axle and the housings, with greater facility than can be done with those as at present constructed.

The accompanying drawings represent a sectional elevation of my improved journal-box, and a portion of the frame of a locomotive.

A A and B represent the two side and top portions of my improved journal-box, which I construct of three pieces, and provide each with its corresponding brass bearings, C C' and D.

The upper ends of the side-pieces A of the box are provided with recesses *a*, and the top, B, is provided with corresponding projections, arranged to bear in the said recesses, for the purpose of maintaining the parts in their proper relative positions, the upper part B being made narrower than the diameter of the journal E, and the said pieces being provided with concavities *b*, of sufficient depth to embrace so much of the semicircle of the journal above the horizontal line of the axis as is not embraced by the upper bearing D, and also a corresponding portion of the journal below the said horizontal line. This arrangement admits of a greater bearing-surface against the sides of the journal, to oppose the pounding action of the cranks, than can be done where all the three sides A A and B of the boxes are made in one piece, as is now the common practice, for, when they are made of one piece, in order to slip them on over the journal in a lateral direction, as is necessary on account of the collar at the end, they can only be made to bear on half the surface of the journal.

As a consequence of the slight amount of bearing-surface on the sides of the axles, to oppose the pounding action of the cranks, and especially as there is none below the horizontal line of the axis of the journal, the said pounding action has a tendency to throw the box slightly upward against the springs which support the load, thereby throwing the curved portion of the bearing, from the said horizontal line to the top of the bear-

ing, slightly off the journal, and consequently delivering the blow upon the vertical part, below the horizontal line, where the resisting surface is very slight; hence these parts must soon yield to the said pounding action, and the boxes become slack, and when so slackened, it is difficult to repair them, and they are replaced by new ones, and, in order to remove them, the framing of the engine must be raised sufficiently to allow the boxes, while on the axle, to fall below the housings F, the bar H being removed; whereas, according to my improved arrangement, the side bearings C, embracing a considerable portion of the surface of the journal below the said horizontal line, it is impossible for the boxes to rise under the pounding action of the cranks, and the blow is taken by the whole bearing-surface of the said side bearings or brasses C. Moreover, when they do become worn, they can be readily adjusted and tightened by packing between the back part of the brasses and the faces of the recesses in the parts A in which the brasses are fitted.

The parts A of the boxes may also be adjusted, to compensate for looseness in the bearings, by the wedges G, interposed between the parts A and the housings F, which also serve to prevent any slack between the boxes and the housings. I do not, however, lay any claim to these wedges, as they are also employed in connection with the boxes, as now commonly constructed.

When it is desired to remove my improved boxes from the axles, the same may be accomplished without raising the framing, as in the case of those now in use, be first removing the bar H and wedges G, when the parts A may be taken out, and, lastly, the upper part B may be removed by raising the weight of the load slightly off it, which it supports through the medium of the bridge I, on the top of which the springs of the locomotive are secured, and conversely, the boxes may be applied without difficulty.

K represents the oil or sponge-box, which may be applied to my improved boxes, and secured by the pins *a*, similarly to the application of the same to the boxes of common construction.

Having thus described my invention,

I claim as new, and desire to secure by Letters Patent—

Journal-boxes for the driving-axles of locomotives, composed of the separable sides A A and top B, and so arranged that the said sides will present material portions of their bearing-surfaces to the journal above and below the horizontal line of the axis of the same, substantially as and for the purpose specified.

The above specification of my invention signed by me, this 19th day of November, 1868.

JOSEPH W. GOFF.

Witnesses:

FRANK BLOCKLEY,  
ALEX. F. ROBERTS.