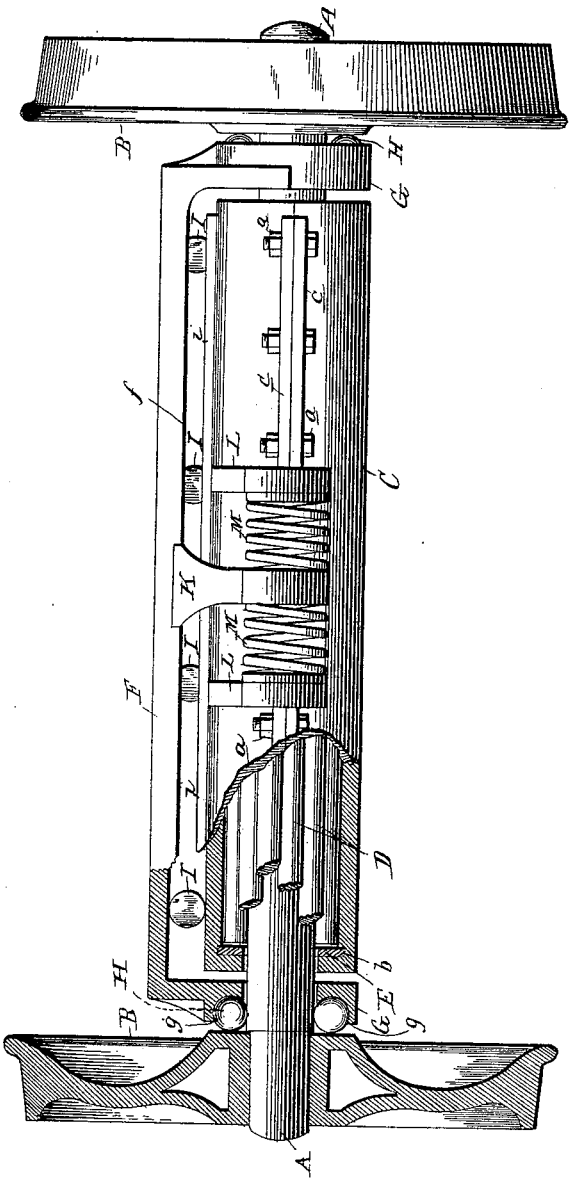
(No Model.)

W. S. SHARPNECK.

CAR AXLE BOX.

No. 386,899. Patented July 31, 1888.



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WILLIAM S. SHARPNECK, OF DENVER, COLORADO.

CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 386,899, dated July 31, 1888

Application filed September 29, 1887. Serial No. 251,048. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM S. SHARPNECK, a citizen of the United States, residing at Denver, in the county of Arapahoe and State of Colorado, have invented certain new and useful Improvements in Journal-Boxes, of which the following is a specification, reference being had therein to the accompanying drawing, which represents a side elevation of my improvement with parts broken away and parts in section.

This invention relates to certain new and useful improvements in journal-boxes; and it has for its object to obtain a great length of rolls and consequently a much greater bearing-surface, whereby the rollers are prevented from rubbing together when under the load.

The great difficulty with roller-boxes has always been to find some simple appliance that would hold the rolls apart and prevent reverse motion and at the same time hold them parallel with the axle. I have found from practice that the latter trouble is much the greater point to overcome; in fact it cannot be accomplished with short rolls; but by making the rolls nearly as long as the axle and filling the space around the axle with these long rolls this difficulty is overcome; and it is practically impossible for one end of the rolls to get behind the other or for the rolls to rub together when under the load, especially when the load is on top of the axle, for the following reasons: As soon as one roll is relieved of the load, it drops down of its own gravity onto the side of the rolls lying in the bottom of the box and crowds the one on the opposite side of the axle up till it is caught by the axle under the load, when it bounds forward a little, leaving a slight space between it and the next roll. I thus obviate entirely the reverse motion of one roll against the other while under the load.

The invention consists in the peculiar combinations and the novel construction, arrangement, and adaptation of parts, all as more fully hereinafter described and claimed, and illustrated in the accompanying drawing, which forms a part of this specification, and in which—

A designates an axle, and B the car-wheels, of any approved construction.

C is a box or case, constructed, preferably, of two like parts, each provided with flanges *c*, through which suitable securing means—as the bolts *a*—pass, to hold the two parts together. The space around the axle within this case is filled with the rolls D, extending the whole length thereof. At each end of the box, upon the inner side thereof, I form an annular groove, *b*, in which is placed a hardened-steel washer, E, to take the wear off the ends of the rolls, the ends of the rolls for two or three inches being made as hard as fire and water will make them. This box C, I prefer to make in two parts, so that it can be applied to or be taken off the axle without removing the wheels; but it is evident that its construction may be varied in numerous ways without departing from the spirit of my invention.

F is a casting to which the truck-frame and springs are designed to be securely fastened.

G are eyes at each end of the casting, and preferably formed integral therewith. These eyes receive the axle, as shown in the drawing, and upon their outer faces are formed with an annular groove, *g*, in which work freely the balls H, which, coming in contact with the inner surface of the wheel-hub, prevent too much lateral motion of the axle.

Instead of forming the eyes G integral with the casting, I may sometimes form a half of each eye separate therefrom and bolt it thereto, so that the casting may be removed or put on, when desired, without removing the wheels.

I are transverse rolls arranged between the casting and the top of the case or box to allow the box and axle to work freely under the load. The casting is sometimes formed with a depending flange, *f*, and the case with a flange, *i*, to guide the rollers, as shown in the drawing.

K is a lug, formed integral with the casting F at the center of its length and extending down to the side of the case. To the upper half of the case are cast or rigidly secured the lugs L, which extend down one upon each side of the lug K, and M are spiral springs arranged, as shown, one upon each side of the lug K and between said lug and the lugs L. These springs serve to hold the box or case containing the rolls D in the center of the axle. The object of these springs and the

transverse rolls I is to allow the box or case and the rolls D to go with the axle endwise without the axle slipping endwise through the rolls.

What I claim as new is—

1. The combination, with the axle, the surrounding case formed with ends embracing the axle, and the long rolls therein around said axle, of a hardened-steel washer within said case between the ends of said case and the ends of the roll to take the end-thrust of the rolls, substantially as described.

2. The combination, with the axle and the endwise-movable case carrying the long rolls and surrounding the axle, of the casting likewise movable on said axle and designed to support the load, substantially as described.

3. The combination, with the axle, the surrounding case, and the long rolls, of the casting and the transverse rolls arranged between said case and casting, substantially as and for the purpose specified.

4. The combination, with the axle and wheels, of the casting designed to support the load, and provided with eyes surrounding the axle, and the balls arranged between said eyes and the inner faces of the wheels, substantially as and for the purpose specified.

5. The combination, with the axle, the surrounding case and the long rolls, of the casting designed to support the load, and springs arranged to keep said case in the center of the axle, substantially as described.

6. The combination, with the axle, the surrounding case, the long rolls, and the casting designed to support the load, of the springs arranged as described, and the transverse rolls between said case and casting, substantially as and for the purpose specified.

7. The combination, with the axle, the endwise-movable case, the long rolls, and the endwise-movable casting designed to support the load, of an elastic connection between said case and casting, transverse rolls between the case and casting, and the balls H, all substantially as and for the purpose specified.

In testimony whereof I affix my signature, in presence of two witnesses, this 14th day of September, 1887.

WILLIAM S. SHARPNECK.

Witnesses:
W. W. DEXTER,
HUGO W. C. MARTIN.