

(No Model.)

2 Sheets—Sheet 1.

C. M. & R. M. WOOD.
CAR AXLE BOX.

No. 273,928.

Patented Mar. 13, 1883.

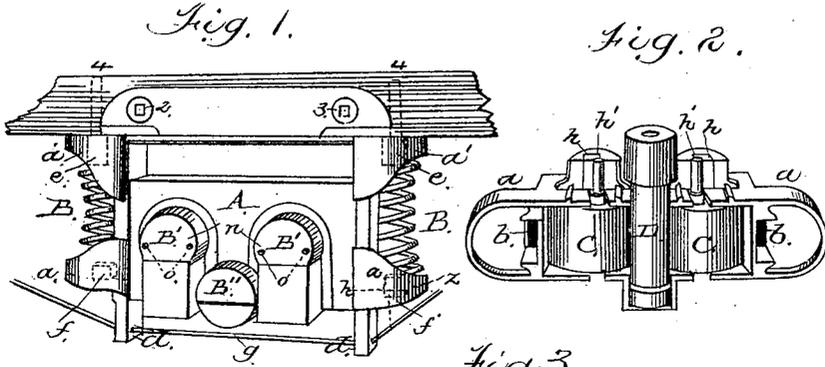


Fig. 3.

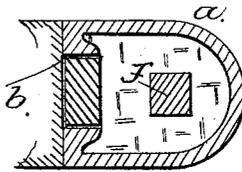


Fig. 4.

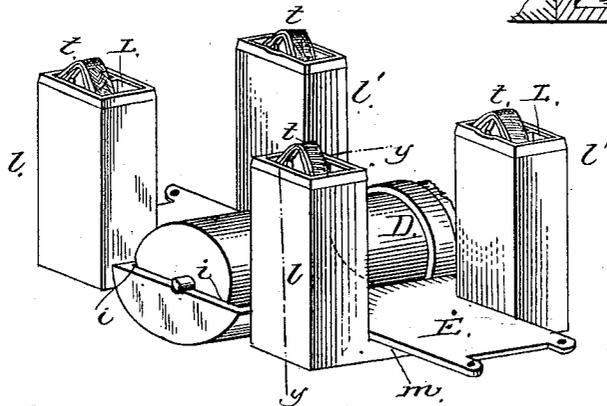


Fig. 5.

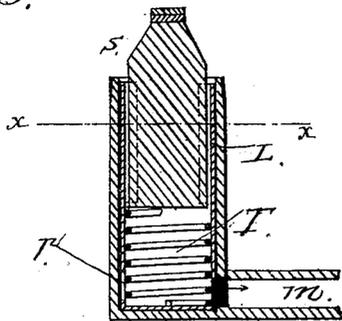
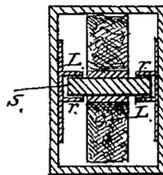


Fig. 6.



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Fig. 7.

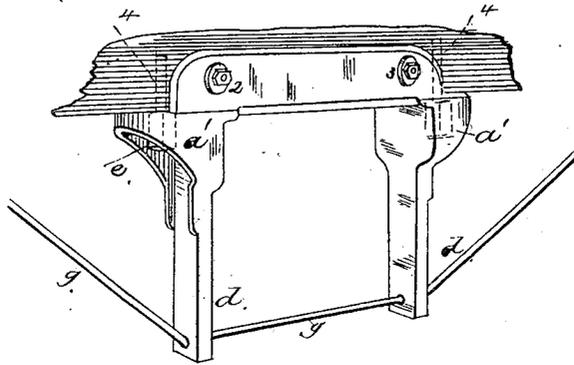


Fig. 8.

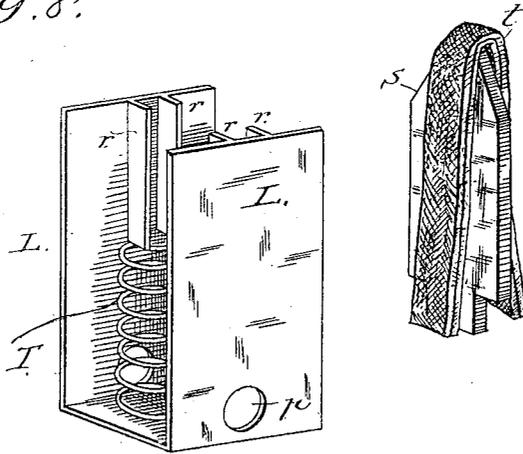
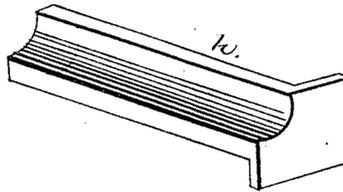


Fig. 9.



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UNITED STATES PATENT OFFICE.

CALVIN M. WOOD AND ROLDO M. WOOD, OF HEALDSBURG, CALIFORNIA.

CAR-AXLE BOX.

SPECIFICATION forming part of Letters Patent No. 273,928, dated March 13, 1883.

Application filed February 8, 1883. (No. model.)

To all whom it may concern:

Be it known that we, CALVIN M. WOOD and ROLDO M. WOOD, of Healdsburg, in the county of Sonoma and State of California, have invented a new and Improved Car-Axle Box; and we hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of our specification, in which—

Figure 1 is a perspective view of the axle-box. Fig. 2 is a perspective view, looking into the housing, and showing the axle and anti-friction rollers. Fig. 3 is an enlarged section on $z z$ of Fig. 1. Fig. 4 is a perspective view of the oil-cups and supporting-plate. Fig. 5 is a vertical section on line yy of Fig. 4. Fig. 6 is a horizontal section on line xx of Fig. 5. Figs. 7, 8, and 9 are details to be referred to hereinafter.

Our invention relates to that class of axle-boxes wherein the axle has a bearing against anti-friction rollers, and is an improvement on the invention covered by Letters Patent issued to us November 9, A. D. 1880, and No. 234,159.

Our invention consists, first, in a combination of devices whereby the axle-box is allowed a limited amount of vibration, to compensate for the inequalities of the track, and yet maintain the bearing-lines of the axle in a proper relative position against the anti-friction rollers; second, in an improved removable bearing for the journals of the anti-friction rollers; third, in the details of construction of the lubricating devices, as will be hereinafter fully described, and specifically pointed out in the claims.

In order that those skilled in the art may make and use our invention, we will proceed to describe the manner in which we have carried it out.

In the said drawings, A is the casing of the axle-box, provided at its ends with projecting flanges $a a$, to form seats for springs B, through the medium of which the car-body is sustained. In front and rear the casing or housing A is provided with boxes $B' B' B''$, in which rest the journals of the anti-friction rollers C C and the axle D, all of said boxes being dust-proof. The bearing-lines of the axle against the rollers C C are in planes radial from the axle and passing through the centers of the rollers, as

recited in our patent before referred to. Close against the end of the housing A, in the projecting flanges $a a$, are cut openings $b b$, for the purpose of receiving the downwardly-projecting legs $d d$ of the pedestal. The difference between the area of openings $b b$ and the cross-sectional area of the legs d is about half an inch in each dimension. This variance of the areas of the openings b and legs d allows the housing A to maintain its horizontal position, and yet let the legs of the pedestal vary from a vertical position. As by this means the friction-rollers always maintain the same relation to the axle, the wear is equally and perfectly maintained on both rollers.

In securing the pedestal to the frame of the car we pass bolts 2 3 from front to rear of the plate of the pedestal, and pass upwardly, through holes made for the purpose in the flanges or ears $a' a'$, bolts 4 4, as additional securing devices. The heads e of the bolts 4 4 are made of considerable length, and, projecting downwardly from the center of flanges $a' a'$, are made to pass within the upper ends of springs B and hold them in place at the top, while studs f , cast on the upper faces of flanges $a a$, hold the lower ends of the springs. Braces $g g$ extend from the lower ends of legs d to the car-frame and steady and sustain said legs. The car-body rides upon springs B B, and through said springs the casing A is enabled to change position without affecting injuriously the successful practical operation of the devices. The boxes $B' B'$, which bear the journals of the anti-friction rollers C C, are provided with removable bearings h , which are inserted in sockets h' in said boxes, on one side of a vertical central line, so as to receive the diagonal strain imparted from the axle. These bearings h are made as shown in Fig. 8, being rectangular at three edges, and the fourth edge or corner planed into a semi-cylindrical socket to receive the journal of the anti-friction rollers.

There is only required, in our construction of axle-box, lubrication for the journals of the anti-friction rollers, and this we accomplish in the following manner: The housing A is closed at its bottom by a plate, E, which has a central depression, i , to fit the end of the axle D,

and this plate bears four oil cups or wells, *l l'*, which, when the plate *E* is in place, project upwardly and fit snugly against the lower faces of boxes *B' B'*. Beneath plate *E*, and passing across it, are conduits *m m*, which connect the bottoms of each pair of oil-wells from front to rear, so that the filling of the front well also fills the rear one. The faces of the boxes *B' B'* are covered by plates *n n*, secured by screws *o o*, and by removing these plates the oil can be poured into the front or outside boxes.

In order to feed the oil in the wells *l l'* to the journals of rollers *C C*, we provide what we denominate a "spring-puppet feeding device," constructed so as to prevent the oil from being violently thrown or agitated by the vibration of the car. Within each oil-well *l l'* is placed a sheet-metal lining, *L*, (see Fig. 8,) having openings *p* near its bottom and easily removable when required. The inner sides of the lining *L* are provided with vertical guides *r r*, in which is placed a sliding puppet, *s*, across the head of which are secured a series of strips of felt, *t t*, or equivalent material, and beneath said puppet *s* is a spiral spring, *T*, whose office is to keep the puppet constantly pressed upward with a yielding elastic pressure, so that its upper end will come in contact with the journals of rollers *C C* and convey to said journals evenly and constantly a portion of the oil which has been absorbed by the strips of felt. The lower ends of the strips of felt *t t* being loose and free to move outwardly from a central line, it is quite obvious that said loose ends will check any tendency of the oil to escape by being thrown upward by the movement of the car.

As plate *E* and its attachments can be withdrawn from housing *A* without disturbing it or any of its contained mechanism, it is quite evident that the lubricating devices can be removed for cleansing or repair very quickly and with a minimum expenditure of labor.

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

1. The axle *D*, arranged with its axis midway between the axes of two friction-rolls, two friction-rollers having their axes in planes radial to the axis of axle *D* and the housing *A*, provided with boxes *B' B' B''*, and flanges or cups *a a*, for the reception of the springs *B*, and provided with openings *b b*, adapted to receive the depending bars or legs *d d*, in combination with the pedestal provided with legs *d d*, having a cross-sectional area less in dimension than the interior dimension of openings *b*, substantially as set forth.

2. In combination with the housing of a car-axle box, a series of oil-wells, *l l'*, arranged in pairs, and each pair connected at their lower ends by conduits *m m*, substantially as specified.

3. A series of oil-receptacles, *l l'*, attached to and in combination with the removable plate *E*, adapted to close the bottom of housing *A*, as described.

4. The axle-box constructed substantially as described, in combination with oil-wells *l l'* and contained spring-puppet oil-conveyers *s s*, substantially as and for the purpose set forth.

5. An axle-box, in combination with an oil well or receptacle, interior removable lining, *L*, provided with openings *p* and vertical guides *r r*, spring *T*, sliding puppet *s*, and strips of felt *t t*, having loose or flowing ends, all constructed, arranged, and operated as described.

6. In an axle-box, the removable bearings *h*, having three rectangular edges, and the fourth provided with a groove to receive the journal, as set forth.

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Witnesses:

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 JNO. M. HERRON.