

(No Model.)

W. A. McGUIRE & M. G. HUBBARD, Jr.
CAR TRUCK.

No. 580,951.

Patented Apr. 20, 1897.

Fig. 1.

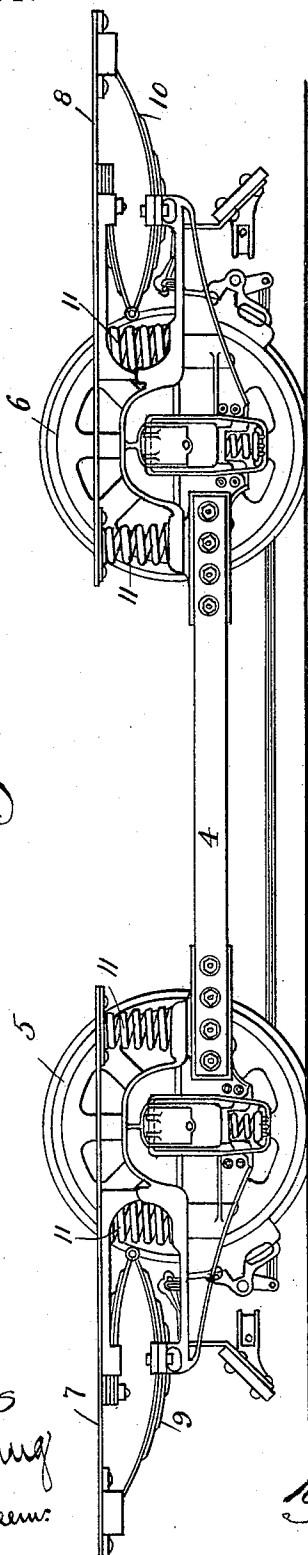


Fig. 3.

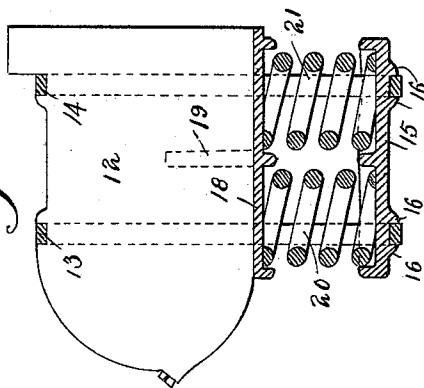
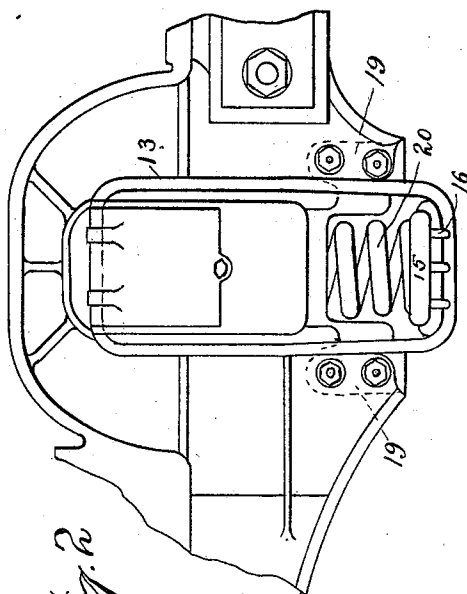


Fig. 2.



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UNITED STATES PATENT OFFICE.

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PLACE.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 580,951, dated April 20, 1897.

Application filed June 8, 1895. Serial No. 551,837. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM A. MCGUIRE and MOSES G. HUBBARD, Jr., citizens of the United States, and residents of the city of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation. Fig. 2 is an enlarged detail, being an end view of one of the journal-boxes and adjacent parts. Fig. 3 is a vertical section of the parts shown in Fig. 2.

Our invention relates to car-trucks; and it consists of an improved method of construction whereby the truck-frame is cushioned from shock both laterally and vertically.

It further consists of an improved method of construction whereby the car is lowered and yet the truck-frame is fully cushioned upon the axle journal-boxes.

That which we regard as new will be set forth in the claims.

In the drawings, 4 indicates the truck-frame, of which 5 6 indicate the wheels.

7 8 indicate that portion of the truck which directly supports the car-body.

9 10 11 indicate springs.

12 indicates one of the axle journal-boxes, which is in general of the usual shape and is fitted into a suitable opening in the truck-frame.

13 14 indicate links supported by the journal-boxes a short distance apart, which links are free to swing laterally.

15 indicates a plate or seat which is supported by the links 13 14, as best shown in Fig. 3, suitable lugs 16 being provided on the under side of said seat to properly confine the links and prevent said seat from slipping out of position.

18 indicates a plate or cap similar in some respects to the plate or seat 15, the cap 18 being secured to the truck by flanges 19, which rise from its upper side, as indicated by dotted lines in Figs. 2 and 3.

20 21 indicate spiral springs arranged side by side between the seat 15 and cap 18, as shown in Fig. 3.

We desire to have it understood that we do not confine ourselves to any specific form of seats and caps for the springs.

Our invention is applicable to all railway-cars, but is especially designed for electric-motor cars. Heretofore there has been no satisfactory method of mounting the truck-frame upon the axle journal-boxes, because the springs interposed between the tops of the axle journal-boxes raised the car too high from the track, and also such construction provided only against vertical jars, while it is nearly if not quite as necessary to cushion against lateral as against vertical jars, even on a straight track. On curves, however, a lateral cushion is even more important than a vertical one, as it relieves the severe shock of striking curves and facilitates the passage of the car around curves by permitting the axles to assume a partly-radial position. To get this lateral cushion on the truck-frame, we support it from the axle journal-boxes on the swinging links 13 14, which cushion the truck and car against lateral jars. For the purpose of cushioning against vertical jars we interpose between said links 13 14 and the cap 18, which is connected to the truck-frame, a series of spiral springs 20 21, said springs being supported upon the swinging links 13 14, the truck-frame being supported upon the springs 20 21.

We prefer to use spiral springs 20 21, but instead of such springs rubber, elliptical, or other suitable springs may be used. When spiral or rubber springs are used, if desired, they may be located either on each side of the axle journal-boxes on a line practically parallel with the side of the truck-frame or they may be arranged directly under the journal-boxes on a line practically parallel with the axle, as shown in Figs. 2 and 3, or any other suitable arrangement of said springs may be made.

It will be observed that the springs 20 21 are arranged below the axle journal-boxes and that they are supported by the swinging links 13 14, the object being to lower the car-body, which is an important feature of our invention; but, so far as this feature alone is concerned, instead of supporting them upon the swinging links, as illustrated, such springs may be supported below the axle journal-boxes by any other suitable means. We prefer the swinging links, however. The object, however, being to lower the car-body and for

that purpose to get the springs for cushioning the truck-frame upon the axle journal-boxes located below instead of above said journal-boxes, we do not confine ourselves to the particular construction shown for securing that result. By thus placing the supporting-springs below the journal-boxes we can save in most cases all and in other cases nearly all the full height of said springs in the distance from the track to the car-sills; also, the cap 18 being firmly fitted to the truck-frame below the axle journal-boxes, the depth of the truck-frame over the journal-boxes can be reduced and the car-body is further lowered, the fulcrum being removed to practically the center of the axle, thereby strengthening the frame at its weakest part, enabling the truck to carry a greater proportion of the load upon the extreme ends of the truck-frame, which aids materially to prevent objectionable longitudinal oscillation.

That which we claim as our invention, and desire to secure by Letters Patent, is—

1. The combination with a car-truck frame, and journal-boxes, of two laterally-swinging links suspended from said journal-boxes and two springs carried by said links and arranged parallel with the axle for supporting the truck-frame, and seats and caps for said springs, substantially as described.

2. The combination with a truck-frame constructed to embrace the journal-boxes, of the journal-boxes, two springs arranged parallel with each axle for said truck-frame to cushion said frame against vertical jar, and laterally-swinging links in which said springs are carried for cushioning said frame against lateral jar, and seats and caps for said springs, substantially as described.

3. A car-truck frame elastically mounted on the axle journal-boxes by means of springs located below and supported by laterally-swinging links on said journal-boxes, and acting upon the under side of said truck-frame the said springs being provided with seats and caps, substantially as and for the purpose specified.

4. In a car-truck, the combination of spring-seats located below the axle journal-boxes and supported from said journal-boxes by laterally-swinging links, springs mounted on said spring-seats, caps for said springs and a truck-frame so mounted on said springs that the upper or top portions of said springs will act upon the under side of said frame to support it, substantially as described.

5. In a car-truck, the combination with the truck-frame, the axle, and the journal-boxes, of a plurality of springs arranged parallel with the axle for elastically mounting the truck-frame upon the journal-boxes, said springs being located below said journal-boxes, a plurality of laterally-swinging links by which said springs are suspended from the journal-boxes, and seats and caps for said springs, substantially as described.

6. In a car-truck, the combination with the

axle journal-boxes, and the laterally-swinging links, of the springs for elastically mounting the truck-frame upon the journal-boxes, said springs being located below said journal-boxes and supported therefrom by said laterally-swinging links, and seats and caps for said springs, substantially as described.

7. In a truck for four-wheeled motor-cars, a truck-frame having openings therein to receive the axle journal-boxes, spring-seats attached to said frame on the underside thereof, laterally-swinging links mounted on said journal-boxes, spring-caps mounted on said swinging links, and springs interposed between said spring-caps and said spring-seats for supporting said truck-frame, substantially as described.

8. In a truck for four-wheeled cars, a truck-frame provided with openings for receiving the axle journal-boxes, spring-caps firmly fitted into the openings in said frame below the journal-boxes, and springs located below and supported from said journal-boxes by laterally-swinging links for cushioning the truck-frame, substantially as described.

9. In a car-truck having axle journal-boxes, a spring-seat under each axle journal-box, two springs mounted in each seat, two swinging links for suspending each spring-seat in its journal-box, and a spring-cap secured to the truck for receiving each of said sets of springs, in combination with a truck-frame mounted upon said spring-caps, said truck-frame being rigidly attached to the car-body longitudinally and circumferentially, substantially as described.

10. The combination with a truck-frame, and car-body-supporting springs, of journal-boxes, swinging links suspended from said journal-boxes, and springs supported on a bearing carried by said links and bearing against a plate secured to said truck-frame, substantially as described.

11. The combination with a truck-frame mounted upon journal-boxes by laterally-swinging links, and intervening springs supporting said truck-frame upon said links, and seats and caps for said springs, of car-body-supporting springs mounted upon bearings carried by said truck-frame, and a top frame mounted upon said latter springs for receiving the car-body, substantially as described.

12. The combination with a truck-frame, the axle journal-boxes, the laterally-swinging links, and springs located intermediate said journal-boxes and links and acting upon the under side of the truck-frame, and seats and caps for said springs, of springs mounted upon bearings carried by said truck-frame, and a top frame mounted upon said upper springs for receiving the car-body, substantially as described.

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