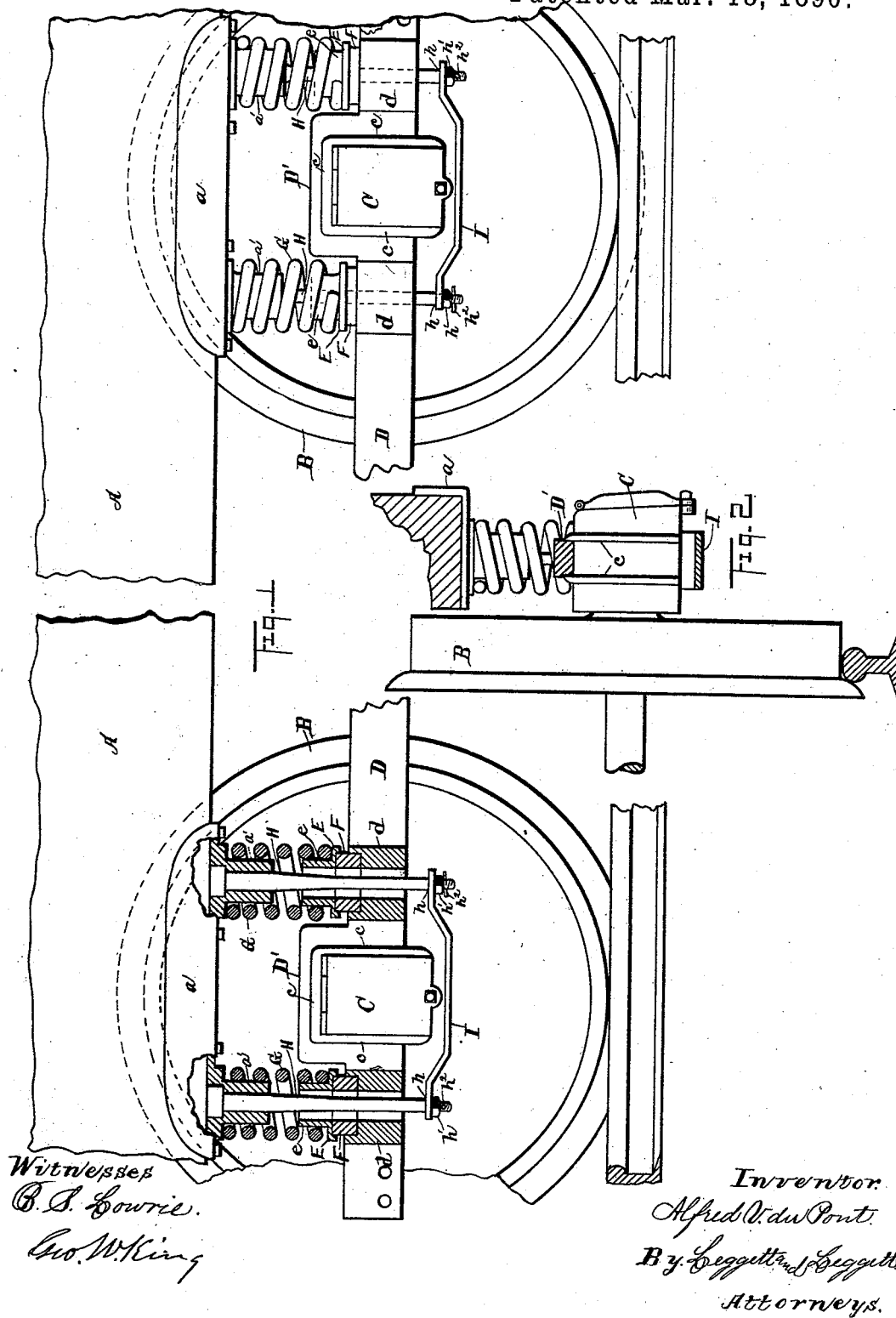


(No Model.)

A. V. DU PONT.  
STREET CAR RUNNING GEAR.

No. 423,470.

Patented Mar. 18, 1890.



Witnesses  
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# UNITED STATES PATENT OFFICE.

ALFRED V. DU PONT, OF LOUISVILLE, KENTUCKY.

## STREET-CAR RUNNING-GEAR.

SPECIFICATION forming part of Letters Patent No. 423,470, dated March 18, 1890.

Application filed October 24, 1889. Serial No. 327,974. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED V. DU PONT, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Running-Gear for Street-Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention relates to improvements in running-gear for street-cars; and it consists in certain features of construction and in combination of parts hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a side elevation, partly in section. Fig. 2 is an elevation in transverse section on line *x x*, Fig. 1.

A represents the body of the street-car, to which are attached angle-plates *a*. The lateral legs of these plates underlap the car-sills, to which the plates are bolted.

B are the car-wheels, and C the journal-boxes for the car-axles. On either side of the car is a rigid side bar D, extending from one journal-box to the other, the end sections of these side bars being bent approximately into inverted-U shape, constituting yokes D', that embrace with an easy fit the respective journal-boxes, the latter having external ribs *c c*, extending along the sides and top thereof, between which pair of ribs the respective yokes fit easily. On either side and close to the journal-boxes the side bars are swelled out laterally in rounded sections *d d*, these rounded sections being countersunk from the top to form seats for rubber rings or springs F. The extremes *d' d'* of the side bars extend some little distance beyond the outer sections *d d* thereof, and these extreme sections may be provided with bolt-holes, as shown, for attaching, for instance, brushes or brooms for sweeping the track, or other device or mechanism, if need be. Heretofore such brushes or brooms were usually attached, for want of better support, to the car-body or to an attachment thereof, and, as the car-body loaded and unloaded was likely to vary some inches in vertical distance from the track, and, whether loaded or unloaded, was subject to rocking, swaying, and tilting to a

considerable extent, the car-body was not a success as a support for broom, brush, or other device that required to be held with anything like precision relative to the track. The extremes of the side bars, being always the same distance from the track, are well adapted to support brushes, brooms, or other devices that require a more stable support than is furnished by the erratical car-body. Next above and resting on rubber rings F are disks or caps E, each cap having an outwardly-projecting centrally-located hollow boss *e*.

G are spiral springs, the lower ends thereof resting on the respective disks E, bosses *e* fitting loosely inside the springs to serve as guides for the latter. The upper end of these springs abut the under sides of the plate *a* aforesaid, the latter having depending bosses *a'*, that fit loosely inside the upper ends of these springs and serving as guides for the springs.

H are vertical rods or steady-pins, the upper sections thereof being of large size, the same fitting snugly in the bore of bosses *a'*. The sections of these rods next below bosses *a'* are of the inverted conical variety, whereby maximum strength is combined with minimum lightness, and the reduced sections of the rods next below the conical sections thereof extending down through the large central openings, respectively, in bosses *e*, rubber rings F, and sections *d* of the side bars, the comparative size of these openings and the reduced sections of the rods being such that the rods are supposed never to come in contact with these members *d*, *e*, and F. Below the side bars each pair of rods is connected by means of straps I, the latter extending underneath the intermediate journal-box; but the strap is not supposed to come in contact with the journal-box except, perhaps, in case of violent jolting of the car. Rods H have shoulders *h*, against which straps I are rigidly secured by means of nuts *h'*. Usually pins *h<sup>2</sup>* are provided to prevent the possibility of these nuts losing off. With such construction, the side bars couple the journal-boxes on either side of the car, so that they support each other, more especially against longitudinal strain, and a blow delivered on the one wheel—as, for instance, in running over an

obstruction—is sustained about equally by each box on the same side of the car.

It is desirable in street-cars to have no continuous metal attachment from running-gear to car-body, otherwise the metallic ring of the wheels will be transmitted to the car-body, resulting in excessive, disagreeable, and unnecessary noise inside the car. With the construction shown the metal attachments are entirely disconnected by means of the rubber rings F aforesaid, by reason of which the noise from the running-gear is reduced to a minimum inside the car.

In the matter of convenience I may remark that by removing pin  $h^2$  and nuts  $h'$  the car-body may be lifted from the trucks, after which the side bars may be lifted from the journal-boxes, thus separating the parts and leaving each car-axle and its wheels free, and the parts may be re-assembled with equal facility.

Heretofore jointed side bars have been used for the purpose; but the joints thereof were subject to wear, in consequence of which the joints would become loose and would not hold the parts with sufficient accuracy; also, the journal-boxes coupled with such jointed side bars would, in case the springs were of unequal tension, cant forward or rearward, as the case might be, thereby affecting the alignment of the axle. With my improved rigid side bars the journal-boxes always maintain their proper position and the axles remain always parallel.

What I claim is—

1. In running-gear for street-cars, the com-

bination, with side bars each having integral yokes for the reception of the journal-boxes of one side and the journal-boxes resting within and supported solely by said yokes, of the rubber springs resting on the side bars on opposite sides of each yoke, the metal springs supported by said rubber springs, the steady-pins depending from the car-body and passing loosely through the metal and rubber springs, and the yokes connecting the lower ends of each pair of steady-pins, substantially as set forth.

2. In running-gear for street-cars, in combination, journal-boxes, side bars connecting each pair of boxes, such side bars having integral yokes adapted to directly embrace and rest on the respective boxes, each side bar on either side of the respective journal-boxes having depressed seats for rubber rings, caps resting on the rubber rings, spiral springs resting on the respective caps, the upper ends of the spiral springs engaging seats under the car-body, depending rods rigidly connected with the car-body attachments, such rods extending, without contact, through holes in the caps, rubber rings, and side bars, each pair of depending rods being connected by straps, the latter extending under the intervening journal-box, substantially as set forth.

In testimony whereof I sign this specification, in the presence of two witnesses, this 30th day of July, A. D. 1889.

ALFRED V. DU PONT.

Witnesses:

HENRY R. DU PONT,  
JOS. A. RICHARDSON.