(No Model.)

L. PFINGST.

TRUCK FOR ELECTRICALLY PROPELLED VEHICLES.

No. 474,403. Patented May 10, 1892.

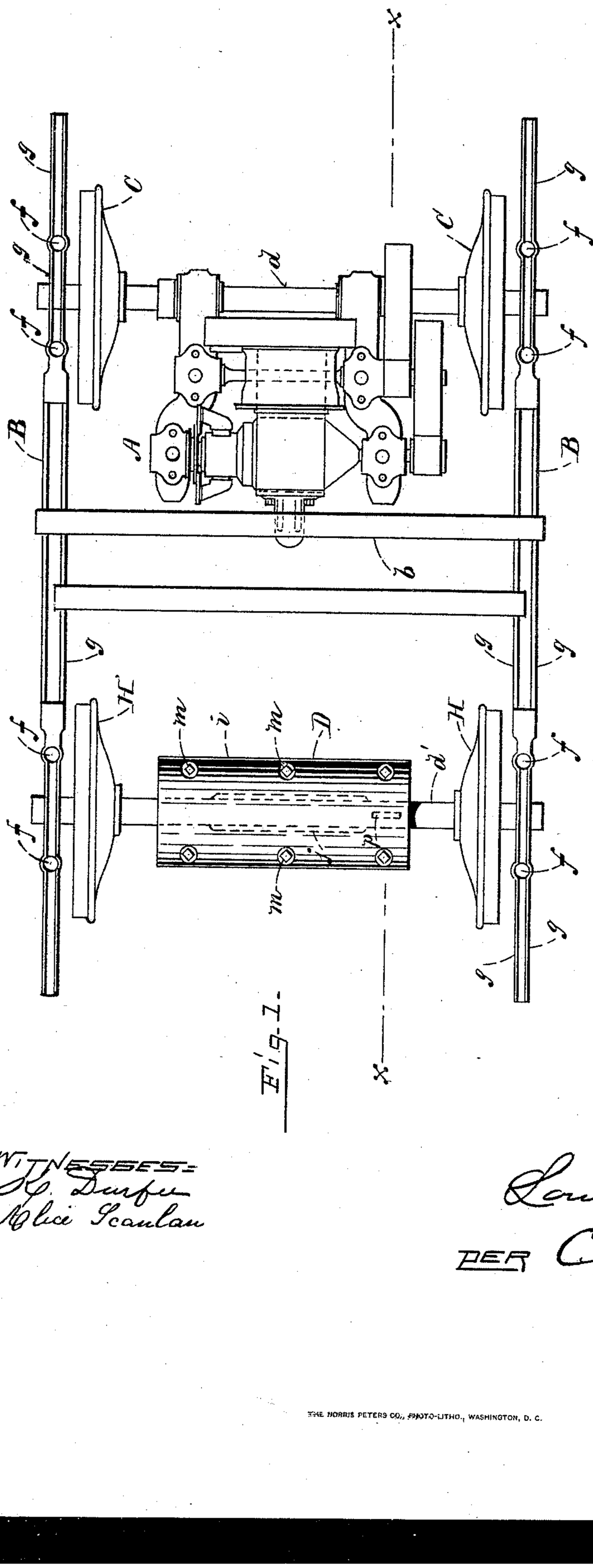

FIG. 1.

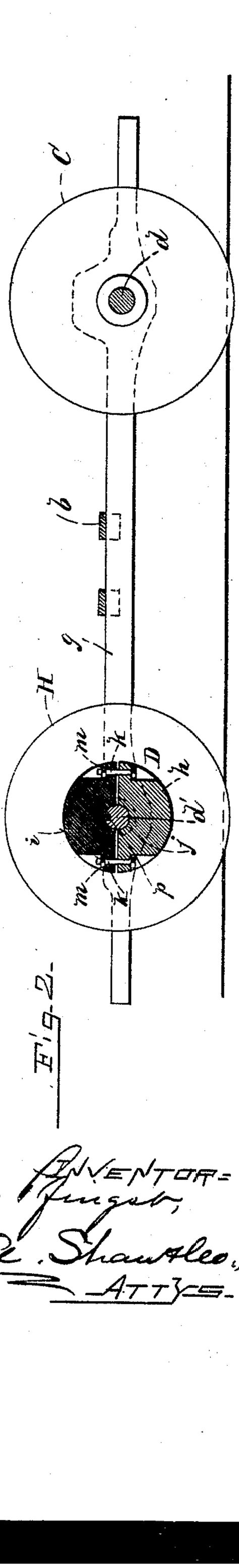

FIG. 2.

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LOUIS PFINGST, OF BOSTON, MASSACHUSETTS.

TRUCK FOR ELECTRICALLY-PROPELLED VEHICLES.

SPECIFICATION forming part of Letters Patent No. 474,403, dated May 10, 1892.

Application filed October 6, 1891. Serial No. 407,893. (No model.)

To all whom it may concern:

Be it known that I, LOUIS PFINGST, of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Trucks for Electrically-Propelled Vehicles, of which the following is a description sufficiently full, clear, and exact to enable any person skilled in the art or science to which said invention appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of my improved truck, showing the electric motor in position; and Fig. 2, a vertical longitudinal section of the same, the motor being removed.

Like letters of reference indicate corresponding parts in the different figures of the drawings.

Electrically-propelled cars mounted on a single truck having four wheels are ordinarily supplied with two motors respectively employed for driving them in opposite directions, and which are severally supported on the truck adjacent the axle, to which they are geared or otherwise connected.

It has been found necessary to employ two motors disposed as described, in order to balance the truck, as where a single motor is employed its great weight frequently causes the wheels of the free axle to leave the track. This is particularly the case when said free axle is in the lead. To weight the truck adjacent said free axle in order to counterbalance the motor is disadvantageous in that a greatly-increased friction-bearing is produced on the axle. To weight the car at this point, besides increasing the friction of the bearings, so compresses the supporting-springs as to render them practically of little use for cushioning the car-body.

My invention is designed especially to supply a counterbalancing device whereby a single motor can be employed without the attendant objections recited.

In the drawings, A represents an electric motor of the ordinary construction, which is supported by a cross-bar *b*, mounted on the side bars B of the truck-frame, and is geared to the axle *d*, bearing a set of wheels C, the side bars B resting on the boxes, in which said axles are journaled in the ordinary manner. These side bars I construct from a single metallic bar broadened slightly between the axles *d d'*, and provided over the journal-boxes of said axles with two sockets *f f*, which are adapted to receive the lower end of the car-springs. These side bars are furthermore provided at each end with vertical flanges or fins *g*, which greatly stiffen said bars and enable a comparatively thin flat material to be employed for the body of the bar. The frame as thus constructed is very light, and the sockets *f* enable the springs to be easily mounted thereon, avoiding the necessity of employing other fastening for said springs.

On the axle *d'* I mount a detachable weight or "dummy motor" D, which serves to counterbalance the weight of the motor A on the truck. This weight D is constructed in two sections *h i*, approximately semicircular in cross-section and provided centrally and longitudinally with a groove adapted to receive the axle *d'*. The sections are chambered interiorly in the axle-grooves at *j*, so that the bearing of said sections on the axle comes near the ends thereof. The edges of the sections are recessed at intervals and are respectively provided with vertical registering bolt-holes opening into said recesses. Bolts *k* pass through the bolt-holes and nuts *m* are turned thereon, clamping said sections together on the axle. The axle-grooves in the sections are slightly less than semicircular, so that when the sections are in position on the axle a slight take-up space is left between their faces. This enables them to be clamped tightly, overcoming slight malformations in the castings, which might cause them to rattle or jar on the axle were the axle-grooves too large and the faces of the sections in contact.

The axle *d* is provided with a short spline-groove *p*, into which a spline or projection in the axle-groove of the section *i* projects, serving to prevent the weight D from rotating on said axle.

The weight constructed as described may readily be dismounted from the axle when its use is not deemed essential and any size weight may be employed. By use of the weight when the cars going from right to left, as viewed in Fig. 1, the wheels H are prevented from being jumped from the track when starting the car. By disposing said weight on the rotat-

ing axle the work of the motor is not increased in driving the car after it is started.

Where more than one truck is employed on the car the weight or dummy motor may be applied to the non-motor-supporting truck with like effect.

Any suitable means other than the spline may be employed for preventing rotation of the weight on the axle.

Having thus explained my invention, what I claim is—

1. In an electrically-propelled vehicle, a weight mounted on a free axle of the vehicle-truck, substantially as described.

2. In an electrically-propelled vehicle, a weight detachably mounted on the free axle of the motor-truck to counterbalance the weight of the motor at the companion axle, substantially as specified.

3. In an electrically-propelled vehicle, a weight secured to a free axle of the truck and having bearing-points adjacent the axle-boxes, substantially as described.

4. The axle d', in combination with the sectional weight D, detachably mounted thereon and fitted to rotate therewith, substantially as specified.

5. The weight D, comprising the sections h i, chambered at j and provided with an axle-groove registering with said chamber, said sections being adapted to be secured together on a car-axle, substantially as specified.

6. The axle d', provided with the spline-groove p, in combination with the weight D, mounted on said axle and comprising the semicircular sections h i, one of said sections being provided with a spline fitted to enter said groove, substantially as described.

7. In a device of the character described, a truck and an electric motor mounted thereon and actuating one axle of said truck, in combination with a weight detachably secured on a companion truck-axle and adapted to rotate therewith, substantially as and for the purpose set forth.

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