(No Model.)

# J. H. GRAHAM.

## RADIAL CAR TRUCK.

No. 555,857. Patented Mar. 3, 1896.

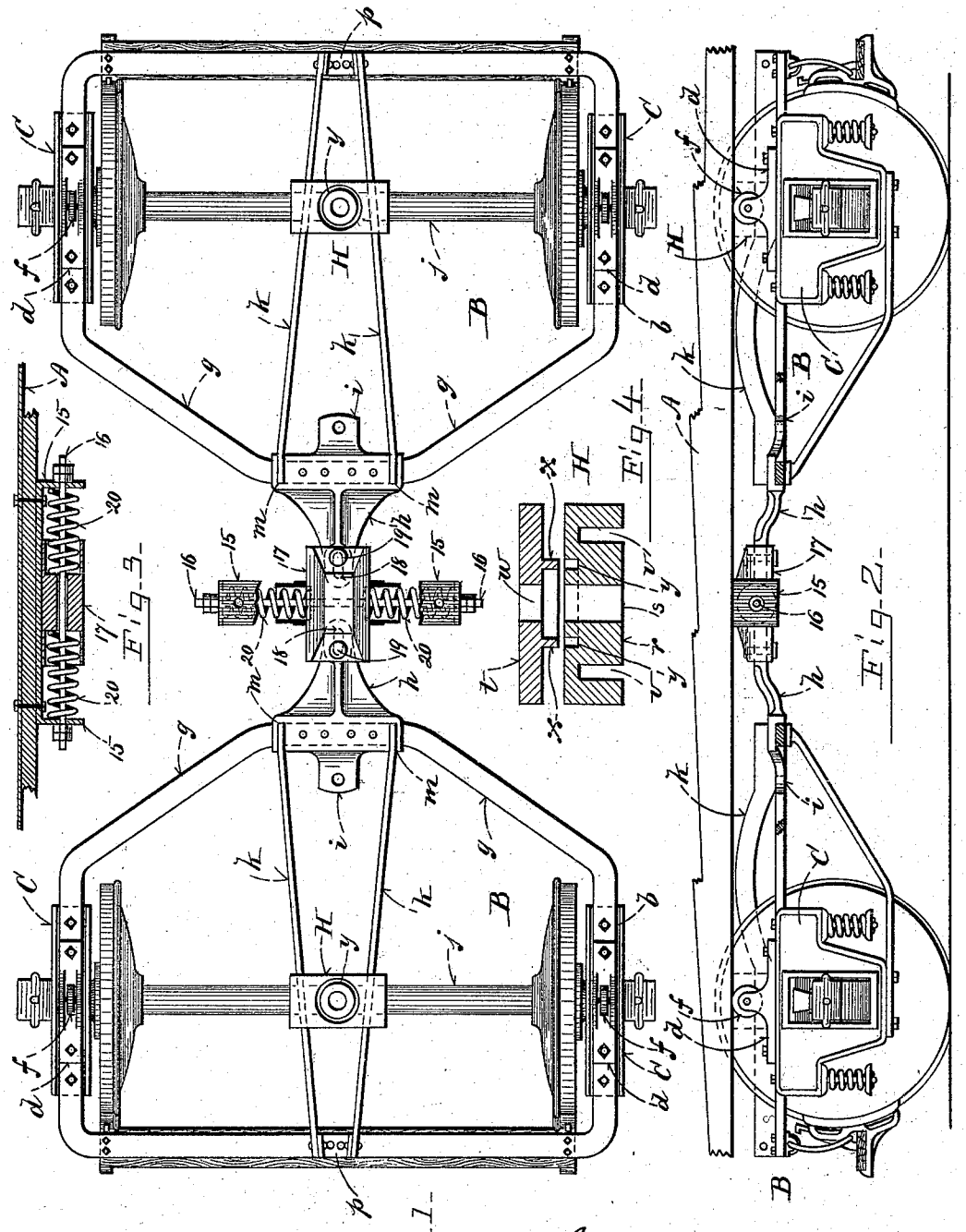

Fig. 1.



Fig. 2.



Fig. 3.



Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## RADIAL CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 555,857, dated March 3, 1896.

Application filed January 4, 1894. Serial No. 495,660. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN H. GRAHAM, of Boston, in the county of Suffolk, State of Massachusetts, have invented certain new and useful Improvements in Radial Car-Trucks, 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 car-truck; Fig. 2, a side elevation of the same; Fig. 3, a side elevation, partly in section, of the tension mechanism; and Fig. 4, a vertical transverse section, enlarged, showing the king-bolt castings.

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

My invention relates especially to a radial car-truck designed particularly for use with electrically-propelled street-cars; and it consists in certain novel features hereinafter fully set forth and claimed, the object being to produce a simpler, cheaper, and more effective device of this character than is now in ordinary use.

The nature and operation of the improvement will be readily understood by all conversant with such matters from the following explanation.

In the drawings, A represents the body of the car and B the truck-frame. These frames consist of a metallic bar which is bolted into grooves *b* of the spring-supported pedestals C.

Each frame B is mounted on a single axle, only one set of wheels being employed, although two or more sets may be used if desired. Centrally over each pedestal C and on top of the frame-bar B a casting *d* is bolted, in which friction-roll *f* is journaled. The car-body A rests on said rolls.

The main portions of the frames are rectangular, but their inner side bars *g* project centrally into an approximate V shape. At the apex of each frame-bar *g* a goose-neck casting *h* is bolted, from which a lug *i* projects within the frame. The electric motor is supported between said lug and the axle *j*. Arch-bars *k* have their ends *m* dropped into suitable slots in the castings *h*, said bars converging toward the opposite side bar of the frame, where they are bolted at *p*. These bars curve centrally, as shown in Fig. 2, to override the motor. The king-bolt casting H is mounted on the arch-bars vertically above the axles *j*, said casting comprising two members *r t*. (Shown in Fig. 4.) The member *r* is provided with a central opening *s* for the king-bolt and with two slots *v*, which respectively stride the arch-bars *k*. The member *t* is secured to the bottom of the car and is provided with a king-bolt *w*, which enters the opening *s*, and with an annular lug *x*, which enters an annular socket *y* in the companion member. On the bottom of the car-body A (see Fig. 3) an angle-iron 15 is bolted. A rod 16 passes through the pendent ends of said angle-iron. Fitted to slide on said rod is a block 17. The outer ends of the goose-neck castings *h* are slotted longitudinally at 18 and work on pins 19 passing through the block 17. Said block is tensioned against longitudinal movement on the bar 16 by springs 20.

In the use of my improvement the trucks as they pass around the curve of the track act independently, their castings *h* forcing the block 17 in corresponding direction, the springs 20 forcing said castings into alignment again in a manner which will be readily understood without a more explicit description. The block 17, supporting the castings *h*, prevents the truck-frames from tilting or rocking on the axles, said block being connected with the car-body. Said body being mounted by a king-bolt on the truck-frame permits free radial movement of said frames. The friction-wheels *f* relieve this movement.

The trucks as thus constructed are exceedingly simple and light, while having all necessary rigidity or strength.

It is not deemed essential to illustrate the motor, as its operation in driving the axles is well known. It will be understood that this form of truck-frame supported in manner de-

scribed enables a single pair of wheels to be employed where ordinarily at least two sets of wheels are necessary to support the truck.

Having thus explained my invention, what I claim is—

1. The frames, B, provided with the slotted castings, *h*, in combination with the car-body; a spring-tensioned block fitted to slide thereon and connecting said castings.

2. The truck-frame, B, having the offset side bar, *g*, in combination with the arch-bars, *k*, a king-pin casting mounted thereon; and a slotted casting on said offset side bar for pivotally connecting it with the car-body.

3. The combination of the car-body with the spring-pushed block, 17; the truck-frames; the goose-neck castings pivotally connected to said block.

4. The truck-frame, B, having the offset side, *g;* the casting, *h*, secured thereto and provided with the slot, 18; the car-body and spring-tensioned sliding block thereon and a pivot-pin passing through said casting-slot into said block.

5. The combination with the car-body of a rod, 16, supported thereon; a spring-cushioned block fitted to slide on said rod and two truck-frames pivotally connected to opposite sides of said block.

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Witnesses:
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