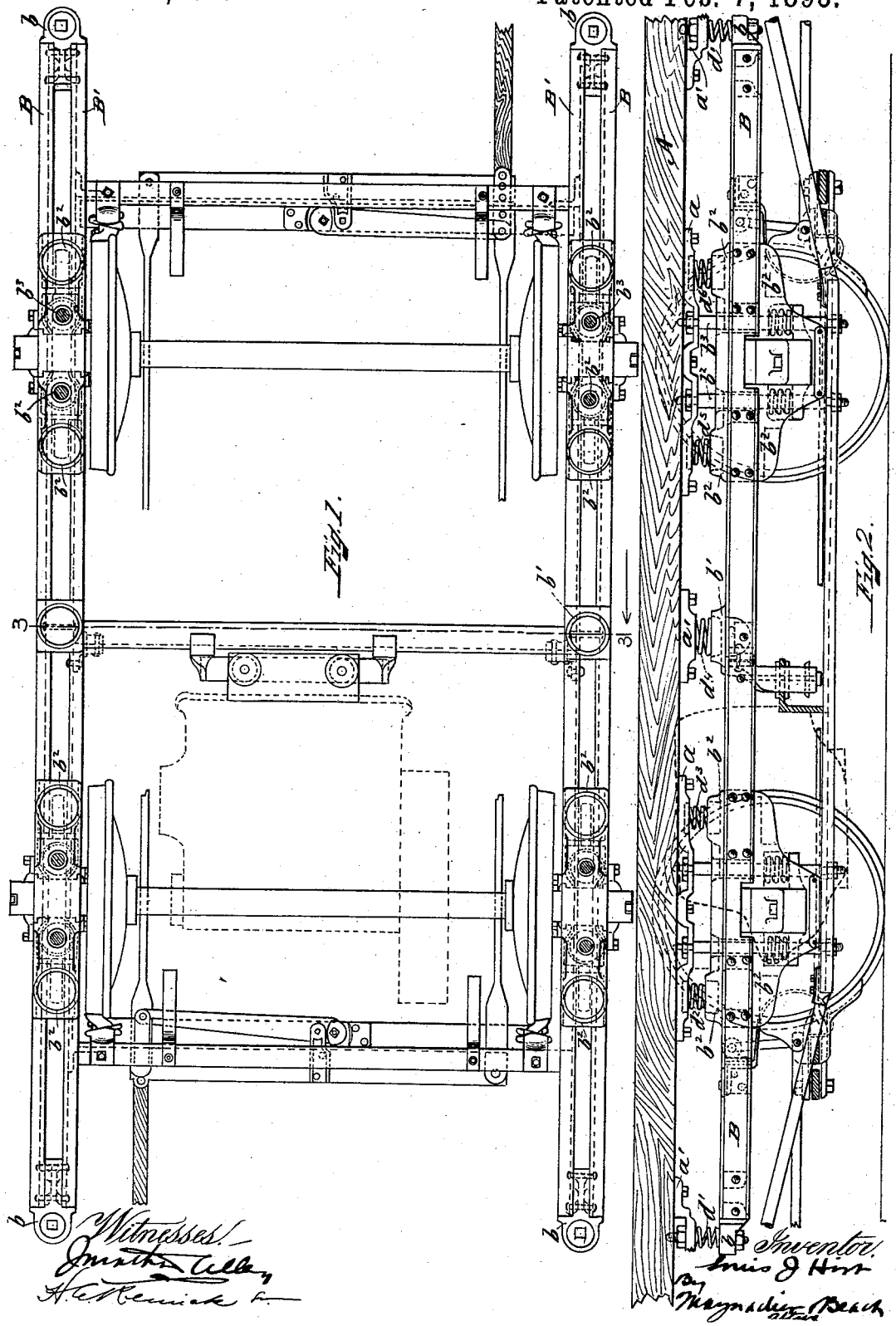
(No Model.) 2 Sheets—Sheet 1.

L. J. HIRT.

STREET CAR.

No. 491,107. Patented Feb. 7, 1893.



(No Model.)

2 Sheets—Sheet 2.

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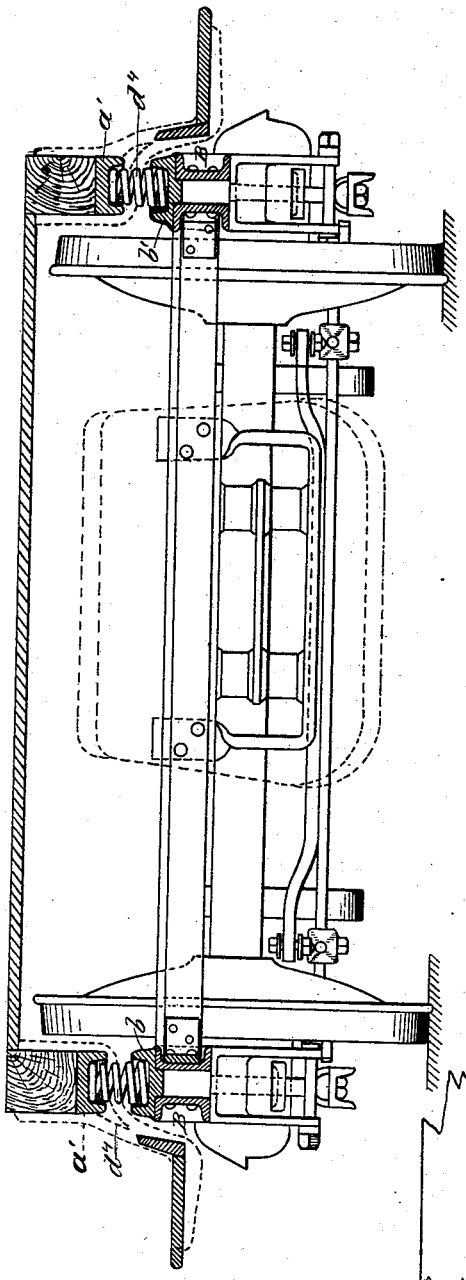

Fig. 3.

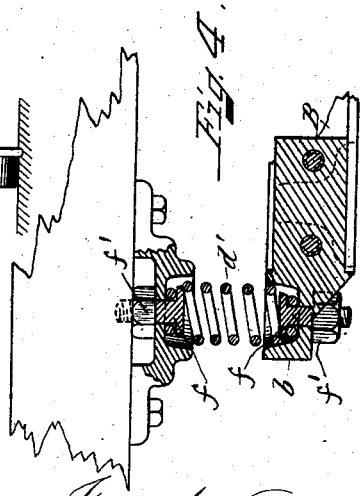

Fig. 4.

Witnesses:
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UNITED STATES PATENT OFFICE.

LOUIS J. HIRT, OF ARLINGTON, MASSACHUSETTS.

STREET-CAR.

SPECIFICATION forming part of Letters Patent No. 491,107, dated February 7, 1893.

Application filed July 25, 1892. Serial No. 441,187. (No model.)

To all whom it may concern:

Be it known that I, LOUIS J. HIRT, of Arlington, in the county of Middlesex and State of Massachusetts, have invented an Improved Street-Car, of which the following is a specification, reference being had to the accompanying drawings, making a part hereof, in which—

Figure 1 is a plan; Fig. 2 a side elevation; and Fig. 3 a section on line 3—3 of Fig. 1; illustrating my invention, and Fig. 4 a detail view of one of the springs and its attaching devices.

One feature of the invention is side bars in pairs provided with recesses on their under sides and pedestals secured between the bars of each pair about the recessed portions.

Another feature is the bars in pairs, pedestal castings secured between the bars of each pair, and spring-cups formed on the upper surfaces of the pedestal castings.

Another feature is the combination of the bars in pairs, pedestal castings secured between the bars, spring cups formed on the pedestal castings, and other spring cups and their shanks, the shanks projecting between the bars and secured to them.

Another feature of the invention is an improved car truck which comprises the combination of sill plates, side bars parallel with the sill plates, pedestal castings secured to the side bars, springs interposed between the pedestals and sill plates, other springs supporting the side bars, and supports upon the axle boxes upon which the latter springs rest.

In the drawings A is the sill of the car body, a the usual sill plates, a' extra sill plates.

B B′ are bars, which are preferably channel bars constituting the side bars of the truck frame. The bars B B′ are connected in pairs by the shanks of the spring cups b b'; and also by the pedestals b^2. These pedestals b^2 their sill plates a, their guide rods b^3, and all the other parts not lettered are of usual construction except that the main casting of the pedestal is formed to receive the channel bars; which are cut away at e over the boxes (to allow play to the boxes.) This cutting away of the channel bars does not weaken the truck frame, because the main casting of each pedestal forms in substance a reinforce to the channel bars about the cut away portion. If they were not cut away the car body would necessarily be somewhat farther above the rails, and it is important to make that distance as small as possible.

The cross connections, the brake mechanism, and the motor are sufficiently indicated in the drawings and need no description as they may be of any suitable construction and their constructional details form no part of my present invention.

The axle boxes G are provided with the steps g g' upon which rest the springs h h' seated in the pedestals. By this arrangement it will be observed, I cushion the truck frame which is desirable for the reason that the motor is generally on that frame and the jarring of the motor is greatly modified.

The guide rods b^2 b^3 are connected to the sill plates a and truss rod H as shown and the springs h h' inclose these rods and are thus kept from displacement.

The end springs d d' are held in their cups by means of screw bolts f and nuts f' as clearly shown in Fig. 4. The other springs d^2 d^3 d^4 d^5 d^6 do not require the connection; but obviously such a connection may be used with them; for example if the springs d^2 and d^6 be thus connected on each side of the car the result will be substantially the same, whether the end springs d d' be thus connected or not; but obviously it is preferable to thus connect the end springs, as the tilting motion up and down is greatest at the ends of the car body; and the purpose of thus connecting the springs is to limit the upward motion by a spring resistance.

My improved car possesses a quality of elasticity which is far superior to any other known to me, and its tilting motion is much less objectionable than heretofore.

My improved truck is the best form of truck known to me for use with two rows of side springs; it also has the great advantages of simplicity, cheapness and marked strength and durability, moreover the spring cups attached to it do a double duty, for they firmly connect the two channel bars as well as serve as spring cups; and the pedestals also do a double duty, namely as pedestals, and also to connect the two channel bars. The truck is specially adapted for electric cars for the reason that the truck frame as well as the car

body is cushioned, thus relieving much of the jolting to which the motor is usually subjected, and at the same time increasing the elasticity of the car.

While it may be said that my invention is an improved car, yet a truck adapted to support the two rows of side springs is a necessary part; and the construction of truck shown is by far the best known to me for practicing my invention; because the spring cups and pedestals form a part of the truck, and the truck and car body are securely connected by the two rows of side springs. Obviously this latter feature of my invention may be used even though none of the springs are secured at both ends, other means being used to prevent the car body from moving too far away from the truck.

What I claim as my invention is:

1. In combination, side bars arranged in pairs, recessed on their under sides to permit vertical play of the axle boxes, pedestals connected to the bars between the bars of each pair about the recessed portions as described.

2. In combination side bars arranged in pairs, pedestals embracing the axle boxes and secured between the bars of each pair and spring cups formed on the upper surfaces of the pedestals.

3. In combination, side bars arranged in pairs, pedestals secured between the bars of each pair, spring cups formed on the pedestal castings and other spring cups and their shanks, the shanks projecting between the bars and secured to them as described.

4. The improved truck which comprises the combination of sill plates, side bars parallel with the sill plates, pedestals secured to the side bars, springs interposed between the pedestals and sill plates; other springs supporting the side bars and supports upon the axle boxes upon which the latter springs rest, substantially as described.

5. In combination a coiled spring reduced in diameter at each end; cups in which each end of the spring is seated; headed bolts projecting through the cups with their heads engaging the small ends of the spring and retaining the ends within the cups, substantially as set forth.

LOUIS J. HIRT.

Witnesses:
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