No. 649,100. Patented May 8, 1900.

S. E. CLARKSON.

CAR TRUCK.

(Application filed Sept. 22, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

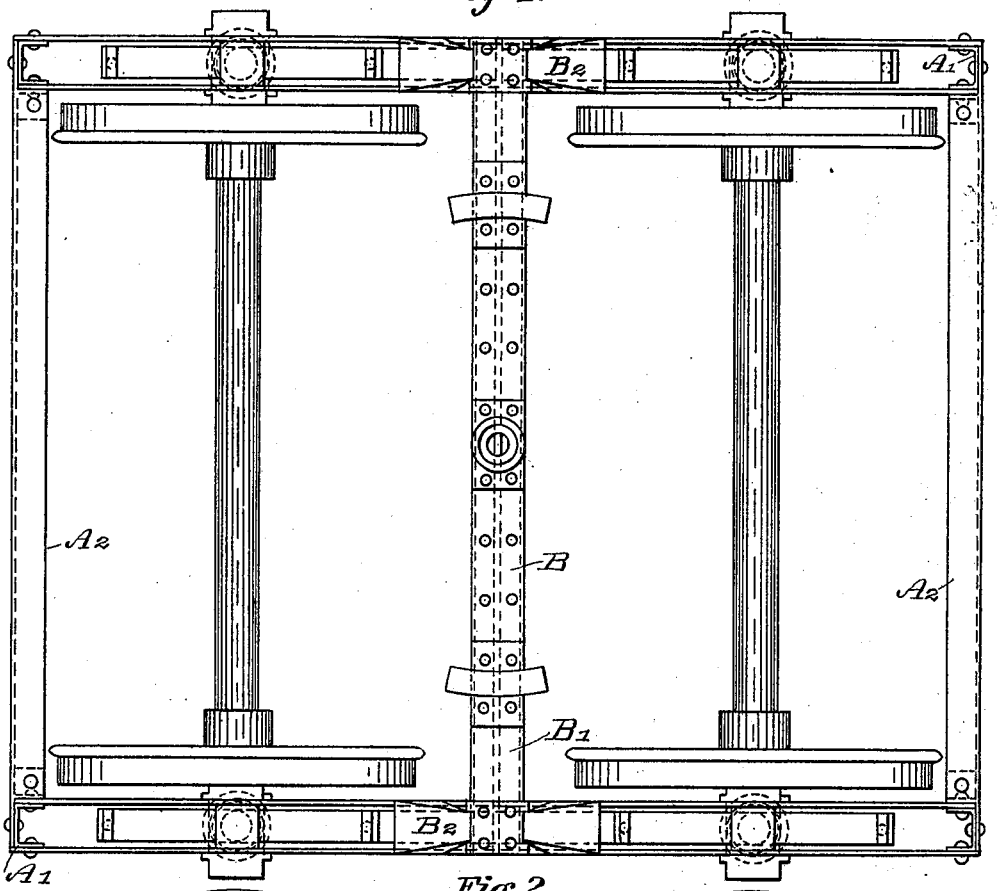
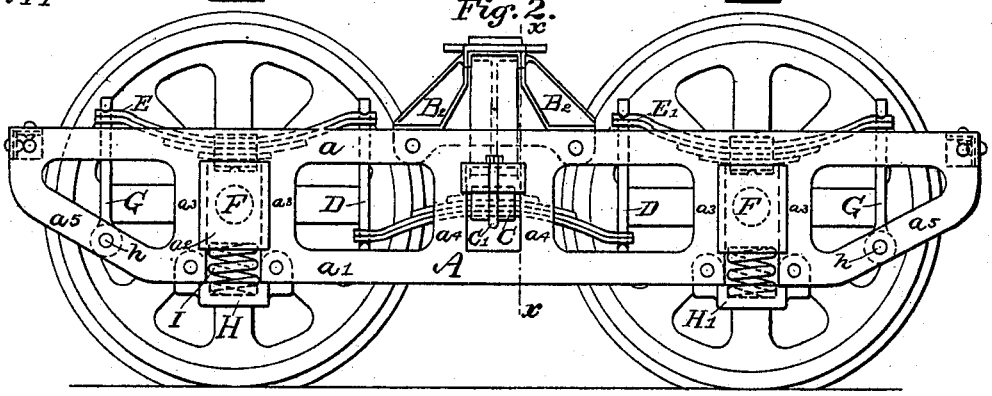


Fig. 2.



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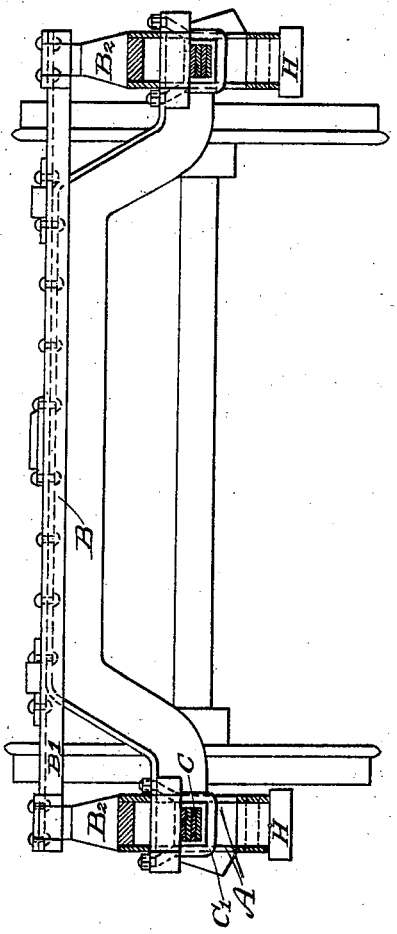

Fig. 3.

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UNITED STATES PATENT OFFICE.

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CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 649,100, dated May 8, 1900.

Application filed September 22, 1899. Serial No. 731,292. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL E. CLARKSON, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Car-Trucks, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to certain new and useful improvements in car-trucks.

The main object of my invention is to provide a truck wherein the weight of the load instead of being transmitted from the truck-bolster to the truck-frame, and thereby to the journal-boxes, is transmitted directly from the bolster to the journal-boxes through a system of springs supporting the bolster and supported by the journal-boxes. By relieving in this manner the truck-frame from the load of the car I am able not only to dispense with the spring-planks or other parts heretofore used to mount the bolster-springs on the truck-frame, but I can reduce very materially the weight of the said frame and the cost of its construction, the main office of the frame of my improved truck being to maintain the parallelism of the axles and to receive the upthrusts due to uneven road-bed, low rail-joints, &c. I am also able to materially shorten the wheel-base and to provide a truck which has sufficient clearance at the center for inside-hung motors and brake-rigging.

A further object of my invention is to effectively cushion the axles both above and below to neutralize to a maximum extent all shocks which they receive.

With these objects in view the invention consists in the provision of side semi-elliptic springs which directly support the truck-bolster and which are supported by and connected with inverted semi-elliptic springs resting centrally on the journal-boxes and tied at their outer ends to the end portions of the truck-frame.

The invention also comprises helical springs seated on the frame below the journal-boxes for the purpose of receiving and neutralizing the upward movements of the truck-frame.

The invention also consists in the novel construction and combination of parts hereinafter described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a plan view of a car-truck embodying my invention. Fig. 2 is a side view of the same, and Fig. 3 is a transverse section on the line X X of Fig. 2.

The letter A designates the side frames of the truck, which I prefer to construct each of two parallel edgewise-disposed plates spaced from and connected to each other by means of spacing-pieces A′ and bolts or rivets extending therethrough. Each of said plates has a continuous upper member a, extending over the journal-boxes, and a lower member a', broken by upwardly-extending openings a^2, for the journal-boxes, the said upper and lower members being integrally connected by the journal-box-guiding portions a^3, the intermediate portions a^4 forming guides for the ends of the bolster and the oblique end or truss portions a^5.

A^2 represents end connections for the two side frames A, consisting, preferably, of angle-bars securely riveted to both plates of each side portion.

B designates the bolster, which is upwardly arched at its central portion with depressed end portions which extend through the openings in the side frames formed by the guides a^4.

In order to prevent forward and rear rocking motion of the bolster by reason of the low end portions, I secure thereto a straight top member B′, whose ends project over the side frames A and are received in upwardly-extending guides B^2, which are secured between the plates of the side frames.

C designates the semi-elliptic side or bolster-supporing springs upon whose central portions the low bolster ends are rested and to which they are tied by straps or U-bolts C′. These springs are placed between the plates of the side frames, and their ends rest upon the lower T-heads of bolts D, by means of which they are link-connected and suspended to the inner end portions of inverted semi-elliptics E E′, which rest centrally on the journal-boxes F. The outer ends of the semi-elliptics E E′ are connected to the portions a^5 of the side frames by means of bolts G, having T-heads at their upper ends which are engaged by pivot pins or bolts h.

H designates spreaders, which are removably secured across the lower ends of the journal-box guides and which are formed with depressed seats H′ to receive the lower ends of helical springs I, seated between the spreaders and the under sides of the journal-boxes.

The weight of the load is received upon the semi-elliptics C, which act as equalizers in transmitting the load equally to the two journal-box semi-elliptics E E′, the upward pull on the side frames through the outer ends of the journal-box semi-elliptics being distributed upon the helical springs I underneath the journal-boxes. It will be seen, therefore, that instead of the side frames of the truck performing the office of beams loaded at the center they are relieved of the load, except as it is distributed through their end portions to the helical springs I. These springs I may, however, be omitted.

The springs, it will be noted, are largely concealed by the side frames, giving the truck a neater appearance in side view. To remove the wheels and axles, the side frames may be jacked up at their central portions and the spreaders H removed. The wheels and axles, with the boxes, can then be readily dropped out of the frame.

I do not desire to limit myself to the various details of construction which I have herein shown and described, as these may obviously be changed without departing from the essential features of my invention as pointed out in the appended claims.

Having thus described my invention, what I claim, and desire to protect by Letters Patent, is—

1. In a car-truck, the combination with a truck-frame and a bolster, of springs supporting said bolster, and other springs carried by the journal-boxes and supporting the first-named springs independently of the truck-frame.

2. In a car-truck, the combination with the frame, the wheels and axles, the journal-boxes, and a truck-bolster, of springs carried by the journal-boxes and equalizing members supported by said springs and supporting the bolster independently of the truck-frame.

3. In a car-truck, the combination with the frame, the wheels and axles, the journal-boxes having guides in the said frame, and a truck-bolster, of springs carried on the journal-boxes, and bolster-springs suspended by the journal-box springs and carrying the bolster.

4. In a car-truck, the combination with the frame, the wheels and axles, and the journal-boxes having guides in the frame, of inverted semi-elliptic springs carried on the journal-boxes and connected at their outer ends to the frame, semi-elliptic springs between the wheels suspended from the inner ends of the journal-box semi-elliptics, and a bolster supported by the suspended semi-elliptics.

5. In a car-truck, the combination with the frame, the running-gear, and the bolster, of the inverted semi-elliptic springs carried on the axle-boxes, the links or bolts connecting the outer ends of said frame with the end portions of the truck-frames, the side semi-elliptics between the wheels carrying the bolster at their central portions, and the bolts or links which suspend the side semi-elliptics from the inner ends of the journal-box semi-elliptics.

6. In a car-truck, the combination of the semi-elliptic springs carried by the axle-boxes and connected at their outer ends to the end portions of the frame, the bolster carrying semi-elliptics suspended from the inner ends of the journal-box semi-elliptics and springs interposed between the frame and the under sides of the journal-boxes.

7. In a car-truck, the combination with the frame having the journal-box guides and the spreaders closing the bottoms of the said guides, of the inverted semi-elliptic springs carried on the journal-boxes, and linked to the frame at their outer ends, the helical springs seated between the said spreaders and the journal-boxes, and the bolster carrying semi-elliptics link-supported from the inner ends of the journal-box semi-elliptics.

8. In a car-truck, the side frames composed of two parallel edgewise-disposed plates, each of which has upper and lower members integrally connected by journal-box and bolster guides and also by end trusses, substantially as described.

9. In a car-truck, the combination with a bolster having an arched body member and a straight top member extending over the side frames, of the side frames having guide-openings for the depressed ends of the body member, and upwardly-projecting guides for the end portions of the top member.

10. In a car-truck, the combination with the side frames composed each of two parallel separated members, and provided with journal-box guides, of the inverted semi-elliptic springs carried on the journal-boxes and the bolster carrying semi-elliptic springs suspended from the inner ends of the journal-box springs, all said springs being arranged in the spaces between the members of the side frames.

11. In a car-truck, the combination with the frame, the running-gear, the springs carried on the journal-boxes, the semi-elliptic springs suspended from the journal-box springs, and the arched bolster having its ends bearing on said semi-elliptic springs, and a straight top member engaging upwardly-projecting guides on the frame.

In testimony whereof I have affixed my signature in presence of two witnesses.

SAMUEL E. CLARKSON.

Witnesses:
MYRTLE E. SHARPE,
H. W. SMITH.