

No. 739,801.

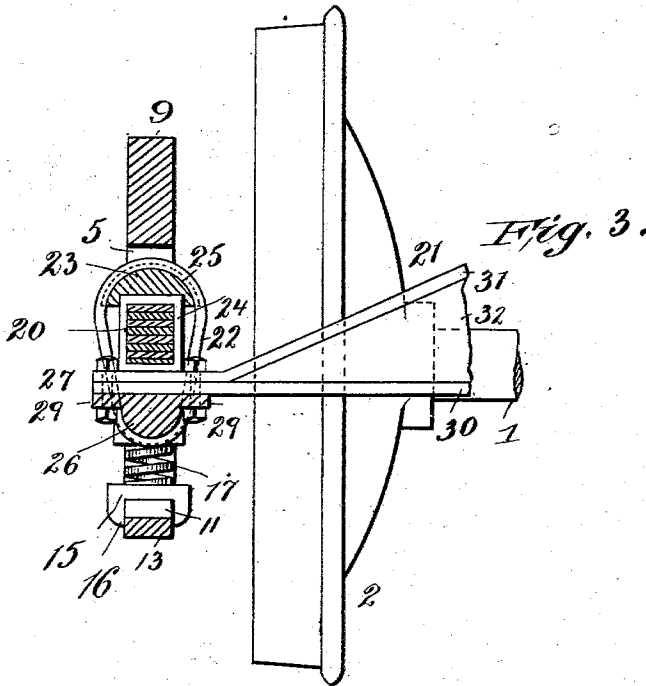
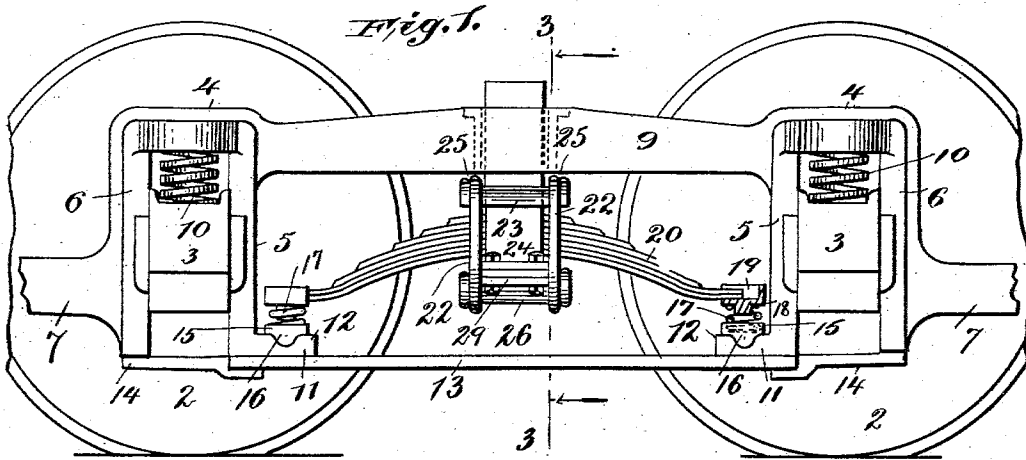
PATENTED SEPT. 22, 1903.

W. S. ADAMS.
CAR TRUCK.

APPLICATION FILED FEB. 25, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



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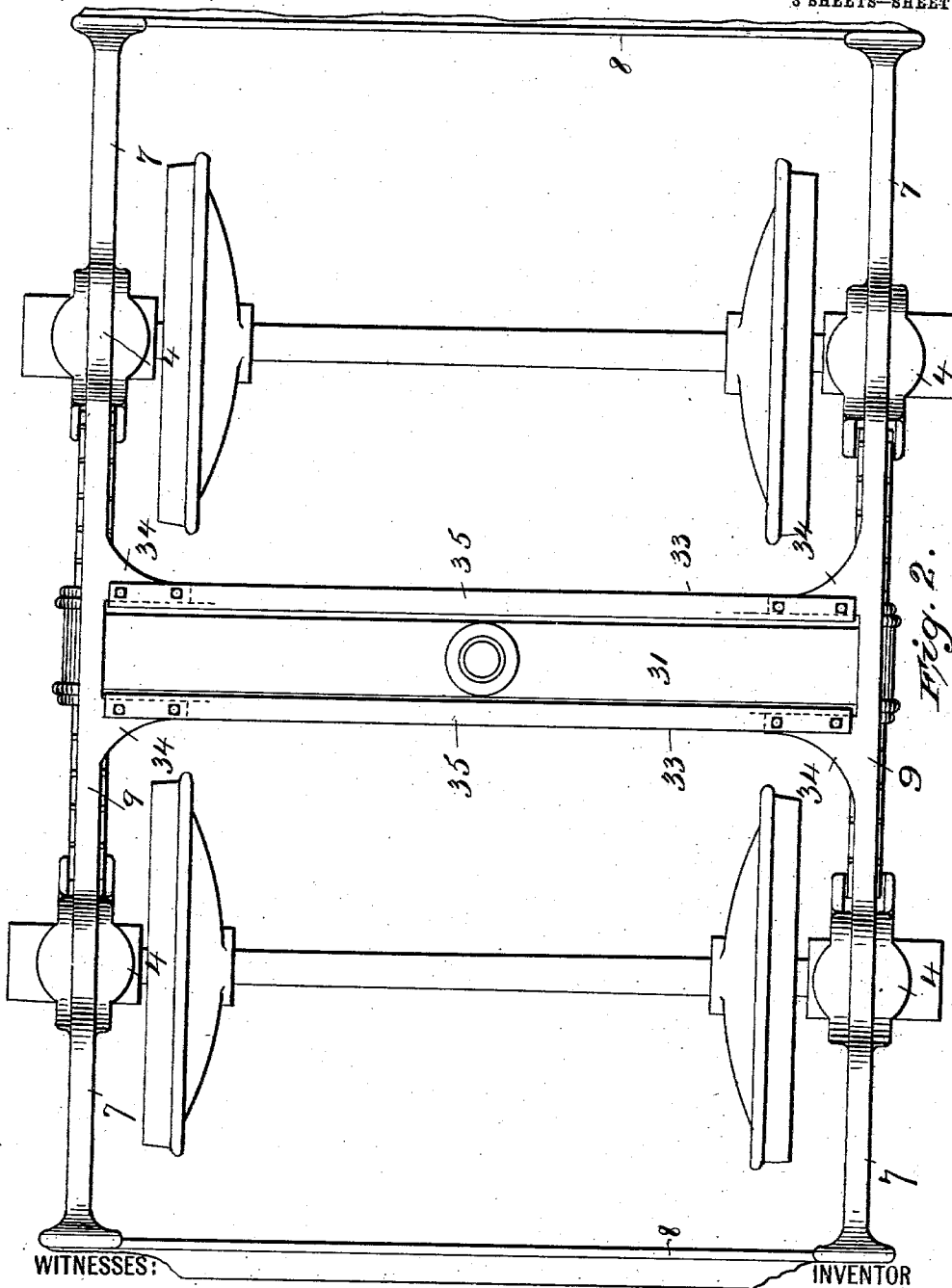
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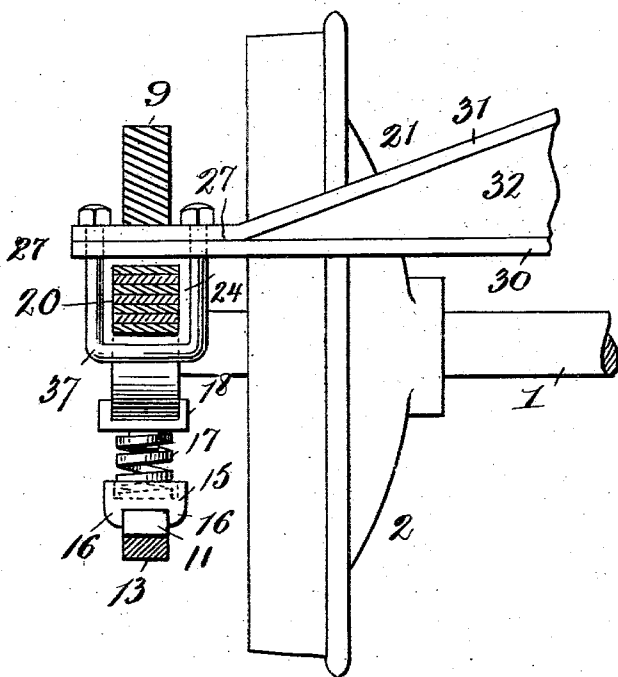
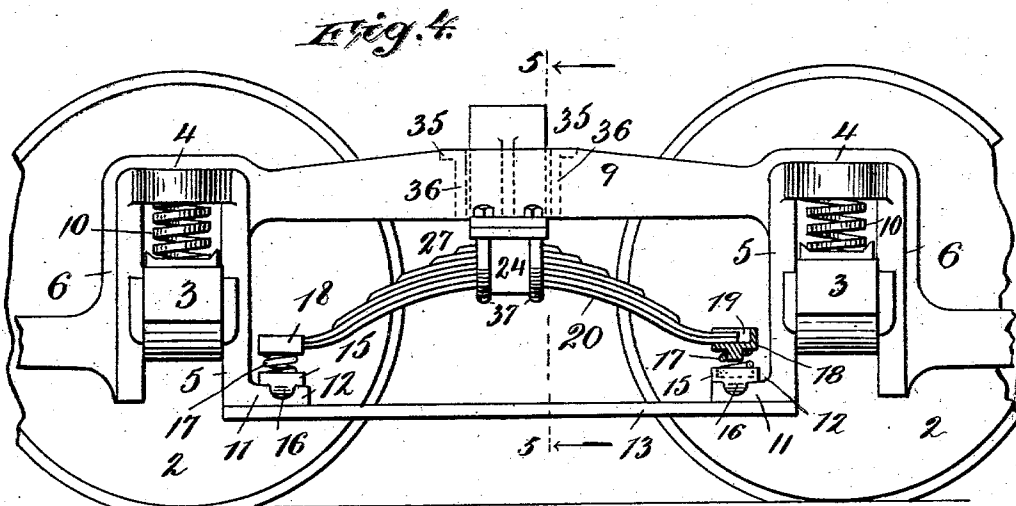
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UNITED STATES PATENT OFFICE.

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CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 739,801, dated September 22, 1903.

Original application filed June 21, 1902, Serial No. 112,588. Divided and this application filed February 25, 1903. Serial No. 144,966. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. ADAMS, a citizen of the United States, and a resident of the city and county of Philadelphia, State of Pennsylvania, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification.

My invention has relation to pivotal trucks for cars adapted to be employed in connection with electric motors, and has more especial relationship to trucks wherein the bolster is supported on longitudinally-disposed upwardly-arched semi-elliptic or leaf springs arranged on each side of the truck beneath the top bar of the side frames.

The object of my invention is to simplify and reduce the cost of construction and maintenance of trucks of this kind and at the same time preserve a great many of the features of trucks of this class—namely, better equalization of the load under varying conditions of service, to produce an easy-riding truck both with reference to the superposed car-body and the action of the truck on the rails, to enable the axles of the wheels to be brought comparatively close together to produce what is known as a "short wheel-base truck," and to secure many other desirable features hereinafter referred to.

This is a divisional application of the one filed by me June 21, 1902, Serial No. 112,588.

In the drawings forming part of this specification, Figure 1 is a side elevation of a truck made in accordance with my improvements. Fig. 2 is a plan view of the same. Fig. 3 is a section taken on the line 3 3 of Fig. 1 looking in the direction of the arrows. Fig. 4 is a side elevation of a further form of my invention. Fig. 5 is a section taken on the line 5 5, Fig. 4, in the direction of the arrows.

Throughout the various views similar reference characters designate similar parts.

The truck consists of the usual axles 1, wheels 2, and axle-boxes 3, the axle-box yokes 4 or pedestals 4 having the inner and outer arms 5 and 6, extensions 7 from the outer arms connected transversely by cross-bars 8, the inner arms being connected by the top

bars or chords 9, and between the top of the axle-boxes 3 and the top of the yokes 4 extend the usual axle-box springs 10.

On the inner lower ends of the inner pedestal-arms 5 are formed inwardly and longitudinally extending lugs 11, which are provided with flat upper surfaces 12. Said lugs 11 may be joined by a tie-bar 13. Additional tie-bars 14 may be used to unite the lower ends of the arms 5 and 6. On the faces 12 are seats 15, with flanges 16, which engage the sides of the lugs 11, and in said cups are springs 17, which support guide-caps 18, with recess 19, in which the ends of semi-elliptic springs 20 may rest or slide.

The bolster 21, of any desired form, is supported upon the semi-elliptic springs in the form of my invention illustrated in Figs. 1, 2, and 3 by means of the links 22, seated upon the recessed plate 23, secured to the top of the band 24 of the semi-elliptic springs 30, the links resting in the bibs 25, which keep the links in place, and upon the lower portion of the links rests a casting 26, likewise recessed and bibbed, which in turn supports the ends of the bolster 21, which pass between the links and under the springs 20, the flanges 29 of the casting being secured to the bolster ends by bolts, as shown in Fig. 3. The bolster 21 may consist of the lower bar 30, arched bar 31, and wooden filling 32. The arched bar 31 is so formed that the usual center and side bearings, which may rest thereon, may be clear of the transoms 33, which are secured to lugs 34, projecting inwardly and transversely from the top bars 9. The transoms may preferably have horizontal webs 35 and vertical webs 36, between which the bolster rests.

In the foregoing I have described a construction in which the bolster is flexibly connected with the semi-elliptic springs. I may also rigidly connect the ends of the bolster to said springs by means of strap-bolts 37, Figs. 4 and 5, which pass around (or at the sides of) the bands 24 of the spring 20 and through the ends 27 of the bolster-plates, thus holding the spring. The lateral swing of the bol-

ster in this case will be accommodated by a flexure of the spring 17 in the direction of the motion.

From the above it is obvious that the spiral springs 17 support the semi-elliptic springs elastically at their ends, the different rhythms of the respective springs so that all jars or vibrations are greatly reduced or eliminated before reaching the car-body, and it is immaterial whether such vibrations are due to the action of the brakes or to inequality in the track or road-bed.

In the foregoing I have described two embodiments of my invention, and it is clear that many others may be made which fall within the scope of the following claims.

I claim—

1. The combination in a truck, of a frame comprising top bars connecting axle-box pedestals, spiral springs supported by the axle-box pedestals, semi-elliptic springs resting on said spiral springs, and a bolster supported by said semi-elliptic springs.
2. The combination in a truck, of a frame comprising top bars, connected axle-box pedestals, and transoms, spiral springs supported by the axle-box pedestals, semi-elliptic springs resting upon said spiral springs, and a bolster supported by said semi-elliptic springs.
3. The combination in a truck, of a frame comprising top bars connecting axle-box pedestals, spiral springs supported by the axle-box pedestals, caps on said spiral springs, semi-elliptic springs resting on said caps, and a bolster supported by said semi-elliptic springs.
4. The combination in a truck, of a frame comprising top bars connecting axle-box pedestals, projections or lugs on the inner arms of said pedestals, spiral springs resting on said lugs, semi-elliptic springs resting on said spiral springs, and a bolster supported by the semi-elliptic springs.
5. The combination in a truck, of a frame comprising top bars connecting axle-box pedestals, lugs projecting from the inner arms of said pedestals, cups resting on said lugs, spiral springs resting in said cups, semi-elliptic

springs supported on said springs, and a bolster supported by the semi-elliptic springs.

6. The combination in a truck, of a frame comprising top bars, connecting axle-box pedestals, lugs projecting from the inner arms of said pedestals, spring-cups on said lugs, spiral springs supported in said cups, guide-caps on said springs, longitudinally-disposed semi-elliptic springs the ends of which rest in said guide-caps, and a bolster supported by said semi-elliptic springs.

7. In a car-truck, the side frame, lugs on said frame, spiral springs supported by said lugs, guide-caps resting on said spiral springs, and semi-elliptic springs with their ends supported by said guide-caps.

8. The combination in a truck, of a frame comprising top bars connecting axle-box pedestals, spiral springs supported by said axle-box pedestals, semi-elliptic springs supported by said spiral springs, and a bolster flexibly connected with said semi-elliptic springs.

9. The combination in a truck of a frame, means connected with said frame for supporting longitudinally thereof a plurality of arched semi-elliptic springs, links pivoted to the arches of said springs, and a bolster pivoted to the lower extremities of the said links.

10. The combination in a truck, of a frame, means connected with said frame for supporting longitudinally thereof a plurality of semi-elliptic springs, a plate resting on said springs, links pivoted to said plate, and a bolster supported by said links.

11. The combination in a truck, of a frame, means connected with said frame for supporting a plurality of semi-elliptic springs longitudinally of the frame, a plate on said springs, links pivoted to said plate, and a bolster with cross-pieces attached to its ends and pivoted in said links.

Signed in the city and county of Philadelphia, State of Pennsylvania, this 27th day of January, 1903.

WALTER S. ADAMS.

Witnesses:

WARREN M. SMITH,
WILLIAM B. CLARK.