

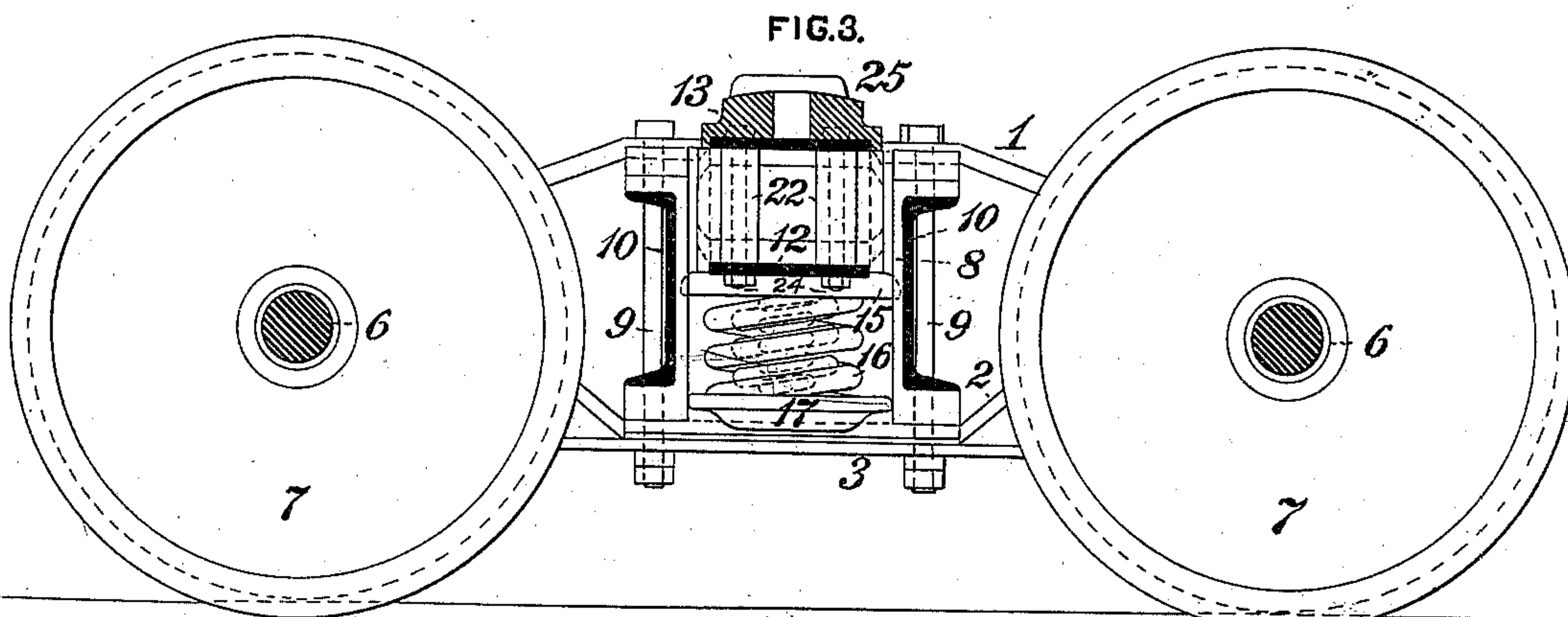
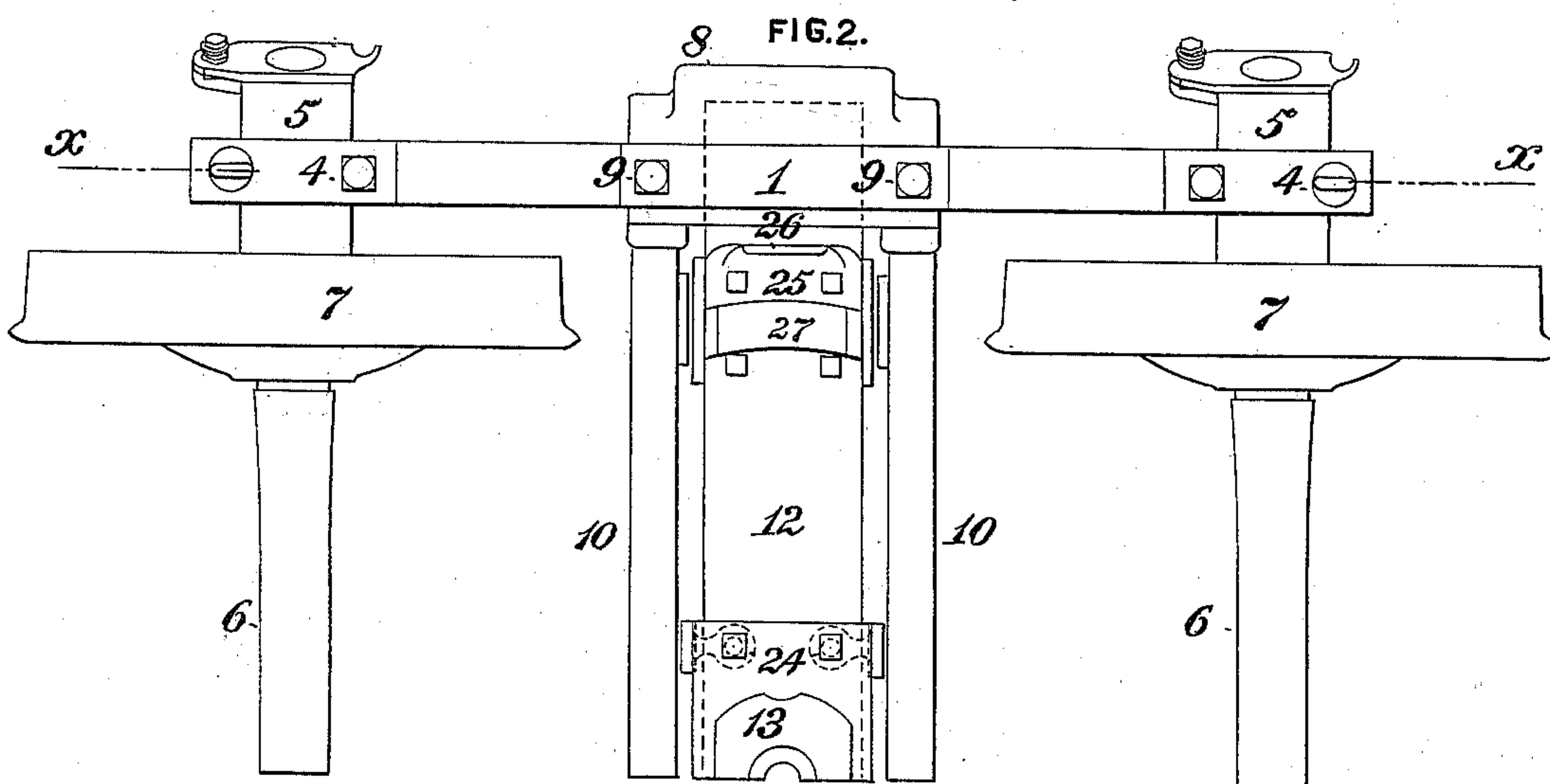
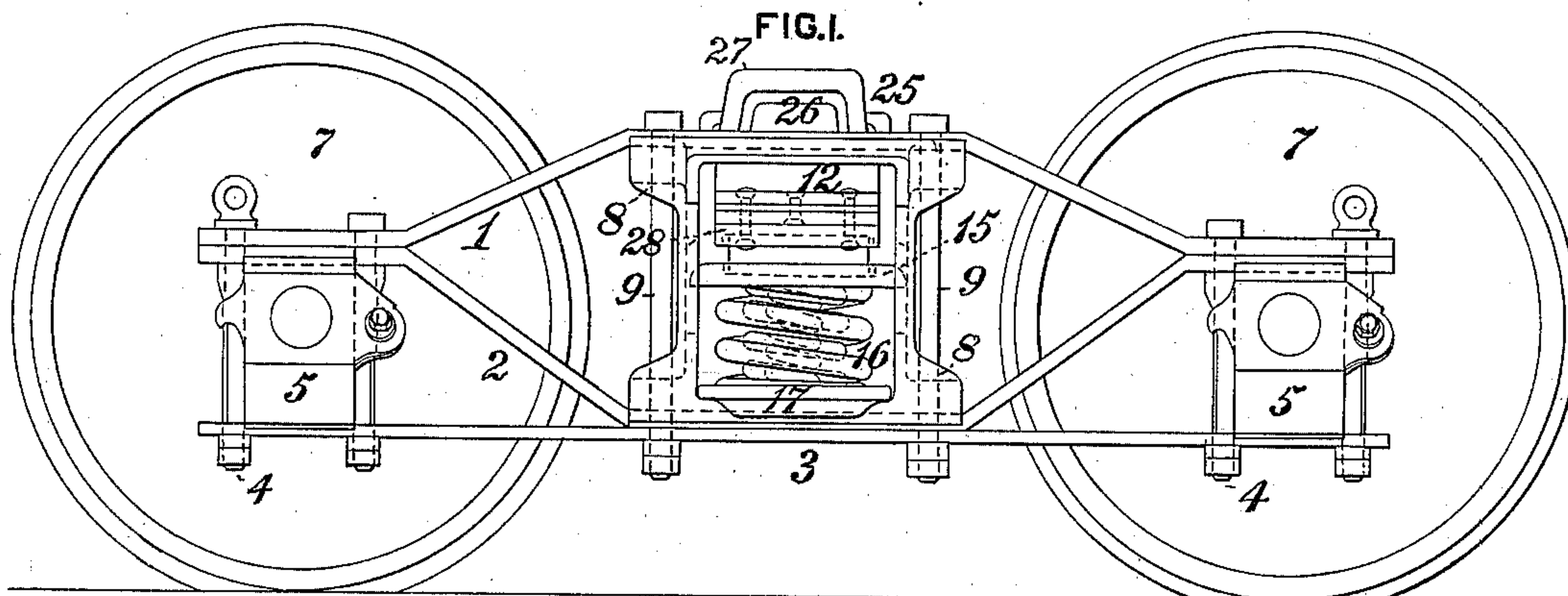
(No Model.)

2 Sheets—Sheet 1.

J. C. BARBER.
CAR TRUCK.

No. 383,688.

Patented May 29, 1888.



WITNESSES:

R. H. Whittlesey.
F. E. Gaither.

INVENTOR,

J. C. Barber.
by J. H. Horden Bell
Att'y.

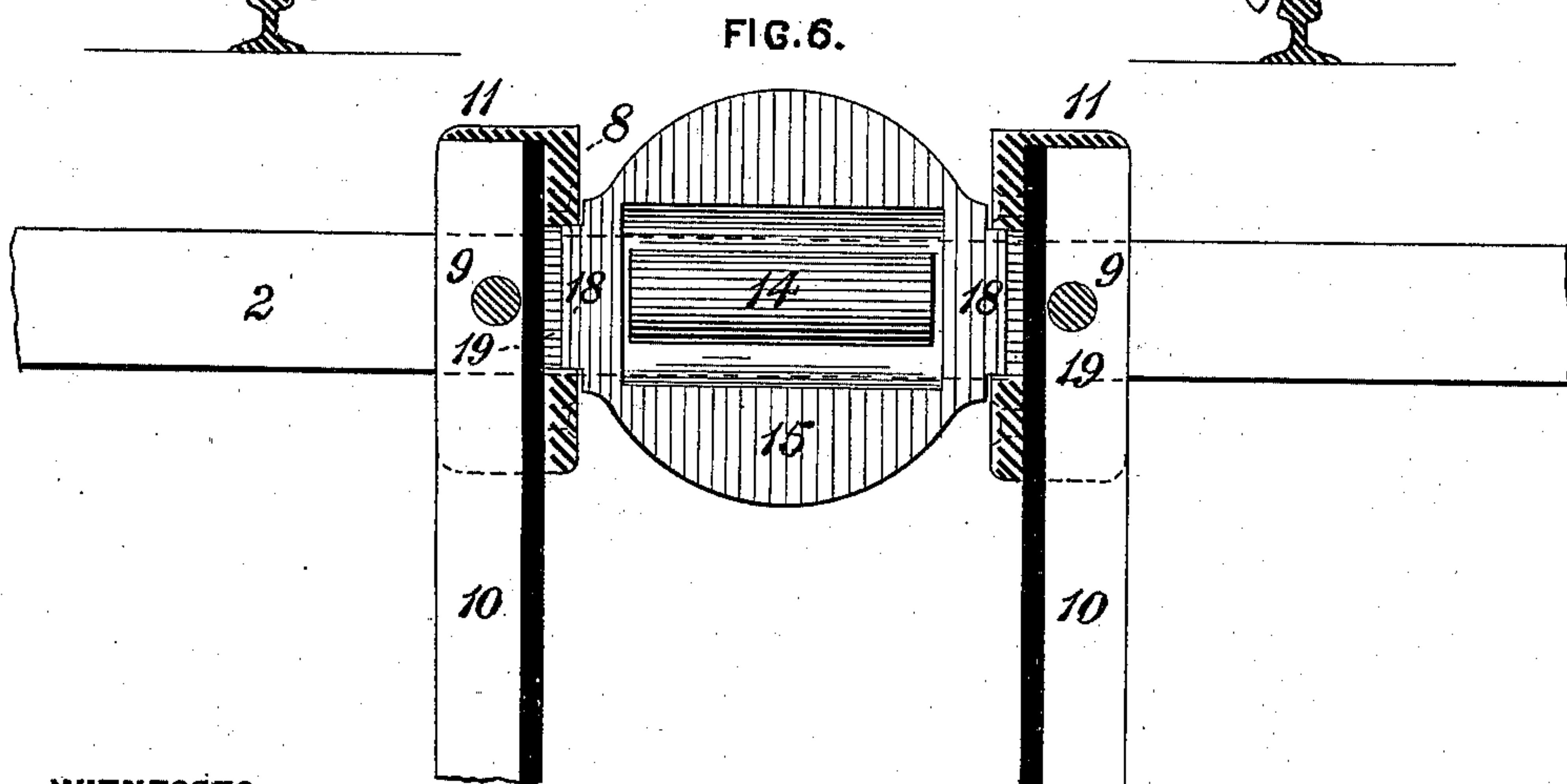
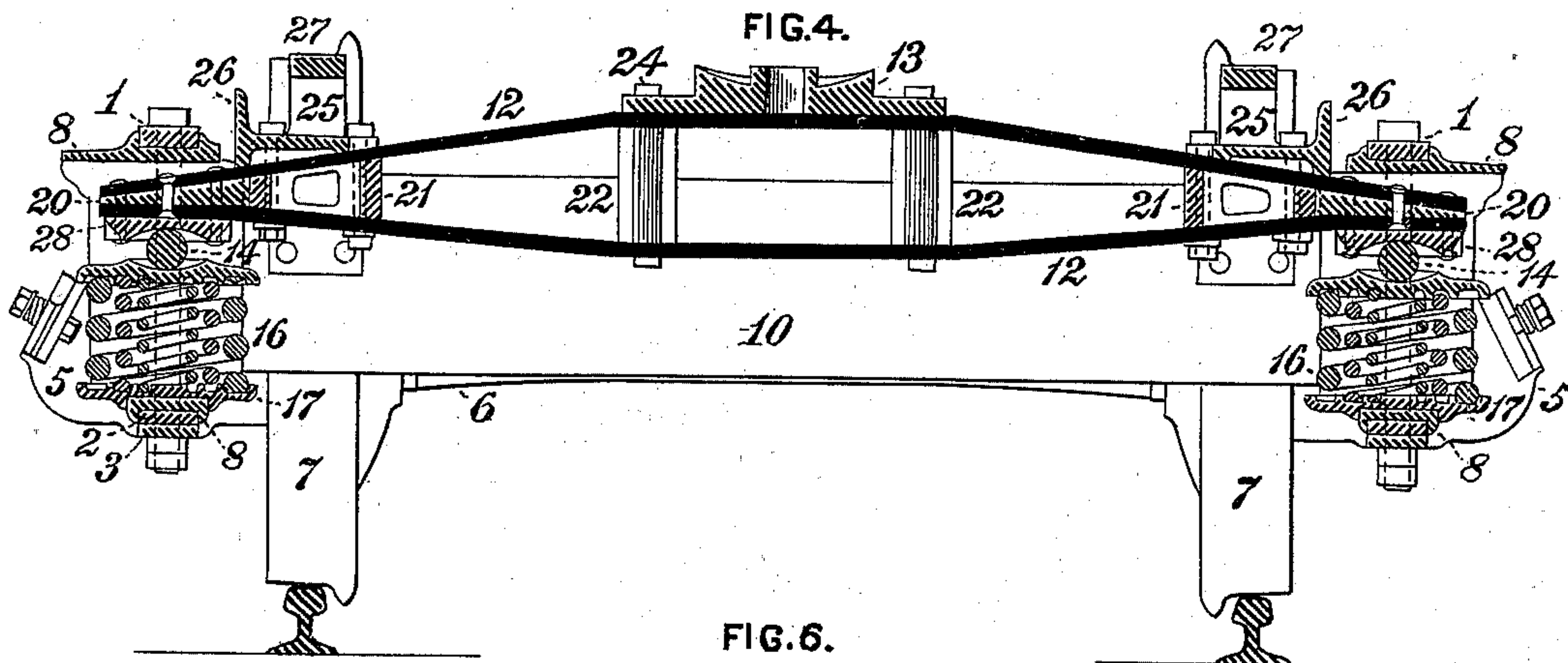
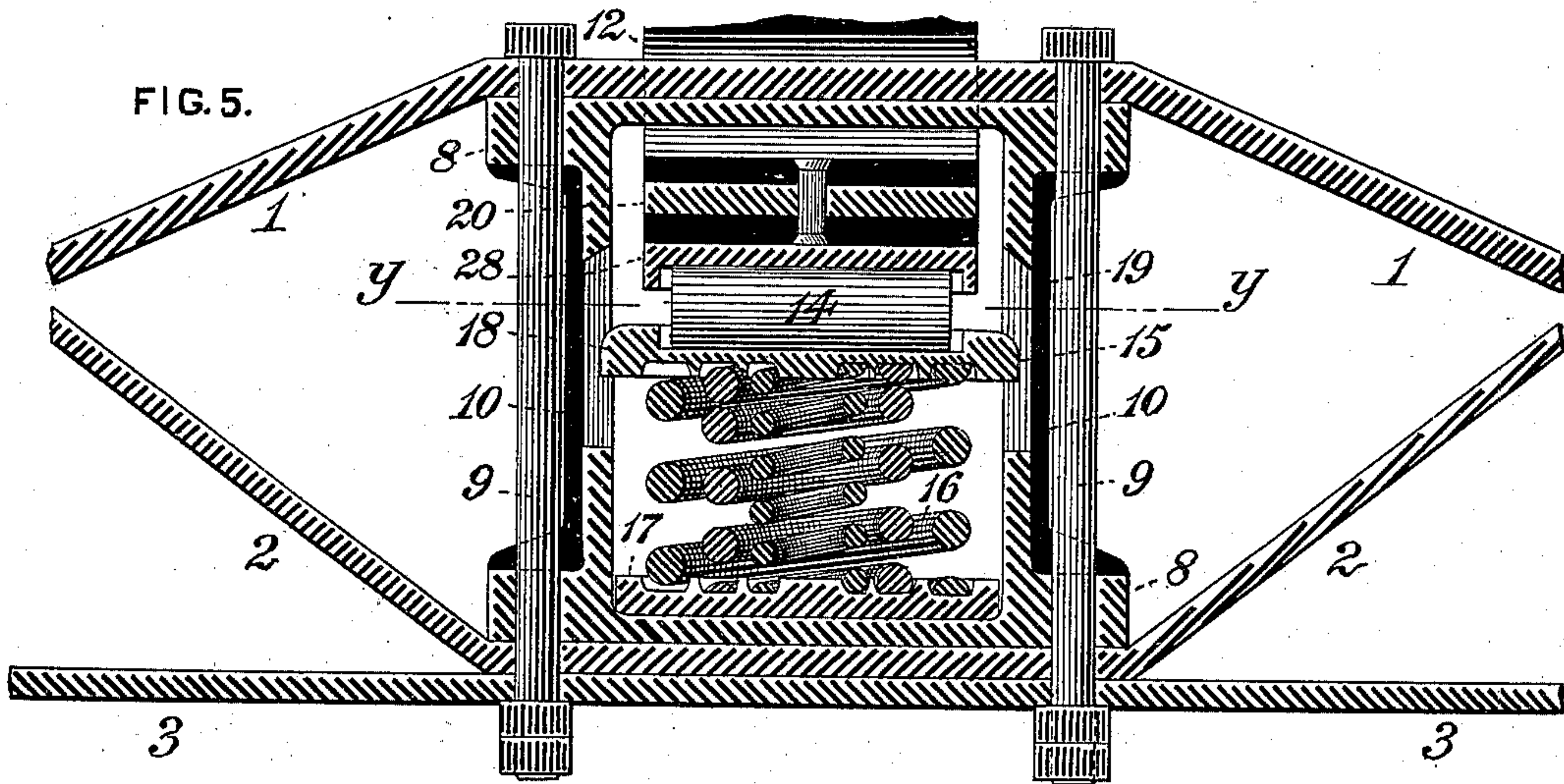
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UNITED STATES PATENT OFFICE.

JOHN C. BARBER, OF ST. PAUL, MINNESOTA.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 333,688, dated May 29, 1888.

Application filed January 21, 1888. Serial No. 261,492. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. BARBER, of St. Paul, in the county of Ramsey and State of Minnesota, have invented a certain new and useful Improvement in Car-Trucks, of which improvement the following is a specification.

The object of my invention is to provide a lateral or swing-motion truck, which shall be of increased capacity and simplified construction relatively to those heretofore employed, and in which swing-hangers, spring-planks, and their necessary accessories shall be wholly dispensed with, the strain and weight of the car-body and its load transmitted directly to the side frames or arch-bars, thereby relieving the transoms from duty other than that of the beams or transverse braces, and the bolster-springs adapted to perform, in addition to their ordinary functions, that of equalizer-springs, so as to distribute at all times, with substantial uniformity and with free movements, the weight sustained by them to all the journals of the truck.

To this end my improvement consists in certain novel devices and combinations herein-after fully set forth.

In the accompanying drawings, Figure 1 is a side view, in elevation, of a car-truck embodying my invention; Fig. 2, a half plan or top view of the same; Fig. 3, a longitudinal central section; Fig. 4, a transverse central section; Fig. 5, a vertical section, on an enlarged scale, at the line *x x* of Fig. 2; and Fig. 6, a horizontal section, on the same scale, at the line *y y* of Fig. 5.

My invention is herein illustrated as applied in an iron-frame truck of the well-known "diamond" pattern; but while specially adapted to such standard construction is not limited thereto, and is equally applicable under minor structural variations, and without departure from its governing principles, to trucks having frames of other known and approved forms. The side frames of the truck are, as usual in this type, composed of arch-bars 1, inverted arch-bars 2, and pedestal tie-bars 3, and are firmly connected at their ends by journal-box bolts 4, which pass through and secure to the frames the journal-boxes 5, which carry the journal-bearings of the axles 6, upon which the wheels 7 are fixed. So far as stated, the truck illustrated accords with those of the dia-

mond pattern heretofore employed, my improvement being comprehended in the features which will now be described.

An end casting, 8, the general form of which is that of a rectangular frame or box provided with upper and lower flanges, is interposed between the arch-bars 1 and inverted arch-bars 2, its center line according with the transverse central plane of the truck, and is firmly secured to the arch-bars 1 2 and pedestal tie-bar 3 by column-bolts 9, passing through its flanges and provided with nuts upon their lower ends. The transoms 10, which are in this instance of channel-bar form, fit against the sides of the end castings, 8, and between the upper and lower flanges thereof, their outer ends fitting against vertical flanges 11 on the outer sides of the end castings. The column-bolts 9 pass through holes in the flanges of the transoms, and the transoms are riveted to the sides of the end castings, 8. The transoms thus serve as tie-beams or transverse braces, by which the two side frames of the truck are firmly connected, and their flanges being protected by those of the end castings, the tendency to breakage of the former and of the rivets, which has heretofore been found a serious defect, is wholly obviated. A further advantage is attained in relieving the transoms, as will presently appear, from the duty of supporting a swing-bolster, and consequently from the weight and strain of the car-body and the load therein.

The swing beam or bolster 12, to which the center plate 13 is secured, is supported adjacent to each of its ends upon cylindrical roller-bearings 14, resting in curved or segmental recesses formed in the upper sides of spring-caps 15, which are in turn supported upon springs 16, bearing at their lower ends upon spring-seats 17, the construction providing a lateral or swing-motion system with self-adjusting rotary side bearings similar in principle so far as described to that set forth in Letters Patent of the United States, No. 370,758, granted and issued to me under date of October 4, 1887. In lieu, however, of connecting the spring-seats to a spring-plank suspended by swing-hangers from the transoms, as in said patent and in the ordinary constructions, the spring-plank, hangers, pivots, pivot-seats, &c., heretofore employed are dispensed with, and the

spring-seats 17 are supported on the inside lower faces of the end castings, 8, being held in position therein by side flanges fitting over the corresponding flanges of the end castings, 5 and being located in line centrally with the arch-bars and with the transverse central plane of the truck. By such construction the springs are adapted to act as equalizing as well as bolster springs, in addition to the advantages of lateral motion with self-adjustment, as in Patent No. 370,758. If preferred, openings may be formed in the bases of the end castings and the spring-seats be extended through said openings so as to rest directly on the lower or inverted arch-bars, 2. The spring-caps 15 are guided in their vertical movements by lateral tenons or projections 18, fitting in recesses or guideways 19 in the sides of the end castings, 8. The springs 16 are in this instance shown as each composed of three separate coils of different lengths, constituting triple-coil graduated springs similar to those of Patent No. 370,758; but elliptic springs or coil-springs of other approved and preferred constructions may, if desired, be employed in lieu of those illustrated.

The bolster 12 is preferably formed, as shown, of two bent or arched plates riveted at their ends to interposed wedge-shaped distance-plates 20, extending the full width of the plates, the plates being retained in shape and the bolster further braced and strengthened by chafing-plate thimbles 21, having chafing-plates on their sides, said thimbles being interposed between and riveted or bolted to the bolster-plates, and by center-plate thimbles 22, which are also provided with side chafing-plates and are fitted between the bolster-plates below the center plate, 13, and secured to the bolster-plates and center plate by bolts 24. Side bearing and lateral-motion stop-castings 25, each having a broad base or foot, are bolted or riveted to the upper bolster-plate, the connecting bolts or rivets passing through both bolster-plates and through the interposed chafing-plate thimbles 21. The lateral-motion stops 26 extend upward sufficiently far to enable them to abut against the adjacent inner faces of the end castings, 8, under the greatest compression of the springs in service, and are located at such distance from said faces as may be required to admit of the desired degree of swing motion. The side bearings, 27, are of proper height to abut against the corresponding members on the body-bolster of the car, and are curved concentrically with the center of the truck.

The bolster bears upon the roller-bearings 14 through roller caps or boxes 28, which are provided with segmental recesses on their lower sides to receive the roller-bearings 14 and flanges at the ends of said recesses to guide the rollers squarely in rotation, and the roller-caps are firmly secured to the ends of the bolster by rivets passing through the bolster-plates and the interposed distance-plates 20. It will be obvious that a bolster composed of

a wooden beam or beams properly braced or trussed and wooden transoms of suitable strength and dimensions may, if desired, be employed in lieu of the corresponding iron members described and shown; or a wooden bolster may be used with iron transoms, forming a combination iron and wood truck.

I claim as my invention and desire to secure by Letters Patent—

1. In a car-truck, the combination of a pair of side frames, an end casting secured centrally between the journal-boxes of each of said frames, and transoms secured to said end castings independently of and without bearing against the side frames, substantially as set forth.

2. In a car-truck, the combination of a pair of side frames, an end casting secured centrally between the journal-boxes of each of said frames and provided with lateral flanges, and transoms fitting against and secured to the end castings between the flanges thereof, substantially as set forth.

3. In a car-truck, the combination of a pair of side frames, an end casting secured centrally between the journal-boxes of each of said frames, springs supported within said end castings, a swing beam or bolster supported by said springs, and transoms secured to the end castings independently of and without bearing against the side frames, substantially as set forth.

4. In a car truck, the combination of a pair of side frames, a frame or box-shaped end casting interposed centrally between the journal-boxes of and secured to each of said frames, a spring or group of springs supported within each of said end castings, a spring cap resting upon the top of each spring or series of springs, a roller-bearing fitting a seat in each of said spring-caps, and a bolster resting at its ends upon said roller-bearings, substantially as set forth.

5. In a car-truck, the combination of a pair of side frames, a frame or box-shaped end casting secured centrally between the journal-boxes of each of said frames, a spring or group of springs supported within each of said end castings, a bolster supported with the capacity of free lateral movement upon bearings on said springs or groups of springs, and side-motion stops secured to the bolster in position to abut against the end castings at the limits of the lateral movements of the bolster, substantially as set forth.

6. In a car-truck, the combination of a bolster formed of a pair of arched or bent plates connected at their ends, thimbles provided with lateral chafing-plates interposed between and secured to the bolster-plates, and side bearing and lateral motion stop-castings secured to the chafing-plate thimbles and bolster-plates, substantially as set forth.

J. C. BARBER.

Witnesses:

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CHAS. E. CRAIG,