

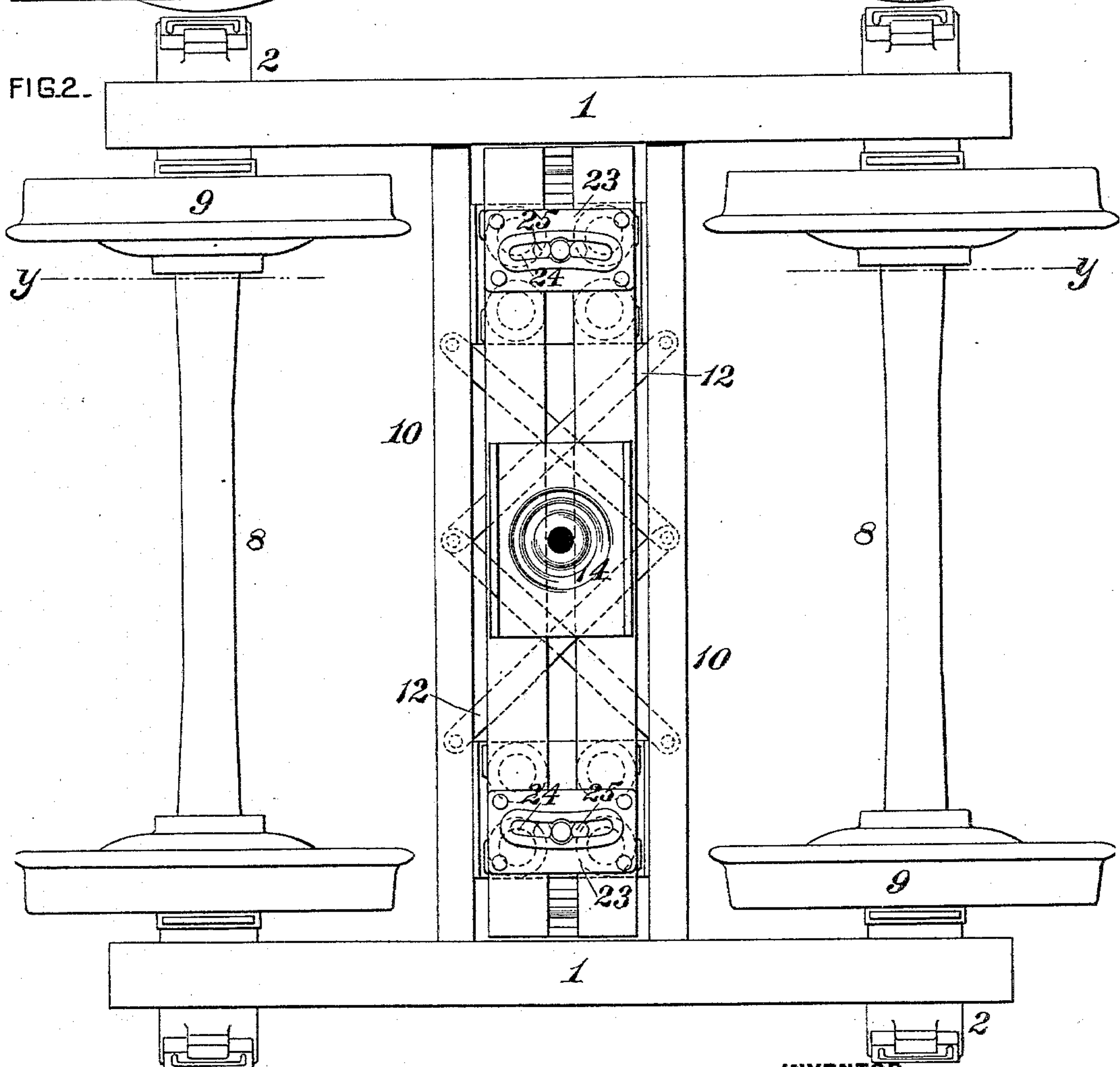
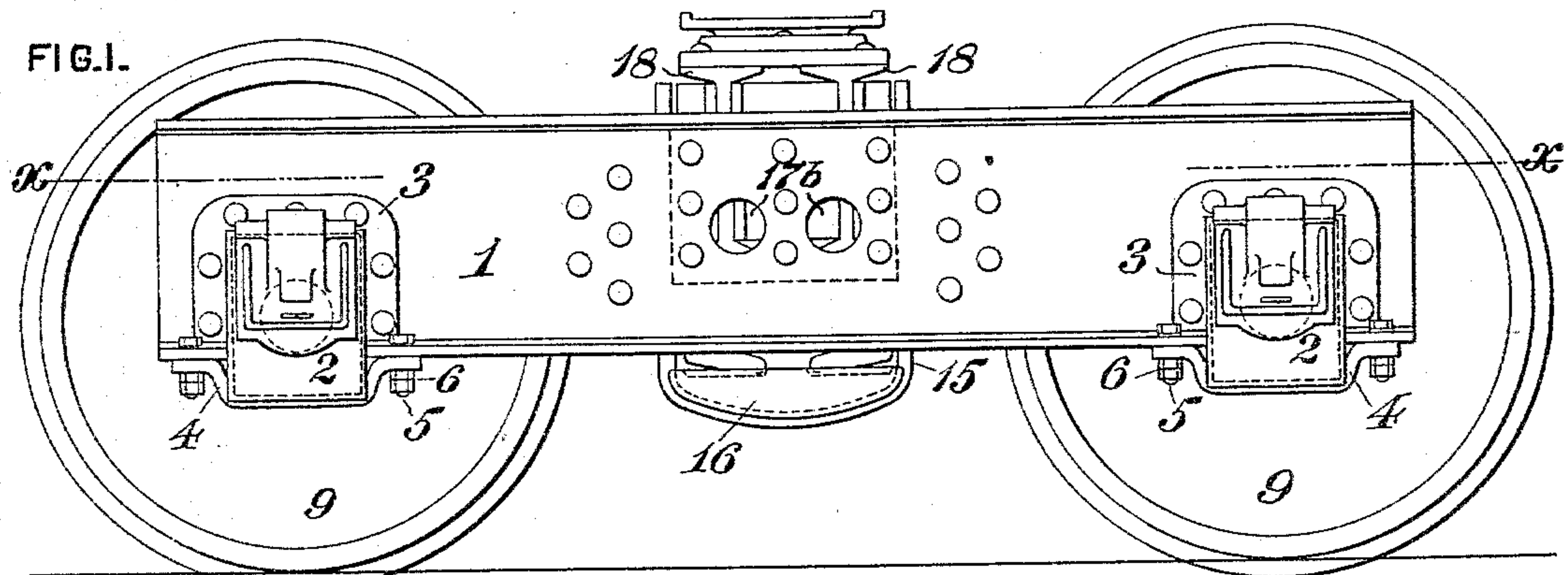
(No Model.)

2 Sheets—Sheet 1.

A. K. MANSFIELD.
CAR TRUCK.

No. 545,409.

Patented Aug. 27, 1895.



WITNESSES:

J. I. Hogan.
J. E. Mather.

INVENTOR,

A. K. Mansfield
by J. M. Bowden Bell Att'y.

(No Model.)

2 Sheets—Sheet 2.

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FIG. 3.

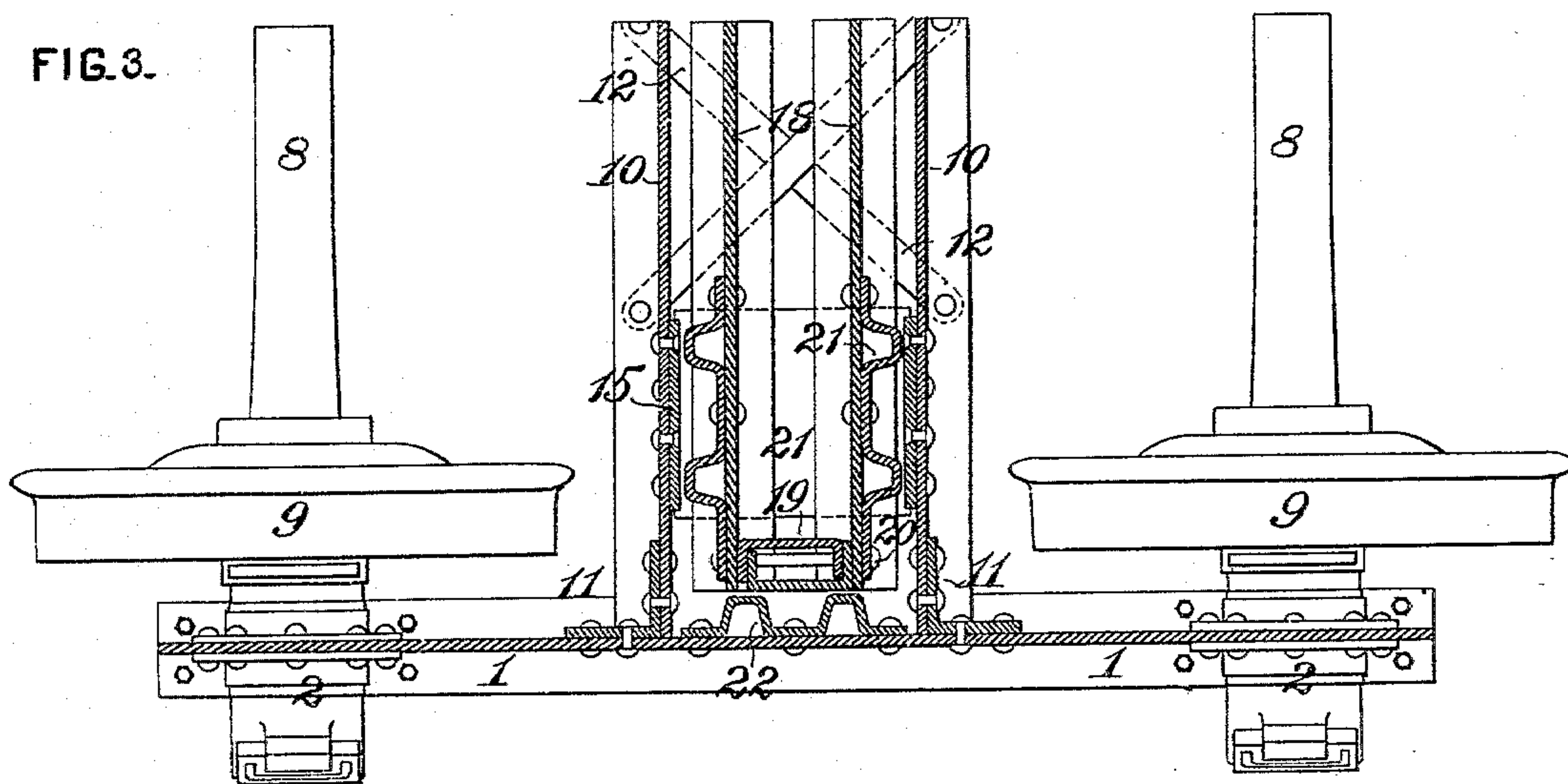


FIG. 4.

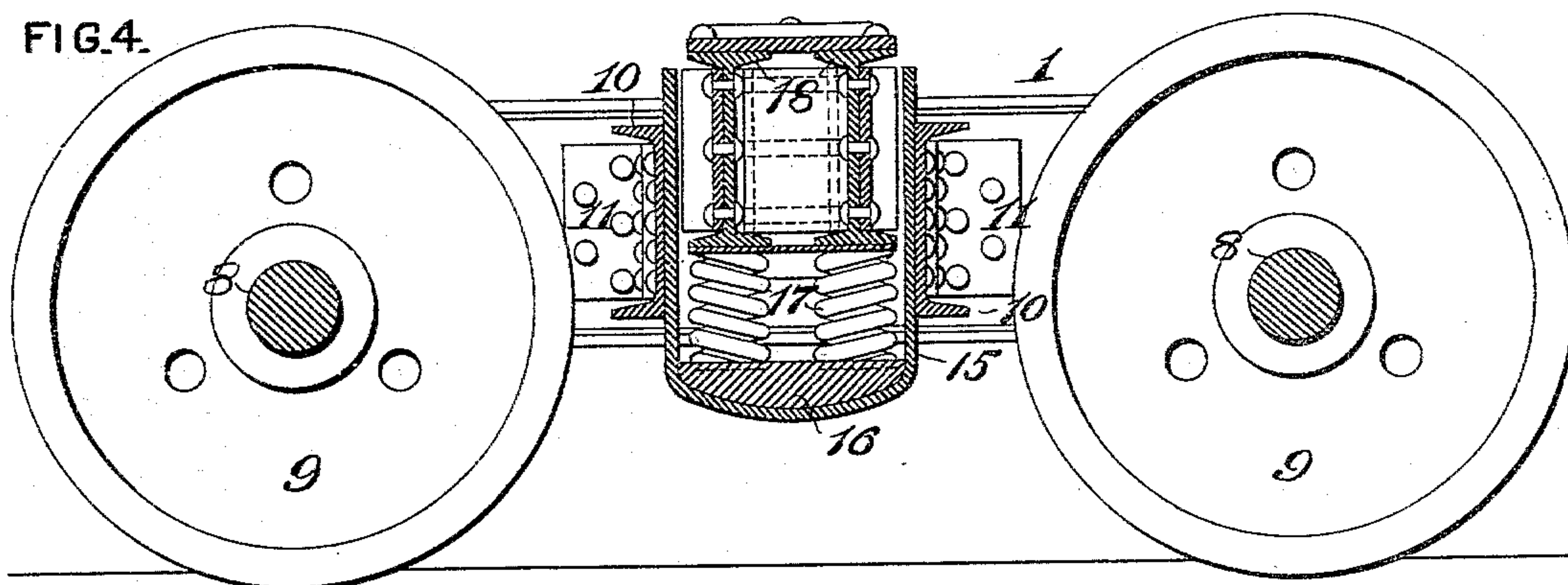
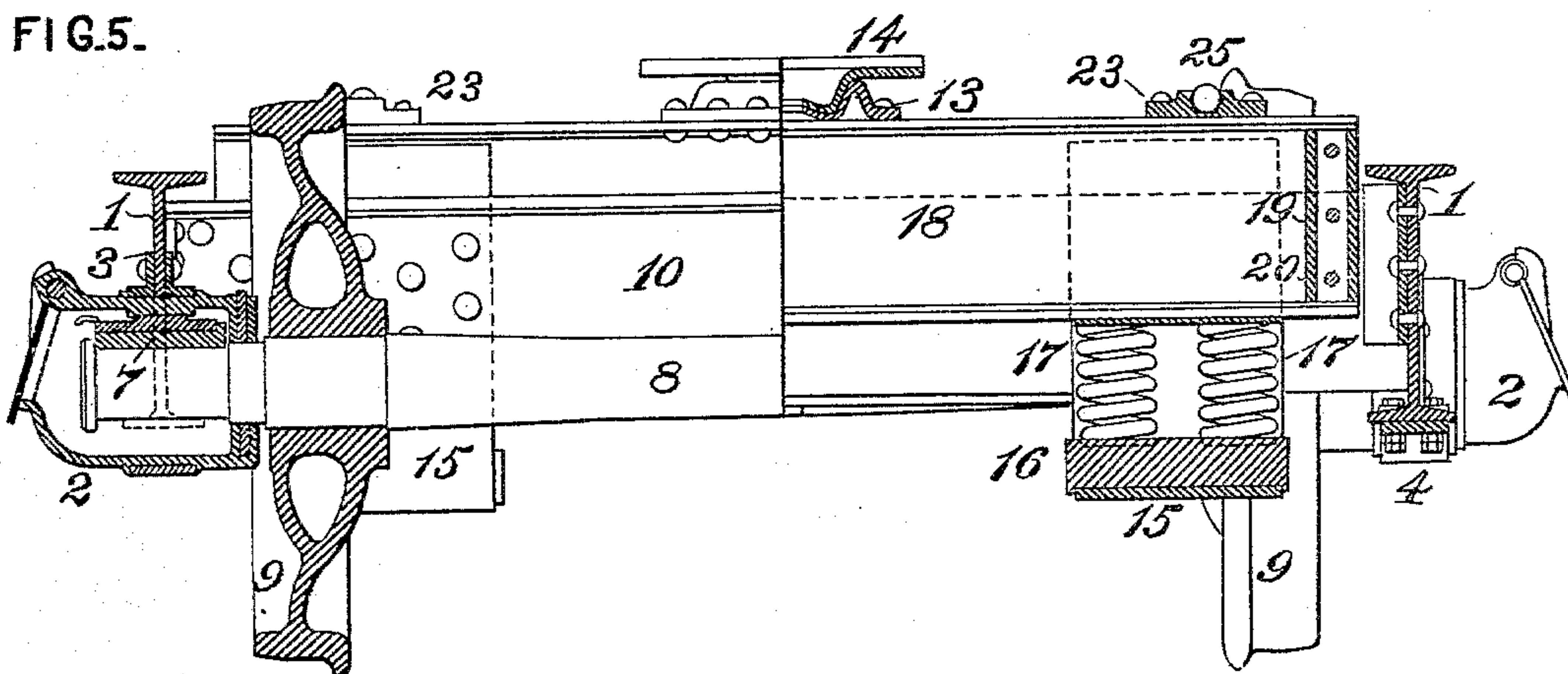


FIG. 5.



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UNITED STATES PATENT OFFICE.

ALBERT K. MANSFIELD, OF SALEM, ASSIGNOR OF ONE-HALF TO SAMUEL M. FELTON, OF CINCINNATI, OHIO.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 545,409, dated August 27, 1895.

Application filed May 9, 1895. Serial No. 548,703. (No model.)

To all whom it may concern:

Be it known that I, ALBERT K. MANSFIELD, of Salem, in the county of Columbiana and State of Ohio, have invented a certain new and useful Improvement in Car-Trucks, of which improvement the following is a specification.

My invention relates to car-trucks of the class or type in which metallic members are employed throughout, and which is more particularly designed for service in freight-cars and locomotive-tenders.

The object of my invention is to provide a truck of this class which shall embody the features of simplicity, strength, durability, and economy in construction, and which shall afford convenient facilities for the utilization of springs of any desired types and for the ready removal and replacement thereof, as may from time to time be required.

The improvement claimed is hereinafter fully set forth.

In the accompanying drawings, Figure 1 is a side view, in elevation, of a car or tender truck illustrating an embodiment of my invention; Fig. 2, a plan or top view of the same; Fig. 3, a half horizontal section at the line $x x$ of Fig. 1; Fig. 4, a vertical longitudinal section at the line $y y$ of Fig. 2; and Fig. 5, a vertical transverse section, the left-hand half being taken in the plane of one of the axles, and the right-hand half in the central plane of the truck.

My invention is designed to economize and simplify the construction of the truck-frame by utilizing therein, wherever practicable, plates, sheets, or beams of metal, preferably steel, brought to the required form by pressing, bending, or rolling, and particularly commercial shapes, as I beams and channels, these latter being manufactured for various other uses of the proportions and strength required, and being obtainable in the open market at lower cost than that of manufacturing special shapes, which special shapes can, however, be adopted to a greater or less extent, and can also be made at a comparatively small cost and to the standard patterns under which they may be applied. It will be seen that these conditions have been governing ones in the construction herein set forth.

In the practice of my invention I provide a truck-frame having two side frame members

1 1, each of which is an I-beam, preferably of steel, recessed on its under side for about one-half its height near each of its ends to receive the axle-boxes 2 2, which are secured to the opposite sides of the frame members 1, around the recesses in which the axle-boxes are fitted by angle-plates 3, bent into substantially U form, so as to encircle the axle-boxes on their tops and sides, and riveted to the side frame members. The angle-plates 3 enter recesses on the tops and sides of the axle-boxes, which are held in position, with the capacity of ready removal and replacement, by pedestal-braces 4, which afford a bearing of the same width as that formed by the angle-plates 3, and are connected to the lower flanges of the side frame members 1 by bolts 5 and nuts 6. The axle-boxes 2 are preferably of the Master Car-Builders' standard construction, and carry in the usual manner the journal-bearings 7 of the axles 8, on which the wheels 9 are secured.

The side frame members 1 are connected by transoms 10, each of which is preferably a channel-bar of steel secured at its opposite ends by angle-plates 11 and rivets to the side frame members. The transoms 10 are set at a sufficient distance apart to admit of the interposition of spring-supports, to be presently described, and in order to resist the action of force tending to move the truck-frame out of square the transoms are connected by a series of diagonal brace-bars 12, riveted to their lower flanges.

Car-trucks known in practice in which the side frame members are integral plates of metal, as heretofore constructed, have usually had their springs located in recesses in said plates above the axle-boxes. Such a construction increases the size and height of the side member, and involves the objection of delay and inconvenience in the insertion and removal of a spring, and of preventing the employment of elliptic springs, which are in many instances desirable. To obviate these objections, I provide spring-supports 15, each of which is a continuous plate of metal bent into substantially U form, so as to avoid angles between its sides and bottom, and located between the transoms 10 entirely clear of the side frame members 1, and at such distance therefrom as will comport with the convenient insertion and removal of the springs. Suitable

openings 17^b are formed in the side frames, and where nests of helical springs are employed, as in this case, the operator can put his hand through one of these openings to insert or withdraw a spring in or from position, and can observe the position and adjustment of the spring through the other. The spring-supports 15 are secured, by rivets passing through their vertical sides, to the webs of the transoms 10, and each is provided with a spring seat or bearing 16, which is preferably a casting fitted into the bottom of the spring-support 15 and held therein as against lateral displacement by lips or flanges on its sides. The springs 17, which in this instance are of the helical type, rest in recesses in the upper faces of the spring seats or bearings 16.

The bolster 18, which is supported at or near its ends on the spring 17 and fits freely between the sides of the spring-supports 15, is composed of two metal bars, which are preferably steel I-beams, as shown, and are connected at their ends by interposed distance-pieces 19, each composed of two channel-plates fitted together in box form, to which the bolster-beams are secured by rivets 20. Chafing-pieces 21, formed of plates pressed into the form of two troughs or channels with intermediate and side flanges, are riveted to the webs of the bolster-beams in position to abut against the inner faces of the spring-supports, and similar chafing-pieces 22 are riveted to the side members 1 of the truck-frame opposite the ends of the bolster. A center plate 13 of any suitable and preferred construction is secured to the upper flanges of the bolster-beams and serves to receive a center plate 14 on the car-body in the usual manner. Pressed steel center plates, as shown, are preferably adopted.

Side bearing-plates 23 are riveted to the upper flanges of the bolster-beams at a suitable distance from the ends of the bolster, each of said plates having a segmental groove or recess 24, the curvature of which is struck from the center of the truck, and in which are fitted a series of ball-bearings 25, which traverse freely in the grooves 24 and abut against suitable bearing-plates on the car-body. The width of the grooves 24 at top is less than the diameter of the balls, so as to prevent the displacement of the balls from the grooves, and the latter are recessed at one point, as shown in Fig. 2, sufficiently to admit of the insertion of the ball-bearings.

It will of course be understood that the truck is to be provided with some suitable and preferred brake apparatus, which may be connected in the usual manner, and which, as it does not constitute any part of my present invention, is not herein set forth.

It will be obvious that the construction above described may be modified in various matters of detail without departure from the characteristic features of my invention, and I do not therefore desire to limit myself to the specific forms of the several members which

are described and shown in the instance exemplified.

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

1. In a car truck, the combination, substantially as set forth, of two metal beam side frame members, commercial channel bar transoms connecting said side frame members, spring supports formed of plates of metal of substantially U section interposed between and connected to the transoms, springs resting on said spring supports, and a metal beam bolster supported on said springs.

2. In a car truck, the combination, substantially as set forth, of two metal beam side frame members, metal beam transoms connecting said side frame members, spring supports formed of plates of metal of substantially U section interposed between and connected to the transoms, springs resting on said spring supports, and a bolster formed of two connected commercial I beams and supported on said springs.

3. In a car truck, the combination, substantially as set forth, of two metallic bolster beams, and distance pieces each formed of two channels fitted in box form between, and secured to, the webs of the bolster beams near one end thereof.

4. In a car truck, the combination, substantially as set forth, of two metallic bolster beams, distance pieces interposed between and secured to said beams at or near their ends, and chafing pieces formed of plates bent into the form of channels with interposed and side flanges and secured to the outer sides of the bolster beams.

5. In a car truck, the combination, substantially as set forth, of a side frame member formed of a commercial I beam, cut to required length, and having axle box recesses cut in its web and the flanges on one of its sides near its ends, and angle plates bent into substantially U form and riveted to the beam around the tops and sides of the axle box recesses.

6. In a car truck, the combination, substantially as set forth, of two transom beams a spring support connected thereto and formed of a continuous plate of metal bent into substantially U form, and a spring seat fitting in the curved central portion of the spring support and having an upper face adapted to serve as a bearing for a spring or springs.

7. In a car truck, the combination, substantially as set forth, of a metal beam side frame member, of commercial rolled form, having an axle box recess near each of its ends, an angle plate bent into substantially U form and riveted to the beam around the top and sides of each axle box recess, and axle boxes fitting in said recesses and held rigidly to the frame member.

ALBERT K. MANSFIELD.

Witnesses:

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STEPHEN C. JESSUP.