

No. 709,071.

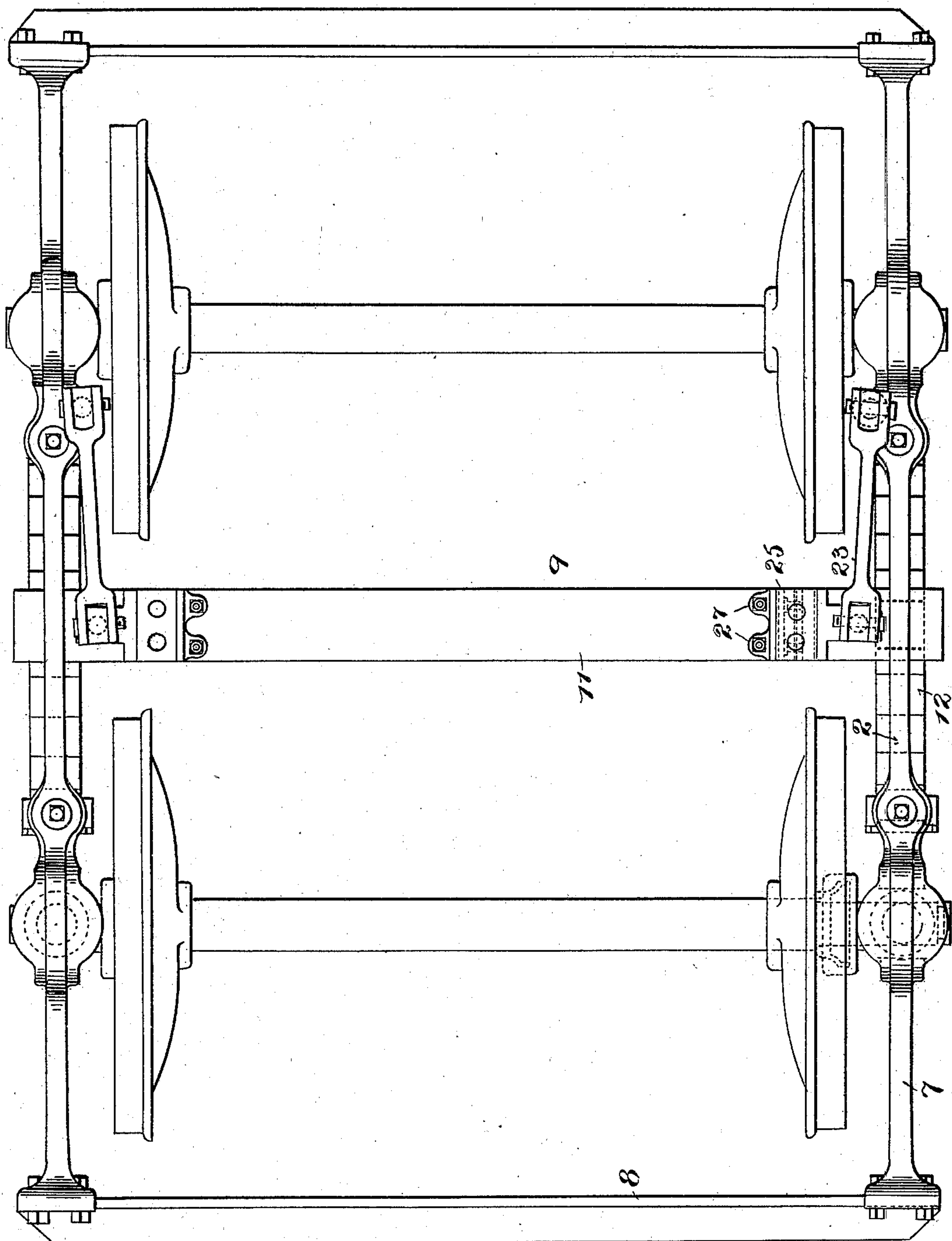
Patented Sept. 16, 1902.

W. S. ADAMS.
CAR TRUCK.

(Application filed Nov. 15, 1901.)

(No Model.)

3 Sheets—Sheet 1.



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1624

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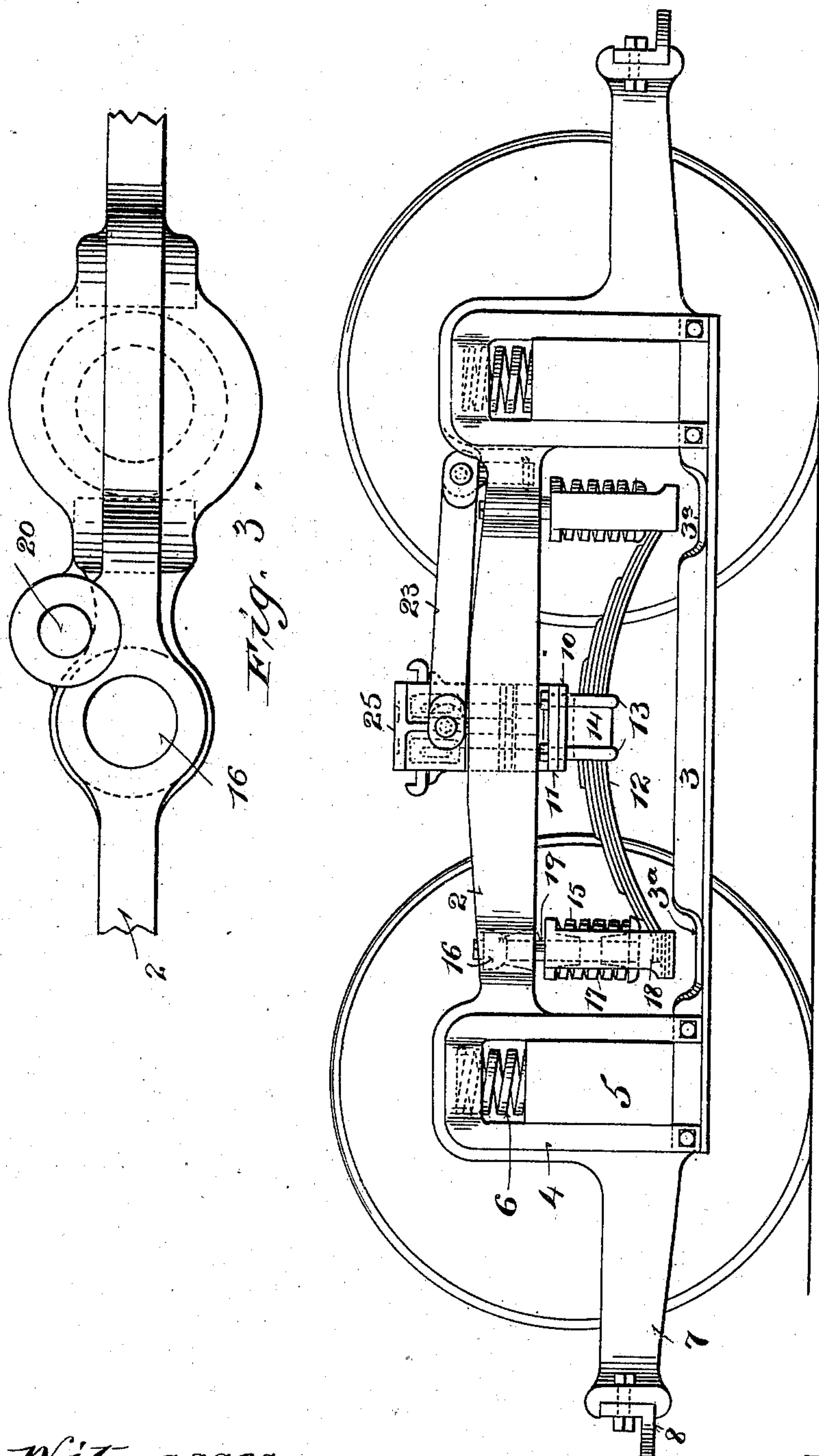
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3 Sheets—Sheet 2.



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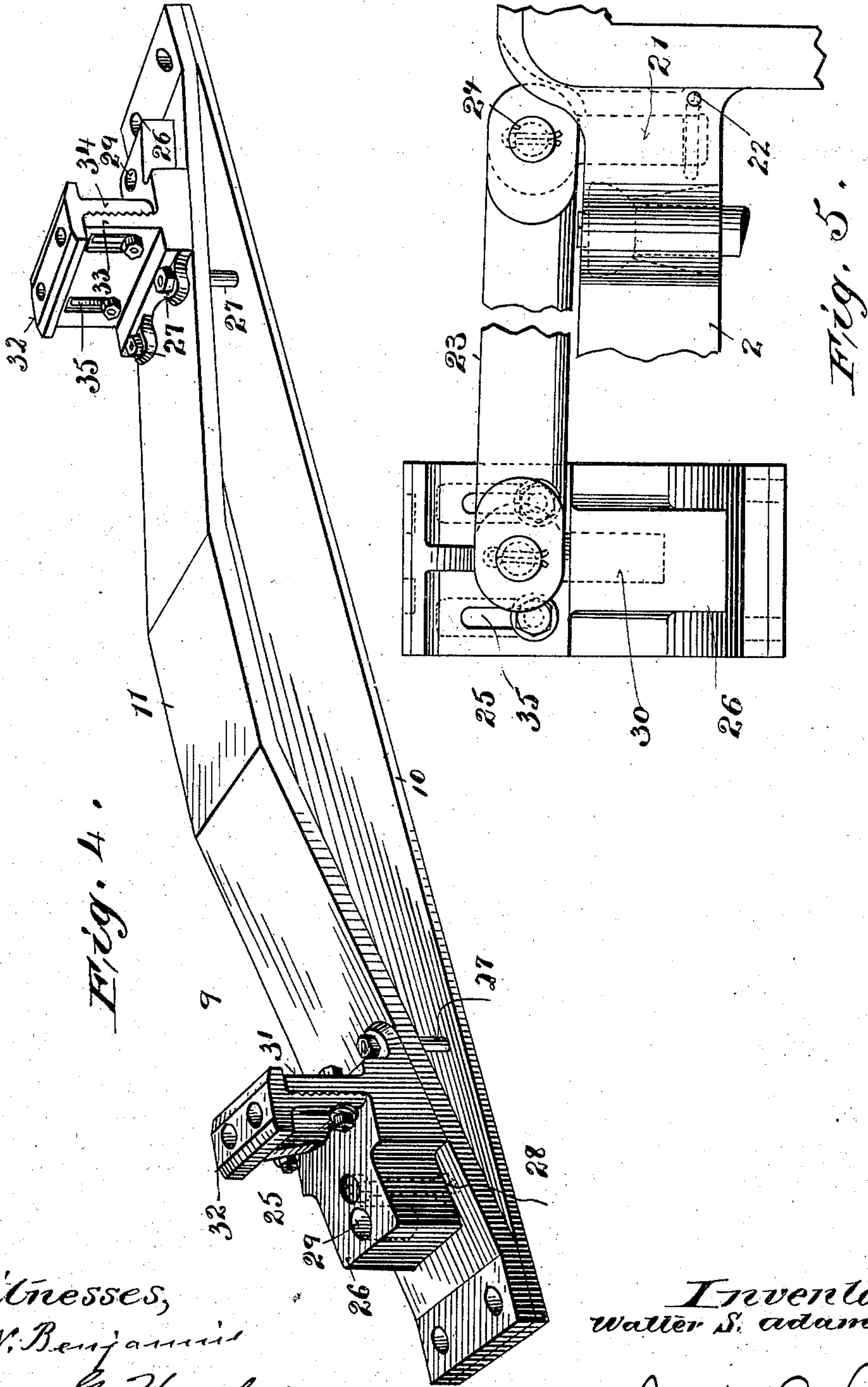
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UNITED STATES PATENT OFFICE.

WALTER S. ADAMS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JOHN A. BRILL, OF PHILADELPHIA, PENNSYLVANIA.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 709,071, dated September 16, 1902.

Application filed November 15, 1901. Serial No. 82,364. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. ADAMS, a citizen of the United States, residing in 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 relates to car-trucks, and has special relation to those known as "pivotal trucks."

The usual pivotal truck is provided with a bolster flexibly supported thereon and upon which the car-truck is pivotally mounted, the said bolster being confined fore and aft between transoms which are rigidly secured to the side members of the truck-frame. The object of the transoms is to positively transmit the pressure or draft and backward movement of the truck to the bolster and thence to the car-body even though the bolster is capable of a vertical and slight endwise movement due to its flexible connection with the truck-frame. Such a construction involving transoms is more or less complicated and expensive. The side members of the truck-frame must be of such form and material that the transoms and other necessary parts may be readily and securely attached thereto. Provision must be made by complicated structure for flexibly supporting the bolster between the transoms. Besides, all such bars, braces, supports, &c., take up space which is most desirable and valuable for other apparatus and mechanism and compel a corresponding greater wheel-base. My invention seeks to avoid these objections by entirely dispensing with transoms and by transmitting the draft or pressure of the truck to the bolster by other and simpler means and by flexibly supporting the said bolster in a simple and effective manner. To the accomplishment of these objects and such others as may hereinafter appear, the invention consists in the novel parts and combinations of parts fully described herein and clearly set forth in the appended claims, reference being had to the accompanying drawings, forming a part of this specification, in which the same reference characters represent like parts throughout the several views, and in which—

Figure 1 is a plan view of a truck embodying my improvements. Fig. 2 is a side elevation of the same. Fig. 3 is an enlarged detailed view showing the relative positions of the several apertures in the yoke-frame. Fig. 4 is a perspective view of the bolster, having the rub block or plate at each end; and Fig. 5 is a detailed view, on an enlarged scale, of the connection between the rub blocks and the frame.

As shown in these figures, the truck is provided with the usual wheels and axles, together with a frame comprising the side bars or upper chords 2, lower angle-iron chords 3, secured to yokes 4, which embrace axle-boxes 5, the yokes being supported on top of the latter by springs 6 and being provided with extensions 7, to which the end bars 8 of the frame are secured all in the usual manner.

The truck-bolster 9, composed of the straight bottom bar 10 and upper arch-bar 11, the ends of which latter are secured to the ends of the bar 10, is flexibly supported by the semi-elliptic spring 12, to which it is firmly tied by the threaded stirrups or staples 13, passing about the spring tie-band 14. The ends of the springs 12 are supported in spring extensible links 15 from the upper side bar 2 of the frame by bolts having semispherical head 16, seated in corresponding recesses in said side bar, the apertures leading from said recess through which the bolts pass being flaring or conoidal, whereby said bolts can swing to a slight extent in all directions. The links are extensible and are cushioned by cast springs 17. They comprise the hangers 18, in which the ends of the spring 12 rest, sliding upon the bolts 19, between which and the heads of the bolts the coil-springs are located. The construction thus far described is of the usual or desired kind. The vertical web of the lower chord 3 is bent down at 3^a to allow more room for the ends of the extensible links 15.

In order to simplify the construction and obtain more room at the center of the truck, the transoms, which usually extend across the frame in front and back of the bolster, are dispensed with. While this may be accomplished in various ways, the one that now seems to present the greatest advantages is

as follows: The upper chord or side bar 2 of the frame is provided with a vertical cylindrical aperture 20, located, preferably, between the yoke and semispherical seat for the bolt-heads 16 and a little to the inner side of the latter. An eye pin or bolt 21 is placed in this hole 20 and is held therein by the key 22, extending transversely through it. A bar, rod, or link 23, having a forked end, is attached to said pin 21 by means of a pivot-pin 24, also keyed in place and passing through the fork of the rod 23 and eye of pin 21. This constitutes a universal joint between the rod 23 and side bars 2, for the pivot 24 allows a vertical and the pin 21 a horizontal movement of the bar 23. Such a bar is placed at each side of the frame and at their other ends are secured in any desired manner to the bolster to transmit the draft or pressure or movement of the truck to the bolster and to take the place of the transoms before mentioned. Of course the hole 20 could be located elsewhere, if preferred; but that shown is deemed more suitable under all circumstances. As a means of conveniently securing the bars 23 to the bolster 9, the rub plates or blocks 25 are provided each with an extended base 26, beveled to fit the inclined upper side of the arch-bar 11, to which it is securely fixed by bolts 27 and 28, passing therethrough and through both bars of the bolster. An aperture 29, corresponding to the hole 20 in the frame, is provided in this extended and thick base 26 of the rub-block, in which is rotatably secured the eye-pin 30, similar to 21, and with which similar connections with bar 23 is made, thus providing a universal connection with the other end of the said bar. The bolster is thus permitted to partake without restraint of vertical or transverse movement. The rub-plates or side-bearing blocks have standards 31, extending from the base 26 to the top plate 32, which may be provided with depressions for the reception of antifriction devices. The said top plate is made adjustable in height by making the standard in two separable overlapping parts 33 and 34, as shown, and bolting them together, cooperating slots 35 for the bolts being provided, and the overlapping faces being roughened or corrugated as indicated. The central part of bolster 9 may be arranged in any way to support the center-bearing plates or to receive the car body-bolster.

The invention is not to be limited to the specific details described, as I hold it to include all such changes, modifications, or alterations as fairly fall within its spirit.

What I claim is—

1. In a car-truck, the combination with the truck side frames, of a bolster, means for supporting said bolster from the side frames, and inextensible means carried by said bolster and connected directly to the side frames for transmitting the draft tension.

2. In a car-truck, the combination with the

truck side frames, of a bolster, means for supporting said bolster from said side frames, and an inextensible link carried by said bolster and connected directly to said side frames for transmitting the draft tension.

3. In a car-truck, the combination with the truck side frames, of a bolster resiliently supported from the side frames, and a pivoted inextensible link carried by said bolster and connected directly to the side frame at a point adjacent the pedestal thereof.

4. In a car-truck, the combination with the side frames, links supported thereby, and a semi-elliptic spring supported by said links; of a bolster supported by said spring, and a pivoted link interposed between said bolster and side frames for transmitting the draft tension.

5. In a car-truck, the combination with the side frames, links supported thereby, and a semi-elliptic spring supported by said links; of a bolster supported by said spring, and a universal connection interposed between said bolster and side frames for transmitting the draft tension.

6. In a car-truck, the combination with the truck side frames, links supported from said frames, a semi-elliptic spring having its ends supported by said links, a trussed bolster having extended ends secured upon said elliptic spring, and a pivoted link interposed between said bolster and said side frames.

7. In a truck, the combination with a frame, of a bolster capable of a vertical and horizontal movement, a rub plate or block carried thereby, said block and frame having apertures therein, eye pins or bolts in said apertures, and links forked at each end and connected with said eyepins, whereby a positive connection for the bolster having universal joints is provided.

8. In a car-truck, the combination with the truck side frames, extensible links supported thereby, and semi-elliptic springs supported by said links; of a bolster supported upon the said springs, and a link forming a rigid connection between said bolster and the side frames.

9. In a car-truck, the combination with the side frames, a bolster and means for resiliently supporting said bolster from the side frames; of a link, a pin pivotally connected to one end of said link, and pivotally secured to said bolster, and a pin carried by the other end of said link and secured to the side frame.

10. In a car-truck, the combination with the truck side frames, a bolster, and means for resiliently supporting the same from said side frames, of a forked link, pins pivotally mounted in the forked ends of said link, and means for rotatably securing said pins in said side frames, and to means connected to said bolster.

11. In a car-truck, the combination with the truck side frames, extensible links depending therefrom, a semi-elliptic spring having its ends supported in the ends of said links, a bol-

ster having its ends supported upon said springs, and a wear plate or block carried by said bolster; of a forked link, carrying a pin at one end rotatably secured in an aperture in said block, the other end of said link also carrying a pin rotatably secured in an aperture in said side frames.

12. In a truck, a rub or side-bearing plate having standards, the said standards being split and roughened on their cooperating faces and bolts to secure said split portions together at any point to permit the height of the bearing-plate to be adjusted.

13. In a truck, a frame, a bolster supported thereon, rub plates or blocks secured to the bolster, and means connecting said rub-plates with the frame for draft purposes.

14. In a car-truck, a truck-frame, a bolster flexibly supported thereon, rub blocks or chairs mounted on said bolster one at either end, bars, rods, or links extending one from each block to a point on the frame toward one end thereof, and universal connections of said rods with the bolster and frame.

15. In a car-truck, a frame, a bolster flexibly supported thereon, bearing or rub blocks on each end of the bolster, each being provided with an enlarged base having an aperture therein, the side of the frame in advance of the bolster also having a similar aperture, pins rotatably secured in said apertures, and having eyes in their projecting ends, and rods extending between said pins and connected with said eyes whereby universal joints at the ends of the rods are obtained.

16. In a car-truck, a frame, a bolster comprising a lower plate, and an upper arch-plate, semi-elliptic springs to which the ends of said bolster are bolted, spring extension-links loosely suspended from the upper chord of the frame and supporting the ends of the elliptic spring, rub-plates mounted on said arch-bars and adjustable in height, and bars or rods extending from the said rub-plates to points in advance on the frame and having universal connections at their ends.

17. In a car-truck, the combination with the truck side frames, and means for connecting said side frames at their extremities; of a bolster supported at its ends from said side frames, and a pivoted inextensible link interposed directly between said bolster and side frames for limiting the lateral movement of said bolster.

18. In a car-truck, the combination with the

truck side frames, of a bolster supported therefrom, side bearings or wear-blocks carried near the ends of said bolster, and means interposed between said side bearings and the side frames for transmitting the draft tension.

19. In a car-truck, the combination with the truck side frames, extensible links supported thereby, and semi-elliptic springs hung from said links; of a bolster supported upon said springs, side bearings or wear-blocks carried by said bolster, and a link interposed between said side bearings and said side frames.

20. In a car-truck, the combination with the truck side frames, extensible links supported thereby, and semi-elliptic springs hung from said links; of a bolster having its ends resting upon said springs, side bearings or wear-blocks carried by said bolster, and a universal connection interposed between said side bearings and side frames for transmitting the draft tension.

21. In a car-truck, the combination of the truck-frame including side frames, a bolster, semi-elliptic springs suspended from said side frames, supporting said bolster, and links interposed between said bolster and side frames, for transmitting the draft tension to the bolster.

22. In a car-truck, the combination of the truck-frame including the side frames, a bolster, semi-elliptic springs supporting said bolster from said side frames, and a universal connection interposed between said bolster and side frames, for transmitting the draft tension.

23. In a car-truck, the combination of the truck-frame, including side frames, semi-elliptic springs hung from said side frames, a bolster, and means interposed between said bolster and side frames, for transmitting the draft tension.

24. In a car-truck, the combination of the truck-frame, including side frames, semi-elliptic springs hung from said side frames, a bolster supported by said springs, and a pivoted link interposed between said bolster and side frames.

Signed at the city and county of Philadelphia, State of Pennsylvania, this 25th day of January, 1901.

WALTER S. ADAMS.

Witnesses:

VINCENT ANDERSON,
HENRY C. ESLING.