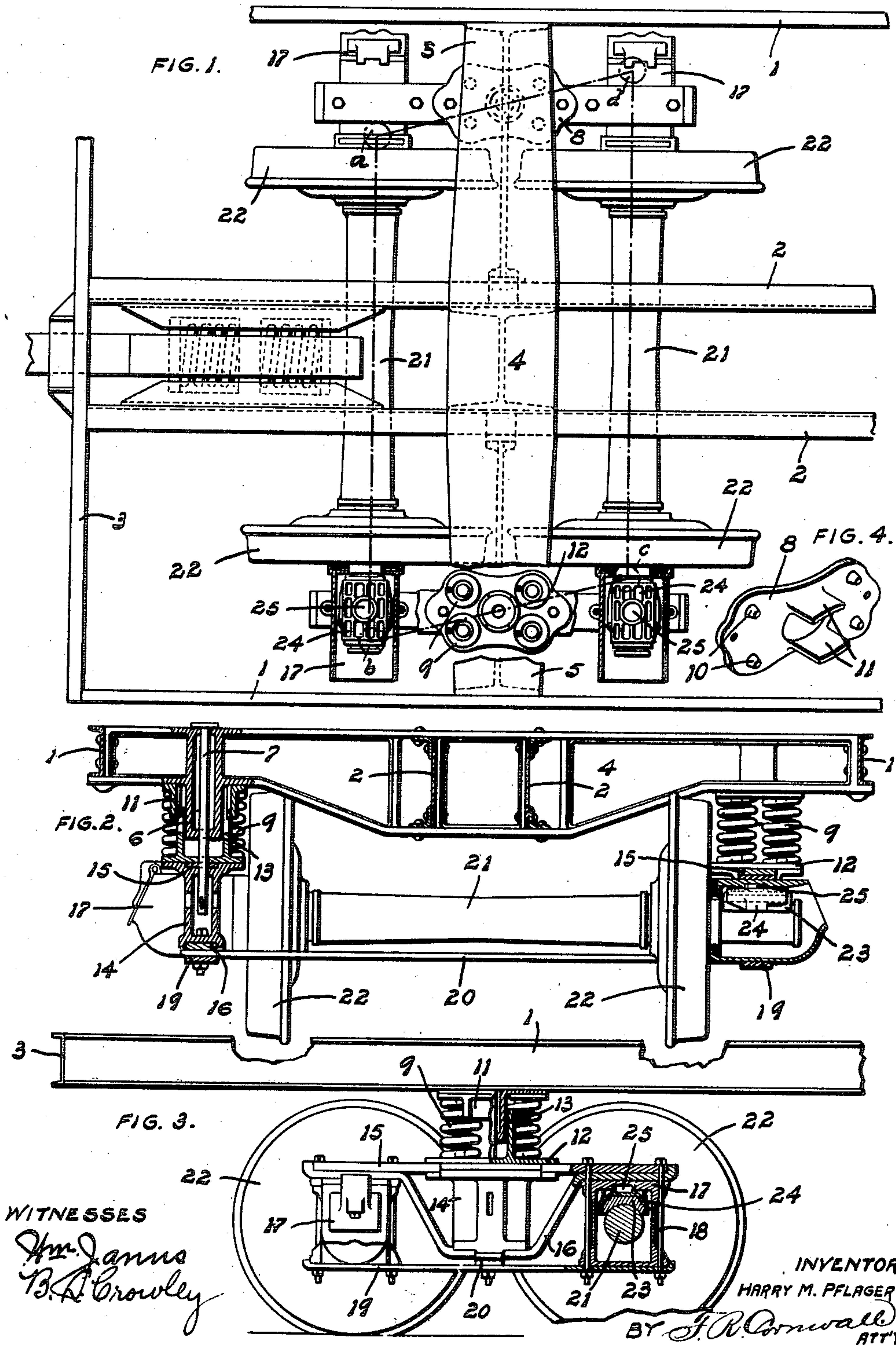


H. M. PFLAGER.
CAR CONSTRUCTION.
APPLICATION FILED JAN. 23, 1911.

995,560.

Patented June 20, 1911.



UNITED STATES PATENT OFFICE.

HARRY M. PFLAGER, OF ST. LOUIS, MISSOURI.

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Specification of Letters Patent. Patented June 20, 1911.

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To all whom it may concern:

Be it known that I, HARRY M. PFLAGER, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Car Construction, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view of one end of my improved construction; Fig. 2 is a sectional view through the same in the vertical plane of the bolster; and Fig. 3 is a side elevational view of the same partly in section. Fig. 4 is a detail view of one of the spring followers.

This invention relates to a new and useful improvement in car construction, the object being to support the car at or near its four corners instead of through the medium of the center plate coincident with the longitudinal axis of the car, as is now commonly practiced.

Another object of the invention is to provide means whereby the arch bars connecting the journal boxes on each corner of the car may be independently swiveled upon the underframe or bolster of the car, thus dispensing with the heavy construction of truck bolsters, spring planks and column guides now commonly employed.

Still another object is to swivel the brasses in the journal box whereby the wheels may be displaced laterally so as to accommodate themselves to the track and save flange wear.

With these objects in view, the invention consists in the construction, arrangement and combination of parts, all of which will hereinafter be more particularly described and pointed out in the claims.

In the drawings, 1 indicates the side sills, 2 the center sills, and 3 the end sills, all such parts being of any usual or approved construction.

4 indicates the body bolster which is preferably made deepest at its center to accommodate the center sills. Near each end of this bolster are laterally extending flanges

5 constituting a bearing for springs or a spring seat, and from the center of this bearing depend pivot extensions 6 through which pass king bolts 7.

8 is a spring follower constituting a spring seat for the supporting springs 9 which are held in position thereon by means of the teats or lugs 10.

11 are interlocking extensions extending down alongside the king-pin bearing or pivot extension 6.

12 is a spring seat or follower preferably fixed to the casting 14 and having an upwardly extending tubular bearing 13 co-operating with the bearing 6. This tubular bearing 13 is recessed at its upper edges to receive the lugs 11 whereby the spring followers are caused to rotate together about the cylindrical king-pin bearing as a center, and are permitted telescopic movement to accommodate expansion and compression of the supporting springs 9 interposed between them.

14 is a casting formed with an opening to receive the king-pin 7 and having slots in the side walls thereof for the passage of the locking pin which holds the king-pin in position. This casting 14 constitutes a support for the spring seat 12 which is preferably attached thereto, and also serves as a strut for the truss-structure of which 15 is the compression member and 16 the tension member, both of said members being seated in appropriate grooves in the top and bottom faces of the strut casting 14. The bars 15 and 16 extend over journal boxes 17 where they are secured by means of suitable pedestal bolts 18, said bolts also passing through the bottom tie-bar 19 which secures the lower portions of the box together.

20 indicates a cross tie-bar extending across the truck frames, and tying them together.

21 are the axles which have the wheels driven thereon, as usual. These axles have collared ends and pass into the journal boxes where they coöperate with brasses 23, said brasses being held in position by wedges 24. Instead of these wedges fitting tightly against the top wall of the box so that they

are held rigidly in position, I provide each wedge with a circular boss 25 on its upper face which coöperates with a seat in the top wall of the box.

5 In operation, when the car takes a curve, the front pair of wheels will be displaced laterally in one direction and the companion pair correspondingly displaced in the opposite direction. In Fig. 1, I have indicated
10 by dotted lines, *a*, *b*, *c*, and *d*, this displacement, said lines passing through the centers of movement which are, respectively, the king-pin 7 and the bosses 25. It is obvious that, when the car again enters the straight
15 track, the truck frames will again assume a right-angular relation to the bolsters 4. It will be observed that in taking curves the wheel axles and truck frames are maintained in parallelism, each collared axle assisting,
20 by its thrust in opposite directions, in so preserving this relation. The tie-bar 20 is so connected that it permits this slight pivotal action of each truck frame, and, if desired, instead of having separate bolts for
25 securing the tie-bar in position, the king-bolt may pass therethrough and be provided with a nut on its lower end. The spring followers are caused to rotate in unison, and in this manner torsional strain on the springs is
30 avoided, but the expansive and compressive action of the springs is not interfered with, due to the telescopic construction of the tubular extensions of said spring follower.

Instead of swiveling the wedges in the
35 journal boxes, it is obvious that the journal boxes themselves may be swiveled in the side truck frames, and in this manner non-swiveling wedges could be employed.

What I claim is:

40 1. In car construction, the combination of an under framing, side truck frames each having two or more journal boxes, said frames being pivotally connected to the under framing and connections between the
45 ends of each pair of frames at the ends of the car whereby parallelism is maintained, the connected frames at one end of the car being movable independently of the connected frames at the opposite end of the car.
50 2. In car construction, an under frame, truck frames each pivotally connected thereto, said truck frames having two or more journal boxes, wheels and axles mounted in
55 said journal boxes and having a swinging relation thereto, and means for connecting the ends of each pair of truck frames for maintaining parallelism thereof.

3. In car construction, a bolster, truck side frames each having pivotal relation to
60 said bolster, journal boxes, and axles mounted in said journal boxes and extending across from side frame to side frame for maintaining parallelism between said side frames.

65 4. In car construction, a bolster, truck side

frames each having pivotal relation to said bolster, journal boxes, and axles mounted in said journal boxes, said axles having pivotal relation to said journal boxes.

5. In car construction, an under frame, 70 side truck frames each having pivotal relation thereto, springs interposed between side truck frames and the under frame, a plurality of journal boxes in each of said side truck frames, and axles in said journal boxes 75 and extending across from truck frame to truck frame the connected frames at each end of the car being independently movable.

6. In car construction, a side truck frame having a pivotal bearing, an underframe 80 having a pivotal bearing in the vertical plane of the said side truck frame, springs arranged around said pivotal bearing and interposed between said underframe and said side truck frames, and spring seats for 85 said springs, said spring seats having telescopic connection with each other.

7. In car construction, a side truck frame having a pivotal bearing, an underframe having a pivotal bearing in the vertical 90 plane of the said side truck frame, springs arranged around said pivotal bearing and interposed between said underframe and said side truck frames, and spring seats for said springs, said spring seats being connect- 95 ed so as to move in unison and permit expansion and compression of said springs.

8. In car construction, an underframe, side truck frames each having pivotal relation thereto, journal boxes carried by the 100 said side truck frames, axles mounted in said journal boxes, wheels on said axles, and connections permitting said axles to occupy other than right-angular relation to said side truck frames. 105

9. In car construction, an underframe, side truck frames each having pivotal relation thereto, journal boxes, axles mounted in said journal boxes, wheels on said axles, 110 brasses and wedges interposed between said axles and said journal boxes, said wedges having pivotal relation to said journal boxes and capable of independent horizontal movement relative thereto.

10. In car construction, an underframe 115 having pivot bearings arranged at or near the four corners of the underframe, side truck frames having pivotal relation to each of said pivot bearings, journal boxes arranged in said side truck frames, axles arranged in said journal box, and connections 120 permitting said axles to assume other than right-angular relations to said side truck frames and their journal boxes when the latter are swung upon their pivots. 125

11. In car construction, the combination of an underframe, side truck frames each having pivotal relation thereto, journal boxes mounted thereon, axles mounted in 130 said journal boxes and having pivotal rela-

tion thereto whereby said axles may assume other than right-angular relation to said side truck frames and their journal boxes, and a tie-bar connecting said side truck frames at points coincident with their axes of movement.

In testimony whereof I hereunto affix my

signature in the presence of two witnesses, this 17th day of January, 1911.

HARRY M. PFLAGER.

Witnesses:

M. P. SMITH,

BLANCHE L. CROWLEY.