

No. 773,674.

PATENTED NOV. 1, 1904.

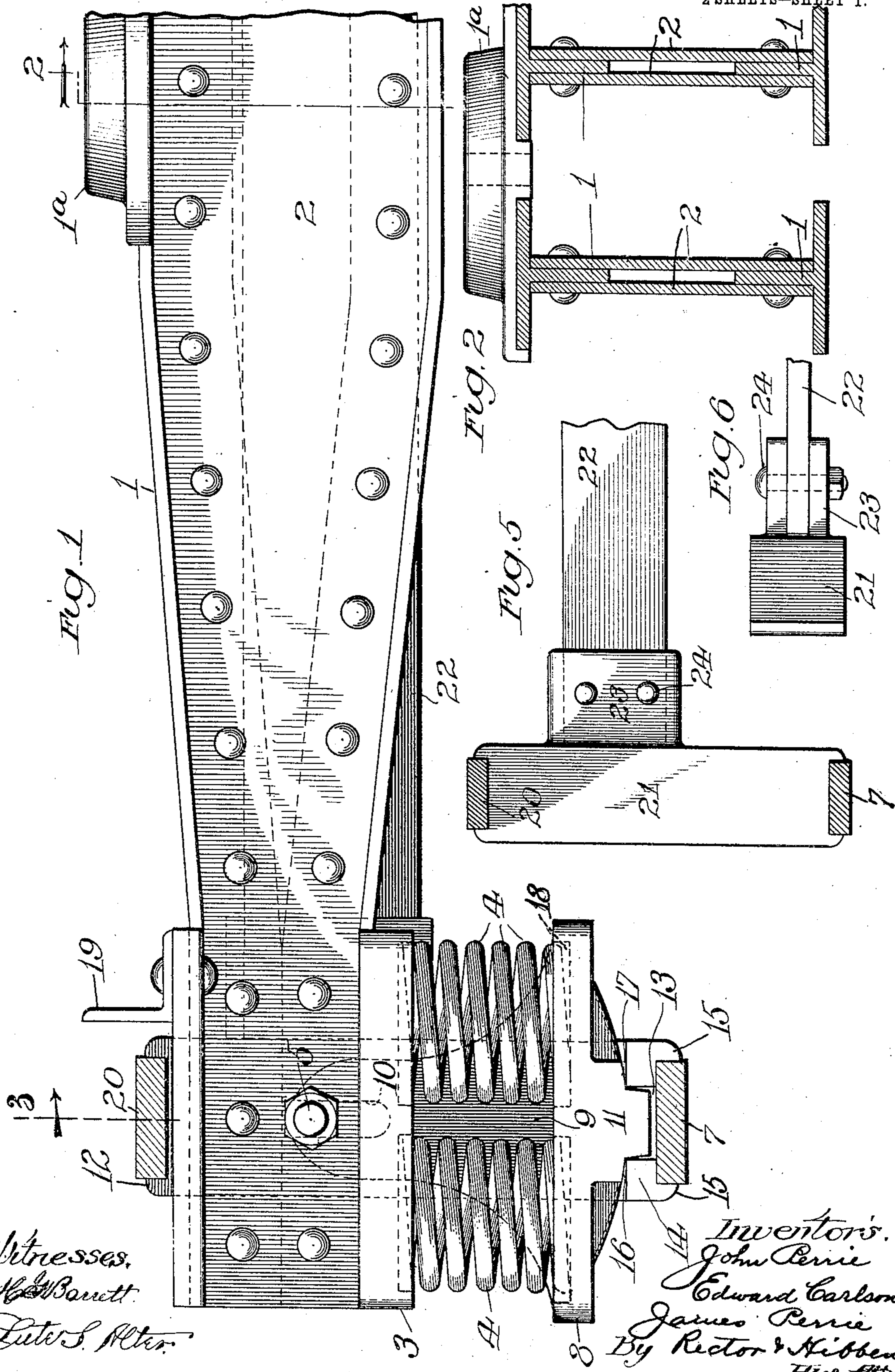
JOHN PERRIE, EDWARD CARLSON & JAMES PERRIE.

BOLSTER.

APPLICATION FILED AUG. 19, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



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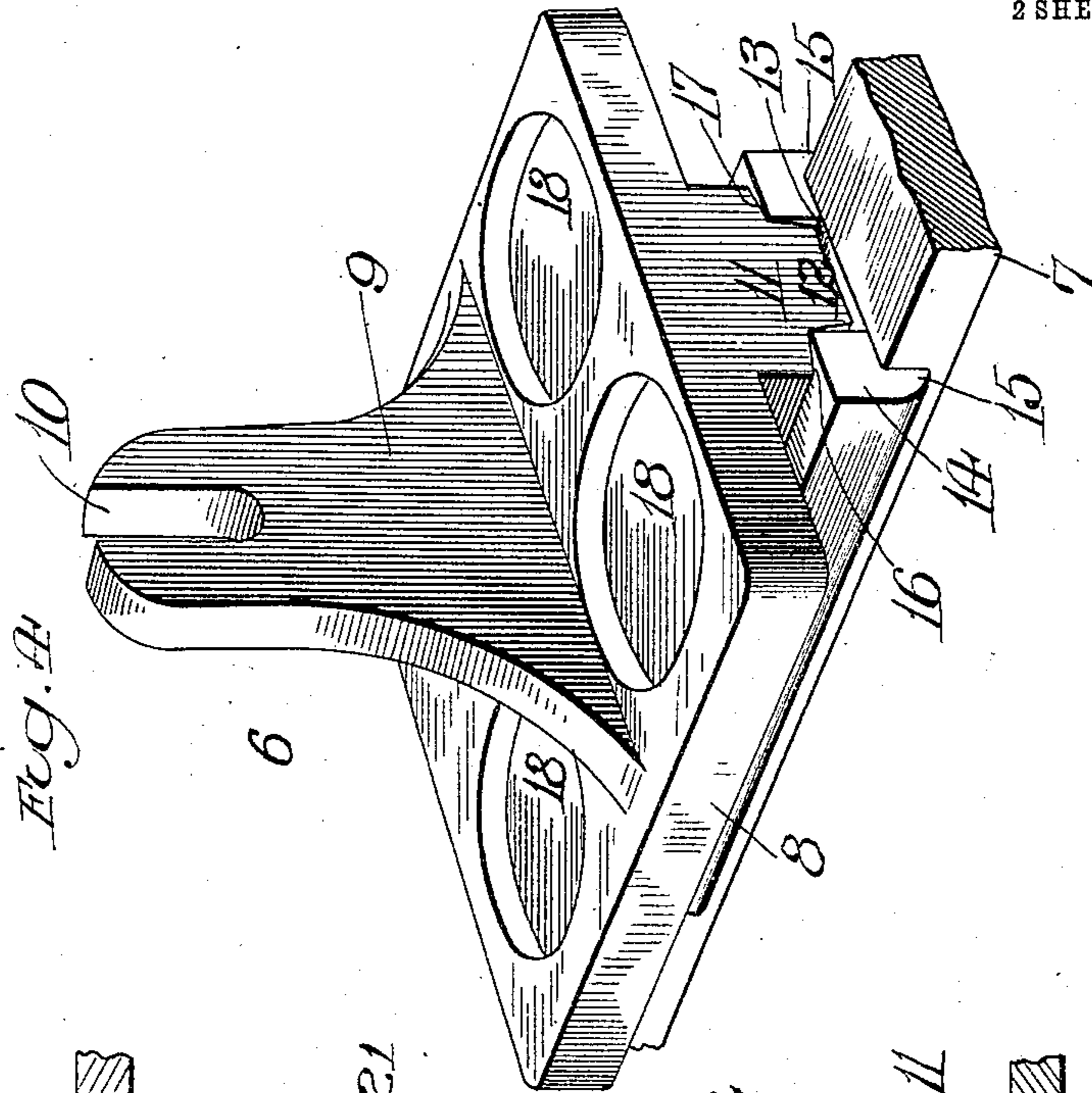
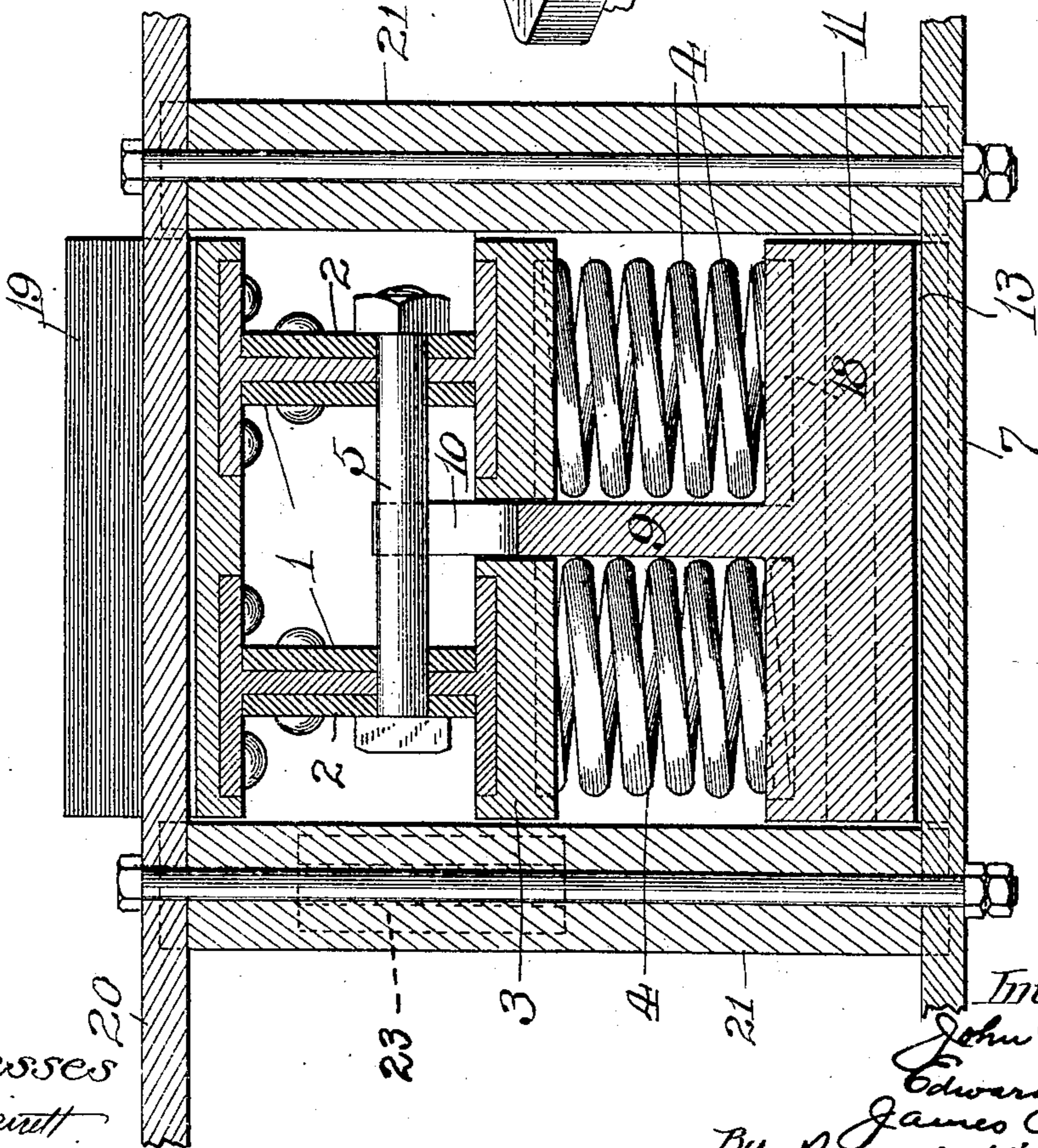


Fig. 3



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UNITED STATES PATENT OFFICE.

JOHN PERRIE, EDWARD CARLSON, AND JAMES PERRIE, OF CHICAGO,
ILLINOIS.

BOLSTER.

SPECIFICATION forming part of Letters Patent No. 773,674, dated November 1, 1904.

Application filed August 19, 1902. Serial No. 120,221. (No model.)

To all whom it may concern:

Be it known that we, JOHN PERRIE, EDWARD CARLSON, and JAMES PERRIE, residing at Chicago, Cook county, Illinois, have invented certain new and useful Improvements in Bolsters, of which the following is a specification.

Our invention relates to bolsters for cars; and the object thereof is to provide a novel and efficient construction of bolster, as well as one provided with simple and efficient means, whereby the car-body and bolster may have a swing motion with respect to fixed parts of the car-truck, with the result that, particularly in running around curves and over joints, the car-body may have a lateral and easy swing movement to one side or the other and be restored with the same ease of movement, so that all jars and shocks to the car or its contents are avoided or lessened by the cushioning of the springs. We also provide means whereby such parts as safety-chains, brake-hangers, live and dead lever-guides may be hung from or supported by a member which is maintained at a fixed distance from the rails and from the axes of the wheels instead of being supported by a vertically-movable bolster.

The various advantages in the construction and operation of our bolster will be readily apparent from the description hereinafter made.

In the drawings, Figure 1 is a side elevation of one end of our new bolster; Fig. 2, a section on line 2 of Fig. 1; Fig. 3, a section on line 3 of Fig. 1; Fig. 4, a perspective of the rocker; and Figs. 5 and 6 detail views of the novel means for supporting the brake-hangers, &c.

The bolster proper is of novel construction, being made of commercial iron or steel, comprising two upper and lower pairs of T-irons 1, joined by the pair of side plates 2, all as clearly shown in Figs. 1 and 2, the center plate 1^a being arranged between the horizontal portions of the upper pair or set of T-irons. By this construction of bolster embodying T-irons and plates arranged as described we provide a most efficient and simple bolster.

Both ends of the bolster are similarly made and equipped with our improvements for obtaining side swing, and consequently a description of one end of the bolster, as shown in Fig. 1, will apply to both ends. However, our side-swing improvements may be applied to bolsters of other construction. Now describing the side-swing improvements an upper spring-seat 3 is secured in suitable manner to the under horizontal part or member of the lower pair of T-irons 1 and preferably recessed below, as shown by dotted lines in Fig. 3, so as to provide seats proper to receive the upper ends of springs 4. A bolt or pin 5 is passed through the vertical member of the lower pair of T-irons and immediately above said plate 3.

A rocker 6 is arranged to operate between the ends of the bolster and the lower arch-bar 7 and to afford the easy side swing as distinguished from that rapid and violent movement resulting from the use of balls or rollers. This rocker comprises a plate 8, having an upward extension 9 passing through the bolster and between the upper seats 3 and is provided with a vertical slot 10, which is adapted to receive the pin or bolt 5, as seen in Fig. 3, and to accommodate the vertical movement of such bolt. This rocker has one or more transverse depending extensions or lugs 11, whose lower corners are cut away to form a narrower portion 12, arranged to fit in a slot or recess 13 in a block or casing 14, resting on the lower arch-bar 7 and held thereto by means of the lips or gibs 15 thereon. The lower surfaces or faces 16 and 17, which bear upon the casting 14, are slightly beveled, being here cut on arc of a radius taken from the working bearing of the center plate, which radius will insure a horizontal movement of the bolster. The side faces of the extension or rib 12 are also beveled, and thereby made smaller than the recess or socket which receives it, to the end that it may not interfere with the swing motion of the bolster and rocker. Obviously the same results would be accomplished whether there are several lugs or a single continuous lug on the under side of the rocker-plate.

By preference the rocker swings on such an arc that the bolster may move an inch or an inch and a half or somewhat more before leaving to any appreciable extent the horizontal plane in which it normally lies, with the result that the car-body is maintained in a horizontal plane during ordinary movements or conditions of track.

The upper side of the rocker-plate is provided with recesses or sockets 18, adapted to receive and hold in place the lower ends of the sets of springs 4.

It is evident from the foregoing that the described structure permits of a lateral or side swing of the bolster in both directions, the rocker bearing on the face 16 when moved or rocked in one direction and on the other face, 17, when rocked in the opposite direction. To limit the lateral movement of the bolster; an angle-plate 19 is secured to each end of the bolster in such position as to strike against the top arch-bar 20 after a predetermined movement of the bolster. The support or connection between the ends of the bolster and the lower arch-bars is thus a rocking one by reason of the interposition of the rocker above described, which affords in a simple and efficient manner all the desirable swing motion. Moreover, the construction is such that a comparatively gentle and uniform lateral movement of the bolster is obtained and a return thereof with the same gentle movement, such movement being lateral and against the springs, which are compressed by such movement and which restore the bolster and car-body at the proper time.

By preference the springs are normally in a vertical position and have a fixed relation with respect to the bolster, as indicated in the drawings, with the result that when the bolster moves or swings laterally in one direction or the other the springs will assume a position away from the vertical according to the degree of swing.

Each end or side of the car-track is provided with suitable column-posts 21, as shown in Figs. 1, 3, and 5, between which posts is arranged a transverse bar 22, on which is to be hung or supported the brake-hangers, brake-levers, and safety-chains, and the like. As shown in Figs. 5 and 6, the column-posts have on their inner faces a projecting lug 23, provided with a pocket to receive the ends of the transverse bar 22, which is secured therein in suitable manner, as by the rivets 24. The advantage of so supporting the brake-hangers, &c., is obvious. This transverse bar is always at a fixed distance from the rails and from the axes of the car-wheels, and consequently the amount of load of the car and the condition or character of the track has no effect upon the height and proper position of the brake-hangers, brake-rods, and safety-chains, &c.

It is to be understood that the springs 4 in

addition to subserving their usual functions act to cushion the side swing of the bolster and to restore the bolster to normal position, as hereinbefore explained, and while we have shown these springs in an upright position they can be set at an angle, especially if stronger cushioning should be desired.

We claim—

1. The combination, with a bolster and supports for the ends thereof, of rockers arranged in a normally vertical position and interposed between said supports and the bolster ends.

2. The combination, with a bolster and suitable supports, of spring-seats connected with the bolster ends and having a fixed relation with respect to the bolster, rocking levers arranged between the bolster and supports, and springs interposed between said supports and seats.

3. The combination, with a bolster and suitable supports, of rocking levers arranged to rock on said supports and extending upwardly and operatively connected with the bolster.

4. The combination, with a bolster and its lower arch-bars, of rockers near the ends of the bolster, each rocker comprising a plate arranged to rock on said bar and having an upward extension engaging said bolster.

5. The combination, with a bolster and its lower arch-bars, of a pin or bolt arranged near each end of the bolster, and a rocker near each end of the bolster, each rocker comprising a plate arranged to rock on said arch-bar and having an upward extension provided with a slot to receive said pin or bolt.

6. The combination, with a bolster and the lower arch-bars arranged below the ends thereof, of blocks secured to said arch-bars, and rocking levers arranged to rock on said blocks and extending upwardly and engaging the bolster.

7. The combination, with a bolster and the lower arch-bars arranged below the ends thereof, of recessed blocks secured to the arch-bars, rocking levers extending upwardly and engaging the bolster, and lugs depending from the levers and received by the recesses of said blocks.

8. The combination, with a bolster and its lower arch-bars, of recessed blocks on the respective arch-bars, and rockers arranged between the ends of said bolster and said blocks, each rocker comprising a depending lug provided with a rib received by the recess of the block, each lug having rocking surfaces bearing on the blocks.

9. The combination, with a bolster and its lower arch-bars, of blocks having depending lugs engaging the sides of the arch-bars, and rocking levers arranged between the bolster and said blocks, each lever comprising a plate provided with an extension arranged to operatively engage the bolster.

10. The combination, with a bolster and its lower arch-bars, of recessed blocks having

lips 15 engaging such bars, and rockers arranged between said blocks and the bolster ends, each rocker comprising a plate 8, an upward extension 9 engaging the bolster and a downward extension or lug 11 whose lower end is received by its block.

11. The combination, with a bolster and its lower arch-bars, of recessed blocks on the bars, rockers arranged to rock on said blocks and engaging the ends of the bolster, each rocker comprising a plate bearing on its block and having an upward extension engaging its end of the bolster, said plate having recesses in its upper face, and springs received by such recesses and arranged between such rocker-plate and the bolster end.

12. The combination, with a bolster and its lower arch-bars, of recessed blocks 14 on the arch-bars, rockers engaging each end of the bolster and each comprising a plate 8 having a lug 11 provided with a rib 12 received by the recess in its block, said lug having rocking surfaces 16, 17 bearing on said block, said plate 8 having an extension 9 provided with a slot 10, and a bolt 5 arranged on the bolster and received by said slot.

13. The combination, with a bolster and its lower arch-bars, of seats 3 secured to the ends of the bolster, and rockers arranged to rock on said bars and passing into said plates and arranged to engage the bolster.

14. The combination, with a bolster and its lower arch-bars, of spring-seats secured to the ends of the bolster, bolts 5 arranged in said bolster and above said seats, and rockers arranged to rock on said bars and each having a slotted extension 9 passing into the bolster and engaging said bolts.

15. The combination, with a bolster and its lower arch-bars, of spring-seats 3 secured to the ends of the bolster and recessed on their under sides, bolts 5 arranged in said bolster and above said seats, and rockers arranged to rock on said bars and having a plate 8 recessed on its upper face, each rocker having a slotted extension 9 passing into the bolster and engaging its bolt, and springs 4 seated in the recesses in said plates.

16. A bolster comprising two pairs of T-irons, the vertical members of the irons of each pair being directed toward each other, side plates secured to such members, upper spring-seats secured to the outer ends of the horizontal members of the lower irons, lower spring-seats and springs interposed between said seats.

17. The combination, with a bolster and suitable supports, of rockers arranged between the bolster and supports, and springs also arranged between the bolster and supports and cooperating with the rockers, the upper ends of the springs having a fixed relation with respect to the bolster.

18. The combination, with a bolster and suitable supports, of rockers interposed between

said supports and bolster, and springs also interposed between such supports and bolster and arranged in a normally vertical position, said springs having a fixed relation with respect to the bolster.

19. The combination, with a bolster and suitable supports, of plates arranged to rock on said supports, and springs arranged in a normally vertical position between the bolster and plates and having a fixed relation with respect to the bolster.

20. The combination, with a bolster and suitable supports, of spring-seats secured to and having a fixed relation with the bolster ends, plates arranged below said seats and adapted to rock on said supports, and springs arranged in a normally vertical position between the spring-seats and plates.

21. The combination, with a bolster and suitable supports, of rockers arranged between the bolster and supports, each rocker comprising a plate arranged to rock on one of the supports and provided with an upward extension engaging the bolster, and springs arranged on either side of said upward extension and interposed between the bolster and plates of the rockers.

22. The combination, with a bolster and suitable supports, of pins arranged transversely of the bolster near the ends thereof, rockers positioned between the bolster and supports, each rocker comprising a plate arranged to rock on one of the supports and having an upward extension provided with a slot to receive its pin, and springs arranged between the plates and the bolster.

23. The combination, with a bolster and suitable supports, of pins arranged transversely of the bolster near the ends thereof, spring-seats secured to the bolster ends below said pins, rockers positioned between the bolster and supports, each rocker comprising a plate arranged to rock on one of the supports and having an upward extension provided with a slot to receive its pin, and springs arranged between said spring-seats and plates.

24. The combination, with a bolster and suitable supports, of rockers arranged between the bolster and supports, each rocker comprising a plate, arranged to rock on one of the supports and provided with a substantially central upward extension engaging the bolster, and a pair of springs arranged on either side of said extension and disposed between the bolster and plates of the rockers.

25. The combination of a truck-frame, a bolster, a supporting spring or springs, and a saddle constituting one of the bearings for said spring or springs, said saddle being so mounted that it can tip or tilt and thereby compress one portion of the spring structure to a greater extent than another when the bolster has lateral movement, substantially as specified.

26. The combination of a truck-frame, a truck-bolster, a supporting spring or springs,

and a saddle constituting one of the bearings for said spring or springs, said saddle having rocking connection both with the truck-frame and bolster, whereby lateral movement of the
5 bolster causes tipping or tilting of the saddle and a compression of one portion of the spring structure to a greater extent than another, substantially as specified.

27. The combination of a truck-frame, a
10 truck-bolster, a supporting spring or springs, and a saddle constituting one of the bearings for said spring or springs, said saddle having rocking connection with both truck-frame and bolster, and one of said connections being
15 slotted so as to permit both vertical and lateral movement of the bolster, substantially as specified.

28. In a car-truck, a bolster, springs supporting said bolster and means whereby all
20 transverse stresses cause an uneven distortion of the springs, thereby causing them to resume their normal positions and reducing all transverse vibrations.

29. In a car-truck, a bolster, springs supporting said bolster, pivoted means for supporting said springs so that when said means operate the springs will be unevenly distorted and thereby caused to resume their normal position.

30. In a car-truck, the bolsters, springs supporting said bolster, and means for moving said springs out of their normal position, so that they will be unevenly deflected whenever transverse stresses are applied to the bolster.

31. In a car-truck, a bolster, springs adapted to be unevenly deflected by transverse stresses on the track, whereby said uneven deflection will cause the bolster and springs to resume their normal position when said stresses are removed.

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