

G. G. FLOYD.
CAR TRUCK.

APPLICATION FILED FEB. 24, 1908.

924,653.

Patented June 15, 1909.

2 SHEETS—SHEET 1.

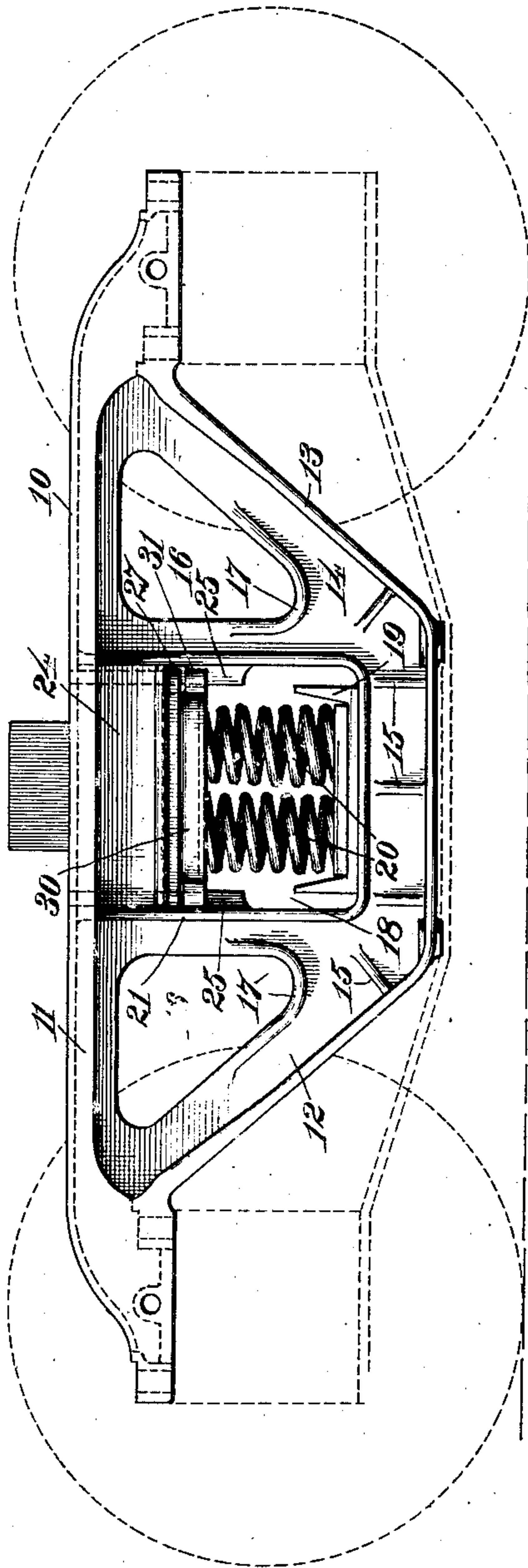


Fig. 1.

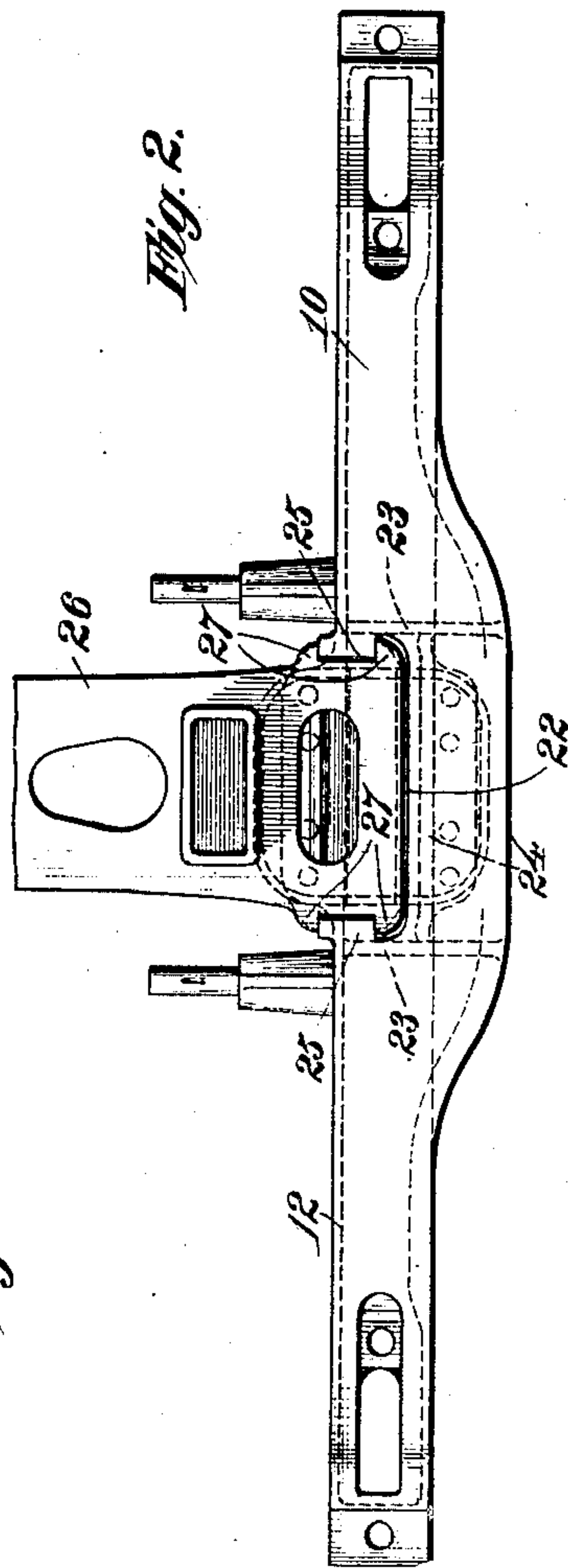


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

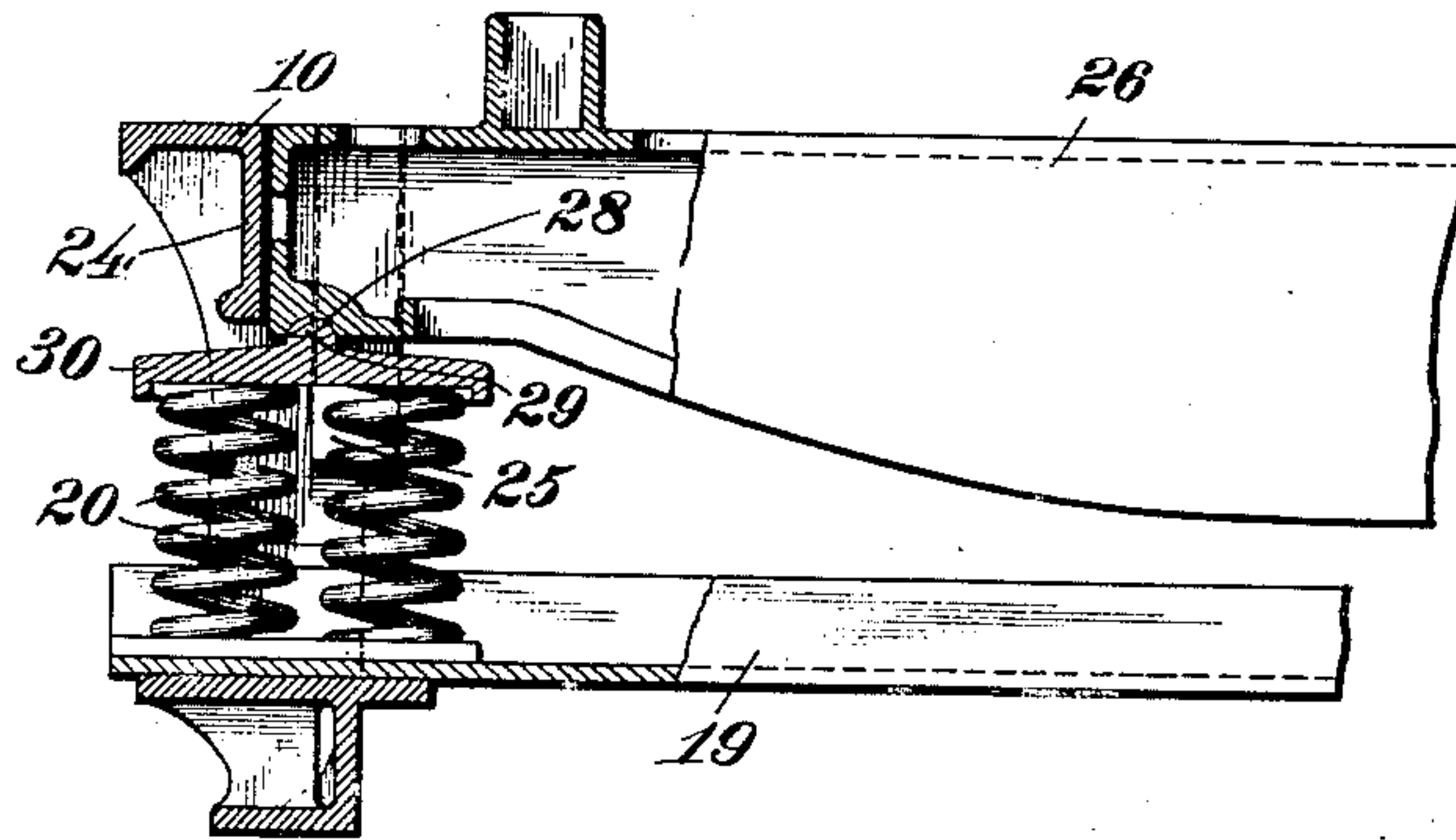


Fig. 4.

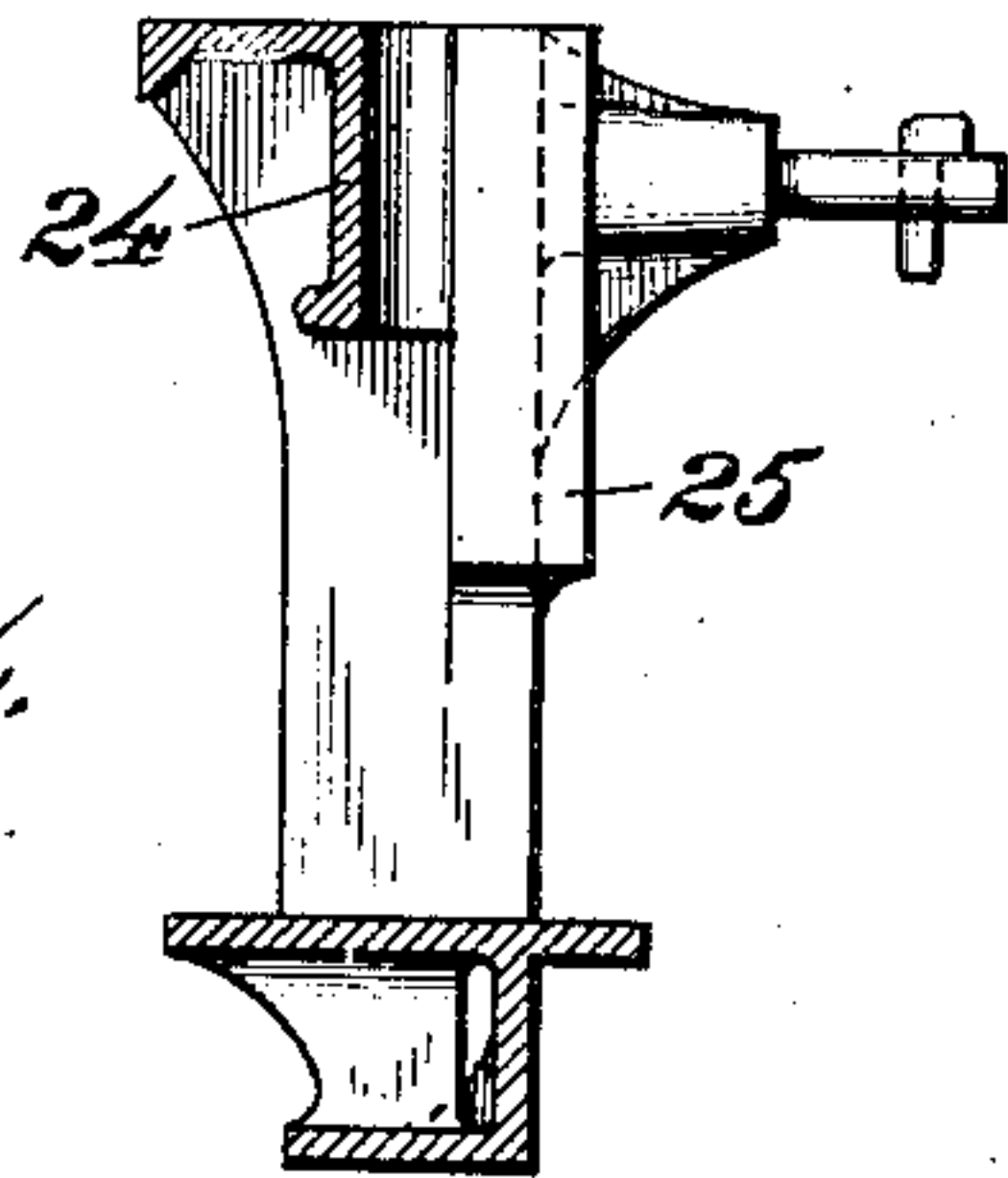
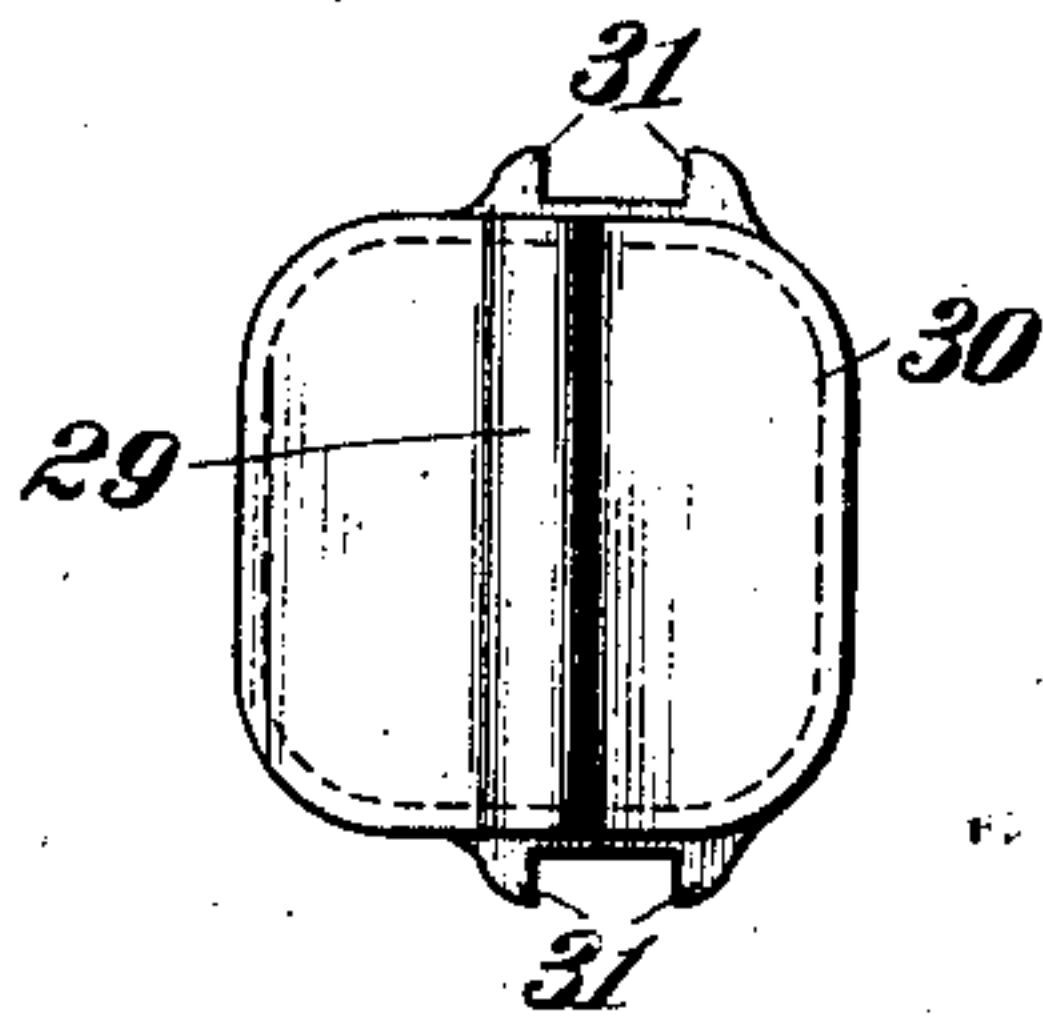
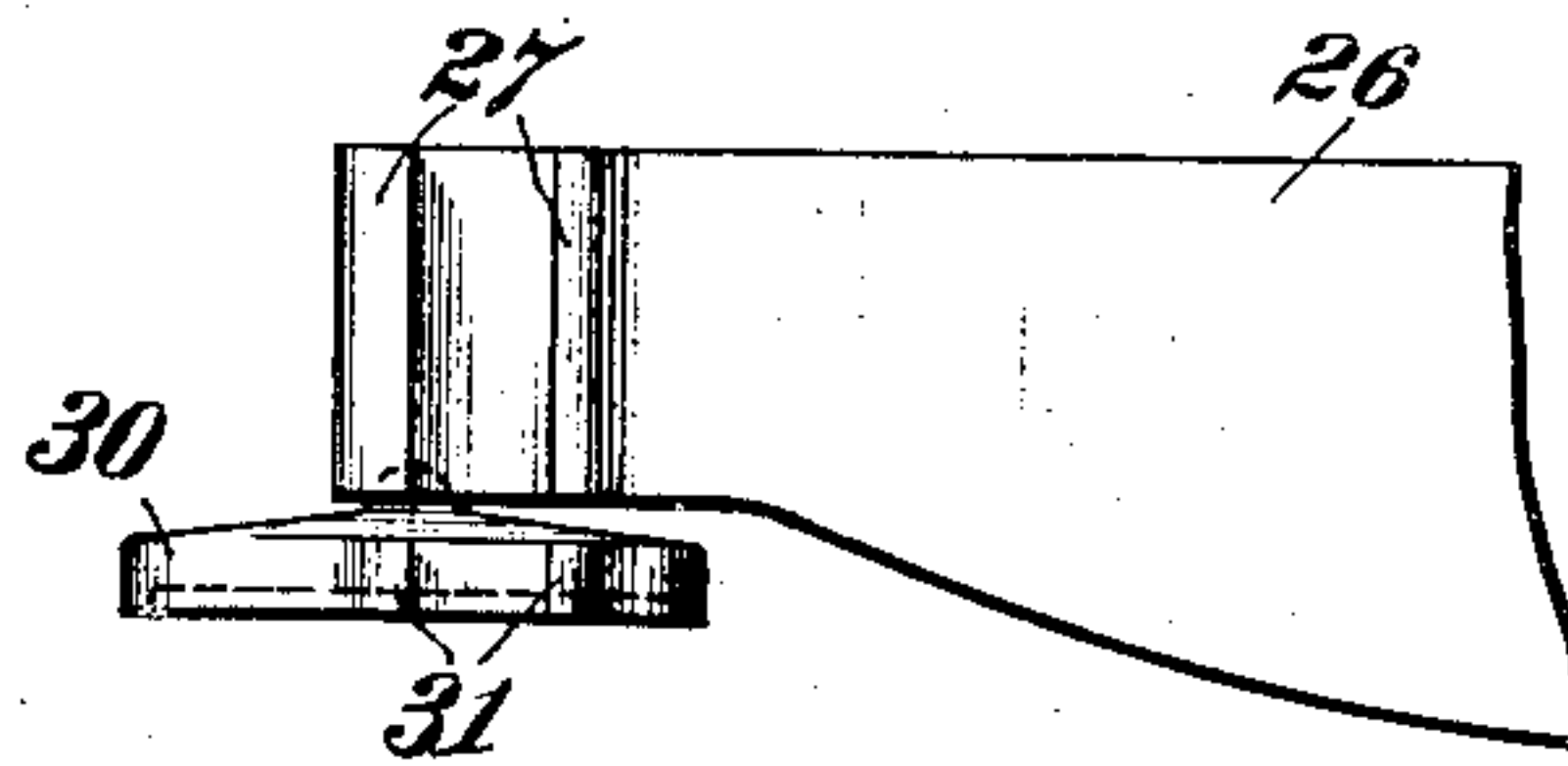


Fig. 5.



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UNITED STATES PATENT OFFICE.

GEORGE G. FLOYD, OF GRANITE, ILLINOIS, ASSIGNOR TO AMERICAN STEEL FOUNDRIES,
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CAR-TRUCK.

No. 924,653.

Specification of Letters Patent.

Patented June 15, 1909.

Application filed February 24, 1908. Serial No. 417,502.

To all whom it may concern:

Be it known that I, GEORGE G. FLOYD, a citizen of the United States, residing at Granite, in the county of Madison and State of Illinois, have invented certain new and useful Improvements in Car-Trucks, of which the following is a specification.

My present invention, which relates to railway car trucks, aims to accomplish a number of desirable and advantageous objects and results, among which the following may be especially mentioned: first, to provide a truck construction which will permit the truck-bolster to be readily lifted out of the same, and to accomplish this object I provide each side-frame with an inwardly-facing open-top recess or chamber adapted to accommodate and receive the end of the bolster; second, in order to supply sufficient strength to each side-frame I provide an outer wall for each of said recesses joining together the parts of the frame on opposite sides of the recess; third, beneath the above-mentioned recess and wall each side-frame has an aperture of substantial size extended therethrough to receive the springs which are arranged substantially transversely symmetrical with respect to the frame, whereby the load transmitted through them will be evenly distributed on the frame, and in order to do this portions of the outer springs are located outside of but below the bolster recesses in the side-frames; fourth, vertical columns or bolster guides, integral with the frames, are in the recesses and extend part-way down the end walls of the apertures, the column-guides with which the bolster is supplied coöperating for the usual purpose with the portions of the columns in the recesses, while similar guides on the spring-caps co-act with the lower portions of the same columns to hold the caps in place, the bolster being inserted in the frame from above and the spring-caps being put in place from below; fifth, a part of each spring-cap extends outwardly beneath the outer wall of the bolster recess of the side-frame so as to rest upon all of the springs equally; sixth, to distribute the load borne by the bolster equally on the springs, even though the bolster overlaps only a portion of the springs, I have provided a construction which imposes the entire load of the bolster on the middle parts of the spring-caps and the

latter distribute it evenly on the supporting springs; seventh, I have found that side-frames of this general character may be greatly improved as regards strength by providing brackets transverse to and integral with the outwardly-extended flange of the tension member, and consequently I employ such brackets or braces in my frame; eighth, for a similar reason I equip the side-frames with flanges or strengthening ribs around the lower angles of the substantially-triangular openings on opposite sides of the center of each frame. These advantages and others will be found to reside in my novel construction and arrangement of parts from the following detailed description taken in conjunction with the accompanying drawings forming a part of this specification, wherein like reference characters are used to designate the same parts throughout the various views.

On the drawings—Figure 1 is a side elevation of my improved car-truck, portions of which not involved directly in the present invention being indicated in dotted lines; Fig. 2 is a plan view of the construction shown in Fig. 1, the bolster being broken away; Fig. 3 is a fragmentary vertical transverse section through the center of the truck and illustrates the coöperation of the bolster, spring-cap, springs and side-frame; Fig. 4 is a view similar to Fig. 3, all the parts with the exception of the side-frame being omitted; Fig. 5 is a side elevation of a part of the bolster and the spring-cap; and Fig. 6 is a top plan view of the spring-cap.

At each side of the truck a cast-metal side-frame 10 is employed having a channel-shape top compression member 11 and a bottom tension member 12, a part of which is of angle section and a portion of which is of channel-shape in cross-section. Along its entire bottom edge this tension member is supplied with an outwardly-extended strengthening-flange 13, and in order to provide greater strength for the structure I cast integral with this flange and the plate portion 14 of the tension member a plurality of brackets 15, clearly shown on Fig. 1. As is customary and usual in side-frames of this general style, substantially triangular-shaped openings 16 are employed, whereby to secure a reduction of weight in the completed frame. It has been found, however, that there is a tend-

ency for cracks to occur around the lower angles of these apertures, and to strengthen the side-frames at these points and do away with the difficulty referred to, I supply my side-frames with the outwardly-extended flanges 17 around these lower angles. At its center each side-frame has a spring and spring-plank opening or aperture 18 which accommodates the end of the channel spring-plank 19 and the usual number of coil compression springs 20. An outwardly-projecting flange 21 extends around the margin of this aperture 20 and projects upwardly to the compression member 11. As is clearly illustrated in Fig. 2, each side-frame on its inner face and at the top of its central portion is supplied with a recess 22 open at the inner side of the frame and also opening below into the aperture 18. It, however, has end walls 23 formed by portions of the U-shaped flange 21, and has an outer wall 24 joining the two legs of the flange 21 but offset outwardly from the main plate portion of the side-frame. Each of the end walls 23 has a vertical inwardly-extended column or bolster guide 25, which projects downwardly into but not to the bottom of the central recess 18.

This truck, as is usual, has a truck-bolster 26 provided on the opposite sides of its ends with column-guides 27 adapted to straddle and cooperate with the columns 25 to prevent longitudinal shifting of the bolster. On its bottom face and at each end the bolster has a concave transverse groove 28 adapted to receive a correspondingly-shaped rib or tongue 29 formed on the top face of a spring-cap 30 adapted to rest upon the top ends of the compression springs 20 and equipped at its opposite ends with column-guides 31. To remove the bolster it is merely necessary to lift the same out of the truck, this operation being permitted because of the fact that the recesses receiving the ends of the bolster have open tops, as is clearly shown in Fig. 2. If it is desired to take out the spring-caps the springs are removed and the spring-cap lowered sufficiently to escape the columns 25, in which position it may be drawn out transversely of the side-frame.

It is obvious that the parts of the truck would be assembled by inserting each spring-cap in its aperture and raising it so that its guides 31 would straddle the columns, in which position the springs 20 could be inserted in place. The bolster would then be lowered so that its ends would fit in the recesses provided therefor, and its column-guides 27 cooperate with the columns 25. Although the bolster does not reach over all of the springs which are symmetrically disposed in the side-frame, it nevertheless transmits its load evenly to the springs because the load is thrust upon the spring-caps at their central points, the caps acting as

distributers to evenly divide the load over the springs.

Although I have described in detail the exact construction of the particular car-truck illustrated on the drawings, it is to be understood that my invention as set forth herein is not limited to the precise structural features shown and described, because they may be modified to a considerable extent without departure from the substance of my invention or the sacrificing of any of its benefits and advantages.

I claim:

1. In a railway car-truck, the combination of a side-frame having an open-top recess adapted to receive an end of the bolster and also having an aperture below said recess intended to accommodate the springs, columns in said recess extending down the end walls of said aperture, springs in said aperture, a spring-cap in said aperture resting on said springs and having guides cooperating with said columns, and a bolster resting on said spring-cap, substantially as described.

2. In a railway car-truck, the combination of a side-frame having an open-top recess adapted to receive an end of the bolster and also having an aperture below said recess adapted to accommodate the springs, columns in said recess extending down the end walls of said aperture, springs in said aperture, a spring-cap in said aperture resting on said springs and having guides cooperating with said columns, and a bolster resting on said spring-cap and having column-guides co-acting with said columns, substantially as described.

3. In a railway car-truck, the combination of a side-frame having an open-top recess adapted to receive an end of the bolster, said recess being closed by a wall at its outer side, said side-frame having an aperture there-through below said recess adapted to accommodate springs, columns in said recess extending below the same into said aperture, springs in said aperture, a spring-cap resting on said springs, located below said recess and wall and equipped with guides cooperating with said columns, and a bolster having column-guides co-acting with said columns, substantially as described.

4. In a railway car-truck, the combination of side-frames each having an open-top recess adapted to receive an end of the bolster, said side-frames each having an aperture below its recess and adapted to accommodate the springs, columns in each recess extending into said aperture, springs in each of said apertures, a spring-cap for each side-frame resting on said springs and having guides cooperating with said columns, and a bolster resting on said spring-caps and having column-guides at its opposite ends cooperating with said columns, the connection between said bolster and spring-caps being such that

the load of the former is transmitted to the spring-caps at their substantially central portions only, substantially as described.

5 In a railway car-truck, the combination of a side-frame having an open-top recess adapted to receive an end of the bolster, said side-frame also having an aperture there-
10 through below said recess, columns in said recess extending downwardly into said aperture, springs in said aperture, a spring-cap resting on said springs and having guides coöperating with said columns, a bolster having column-guides coöperating with said
15 columns, and a tongue and groove connection between said bolster and spring-cap, substantially as described.

20 6. In a railway car-truck, the combination of a pair of side-frames each having an open-top recess adapted to receive an end of the bolster, said recess having an outer wall, each of said side-frames having an aperture there-
through and below its recess, columns in each of said recesses extending downwardly into

the aperture below, springs in each of said apertures, a spring-cap for each of said side-
25 frames resting on said springs and located below the recess and its outer wall of the side-frame, each of said spring-caps having guides coöperating with the columns, a bolster hav-
30 ing column-guides at its opposite ends coöperating with the columns of the side-frames, and tongue and groove connections between the ends of said bolster and the central portions of said spring-caps, substan-
35 tially as described.

7. A railway car-truck side-frame having substantially triangular-shaped apertures therethrough on opposite sides of its central
portion, and also having outwardly-extended
40 flanges around the lower angles only of said apertures, substantially as described.

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Witnesses:

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