No. 636,328. Patented Nov. 7, 1899.

G. H. FRAZIER, C. W. WHEATON & W. M. HAGANS.

CAR TRUCK.

(Application filed Sept. 1, 1899.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1

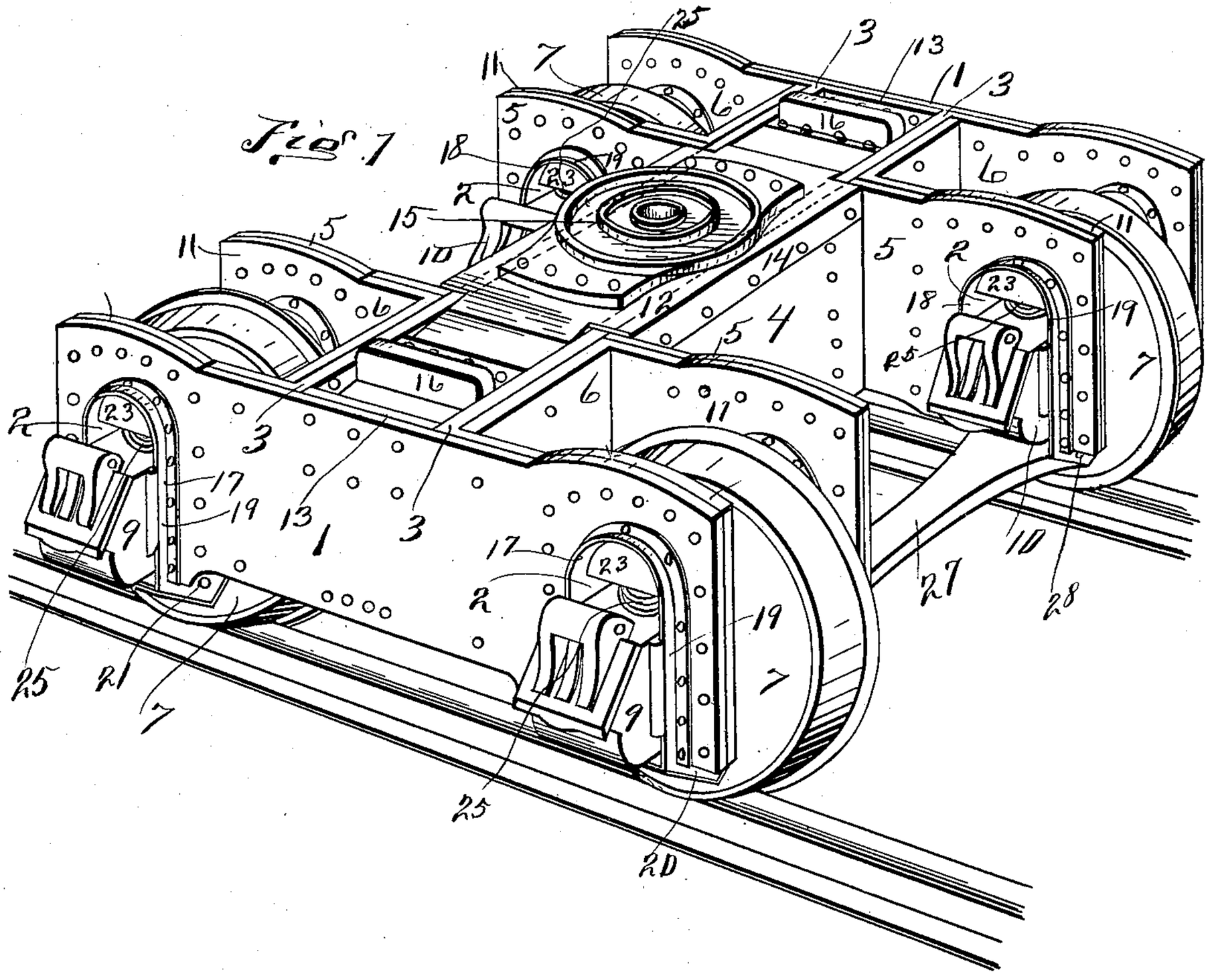

Fig. 2

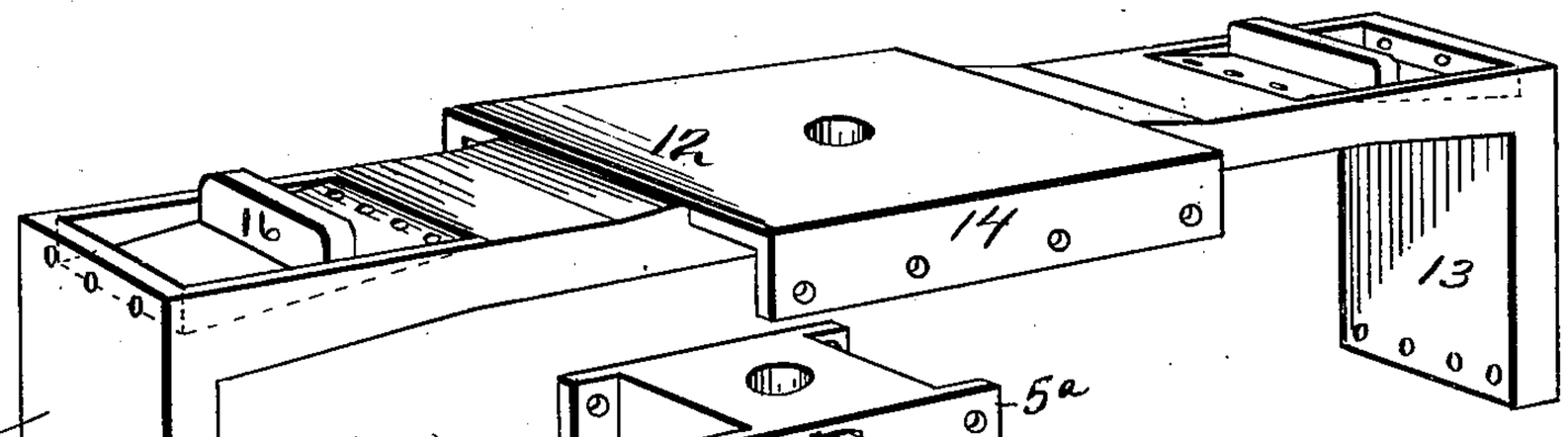

Fig. 3

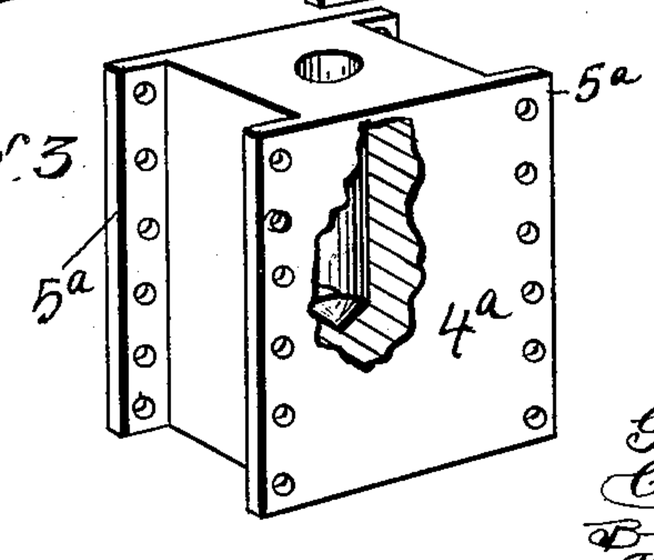

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Fig. 4

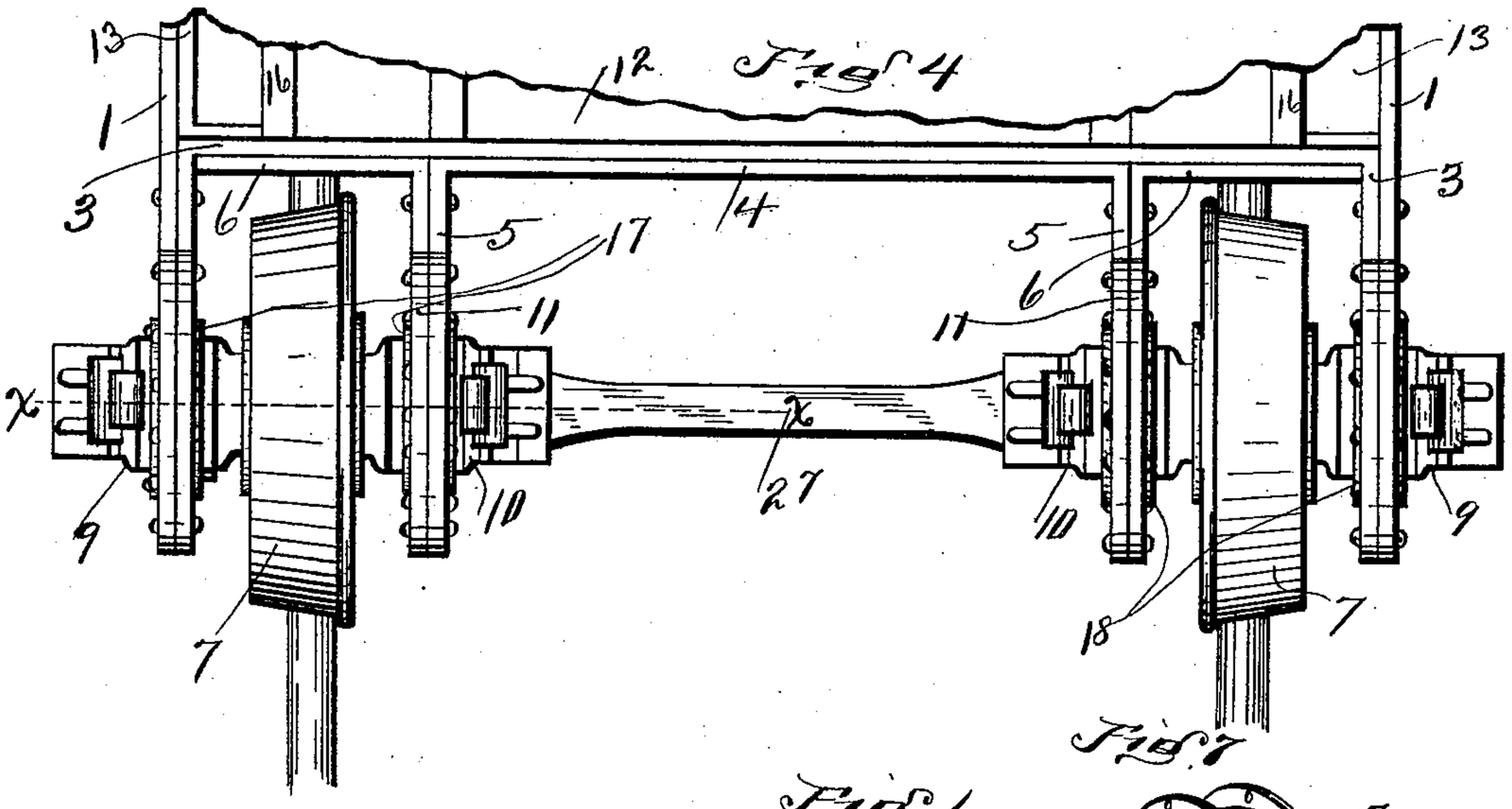


Fig. 5

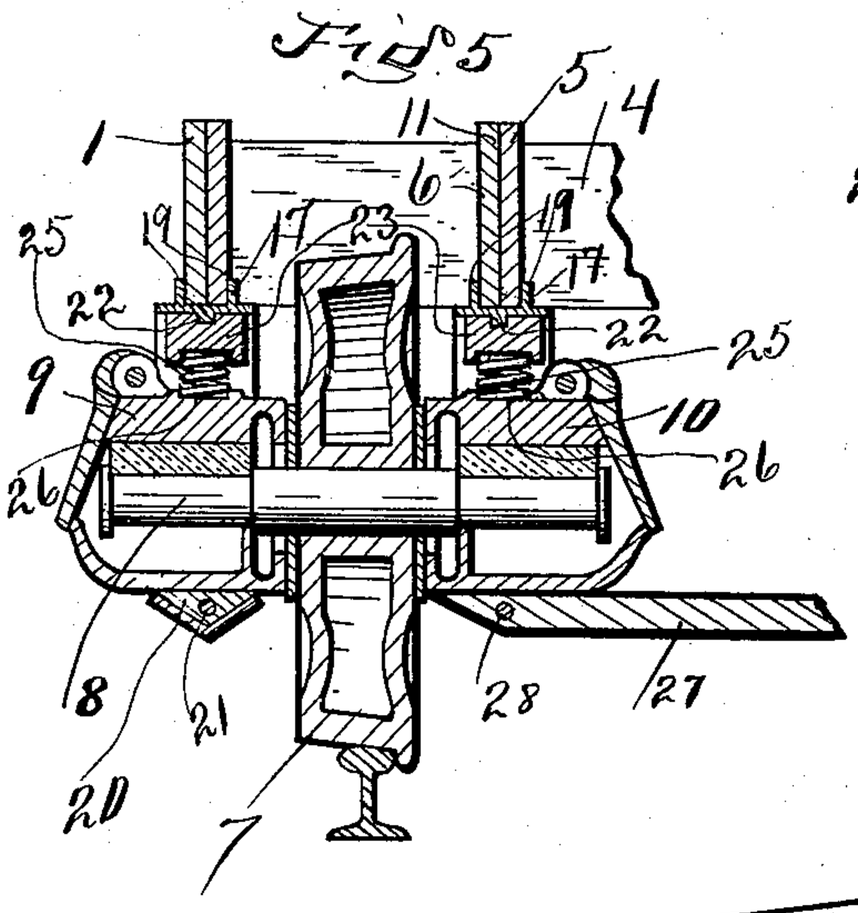


Fig. 6

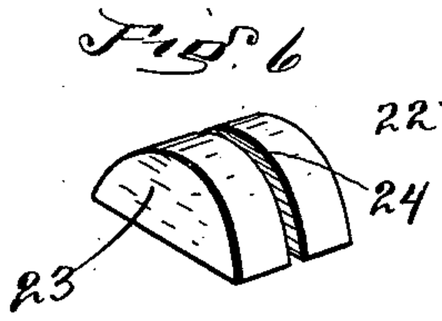


Fig. 7

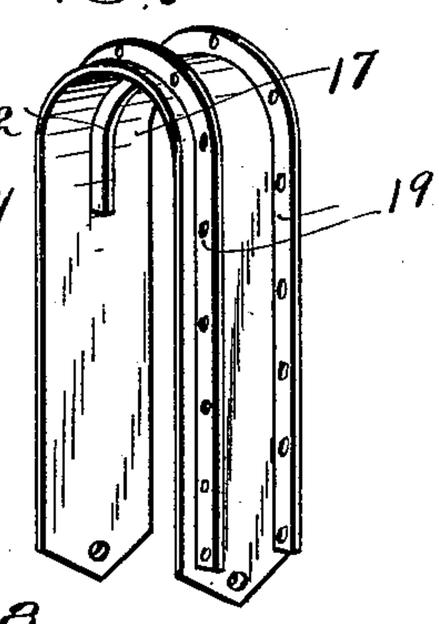


Fig. 8

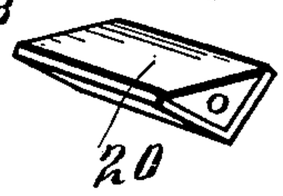


Fig. 9

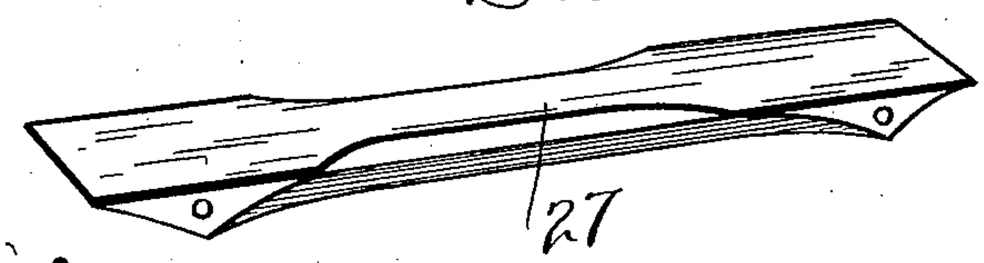
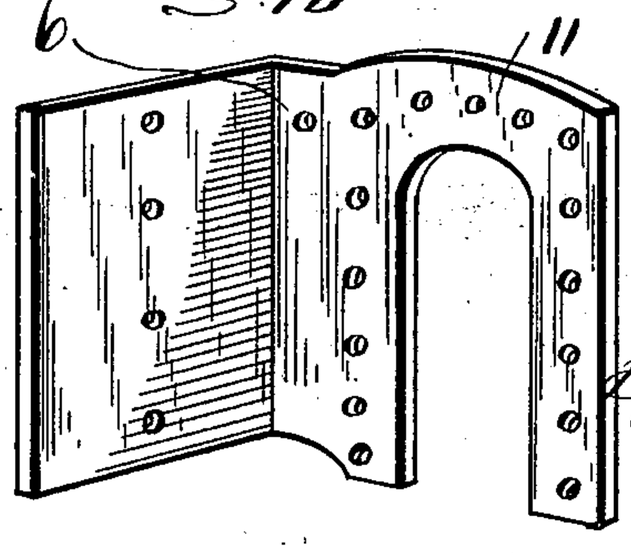


Fig. 10



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UNITED STATES PATENT OFFICE.

GEORGE H. FRAZIER, CHARLES W. WHEATON, AND WILLIAM M. HAGANS,
OF DENNISON, OHIO.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 636,328, dated November 7, 1899.

Application filed September 1, 1899. Serial No. 729,183. (No model.)

To all whom it may concern:

Be it known that we, GEORGE H. FRAZIER, CHARLES W. WHEATON, and WILLIAM M. HAGANS, citizens of the United States, residing at Dennison, in the county of Tuscarawas and State of Ohio, have invented certain new and useful Improvements in Car-Trucks; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the figures of reference marked thereon, in which—

Figure 1 is a perspective view showing the different parts of the truck properly assembled. Fig. 2 is a detached view of the center bar. Fig. 3 is a detached view of the center block or pin-holding head. Fig. 4 is a top view showing a portion of the truck. Fig. 5 is a vertical section through line *x x*, Fig. 4. Fig. 6 is a detached view of one of the spring-caps. Fig. 7 is a detached view of one of the axle-box yokes. Fig. 8 is a detached view of the lower block designed to close the bottom or lower ends of the outer yokes. Fig. 9 is a detached view of one of the connecting-bars for the inner yokes. Fig. 10 is a detached view of one of the L-braces.

The present invention has relation to car-trucks designed and calculated to be constructed of metal; and it consists in the different parts and combinations of parts and in the novel manner of construction hereinafter described, and particularly pointed out in the claims.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

In the accompanying drawings, 1 represents the side members of the truck, which are formed of a length to correspond with the length of the truck designed to be constructed, the side members being located upon the outer sides of the truck proper, and are provided at their ends with suitable openings 2.

Upon the inner sides of the side members 1 are located the channel-braces 3, which channel-braces are formed of a length to correspond with the distance between the inner faces of the side members 1 and to which side members the parallel flanges of the channel-braces 3 are securely attached, preferably by strong rivets, said parts being securely united or connected together.

To the central portion of the channel-braces 3 are connected the center channel-braces 4, said channel-braces being located substantially as shown in Fig. 4, but two channel-braces being shown in said Fig. 4.

To the flanges 5 of the center braces 4 are connected the L-braces 6, said L-braces also being connected to the channel-braces 3.

It will be understood that by our peculiar arrangement in the formation of the car-truck proper a strong and rigid truck can be produced, and at the same time we are enabled to dispense with cross-axles, by which arrangement each of the truck-wheels 7, together with their axles 8, is free to rotate independently.

It will be understood that in order to hold in proper position the axles 8, together with their wheels 7, the outer and inner axle-boxes 9 and 10 must be provided, and it will also be understood that openings must be formed in the channel-braces 3.

The flanges 5 of the center braces 4 are connected to the flanges 11 of the L-braces 6, said openings being substantially the same as the openings 2, formed in the side members 1, and are so located that said openings will register when the different braces and side members are properly assembled.

The car-supporting bar 12 is substantially of the form shown in the drawings, and as shown it is provided with the end flanges 13, which flanges are securely joined or riveted to the side members 1, and the central portion 14 is riveted to the braces 4, and the portions of the car-supporting bar 12 between the end flanges 13 and the center portion 14 are connected to the L-braces 6, by which arrangement a strong and rigid connection is made between the car-supporting bar 12 and the truck proper. Upon the top or upper side of the center portion 14 is located the plate 15, which plate may be of the ordinary construction and has no particular reference to the present invention except that such a plate must necessarily be used. The car-supporting bar 12 is also provided with the ordinary buffers 16, said buffers being for the purpose

of limiting the tilting movement of the car proper.

The axle-box yokes 17 and 18 are preferably formed of malleable iron, and are formed of such a shape that they will fit the openings formed in the side members 1 and the corresponding openings formed in the different braces or flanges of the different braces located parallel with the side members 1. The different axle-box yokes are provided with flanges, such as 19, said flanges being for the purpose of providing means for securely connecting the yokes and holding the same in proper position. The bottom or lower ends of the yokes 17 are provided with the blocks 20, which blocks are securely connected by means of suitable cross-bolts or rivets 21, said blocks being for the purpose of adding strength to the yokes and also closing the bottom ends thereof.

The upper ends of the yokes 17 and 18 are each provided with the ribs 22, which ribs are for the purpose of holding the spring-caps 23 in proper position, said spring-caps being provided with grooves 24 to receive the ribs 22, as illustrated in Fig. 5. The spring-caps 23 are provided with the sockets 24, said sockets being for the purpose of receiving the upper ends of the springs 25, the bottom or lower ends of said springs being seated in sockets 26, formed in the top or upper sides of the boxes 9 and 10.

For the purpose of properly connecting the inner yokes 18 together tie-bars 27 are provided, which tie-bars are connected at their ends to the inner yokes 18 by means of suitable cross-bolts or rivets 28.

The boxes 9 and 10 may be of any desired construction, inasmuch as they within themselves form no particular part of the present invention, except that axle-boxes must necessarily be used.

It will be understood that by our peculiar manner of assembling the different parts of the truck proper and connecting them together a strong and rigid truck will be produced and at the same time one that will not become liable to be twisted out of shape.

Another advantage in our particular construction is the overcoming of friction in passing over curves owing to the fact that each wheel of the truck is independent within itself, thereby allowing said wheels to adjust their rotation to correspond with the degree of curvature in the track upon which the wheels travel.

In the manufacture of our improved truck we prefer to stamp the different parts from sheet-steel, and by arranging the different parts as above described greater strength is produced without adding the strength required to a single part of the truck—that is to say, by our peculiar manner of construction sheet-steel can be used of less thickness than that required in the ordinary construction of steel trucks.

The center block or pin-holding head 4^a is substantially of the form shown in the drawings and is provided with the flanges 5^a, which flanges are for the purpose of providing a means for securely connecting said block by means of suitable rivets.

It will be understood that rivets of sufficient length may be used to connect the center block or pin-holding head, the channel-braces 3, and the center channel-braces 4 together and each rivet passed through all of said parts.

The ribs 22 are extended downward far enough so if in the event the springs 25 should break the axle-boxes will strike against the bottom ends of said ribs 22.

It will be understood that by providing axles as above described they will not be liable to become heated, owing to the fact that they are not so liable to be forced out of true alinement with the boxes. It will also be understood that by our peculiar construction of the truck heavy loads can be carried without springing or bending the metal contained in the truck proper.

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. The combination of side members, channel-braces connected to the side members, center braces or channel-bars connected to the transverse portions of the braces connected to the side members, L-braces connected to the extended flanged portions of the center braces and the car-supporting bar connected to the side members and to the braces, substantially as and for the purpose specified.

2. In a car-truck of the class described, side members formed of a length to correspond substantially with the length of truck, a car-supporting bar connected to the side members, channel-braces formed of a length to correspond with the distance between the inner faces of the side members, center channel-braces and L-braces connected to the center channel-braces and to the car-supporting bar, substantially as and for the purpose specified.

3. The combination of side members, channel-braces connected to the side members, a center car-supporting bar having connected thereto center channel-braces, L-braces connected to the center channel-braces and to the car-supporting bar, and said parts all connected together and openings formed in the side members and different braces and axle-yokes carrying axle-boxes, and independent axles journaled in the axle-boxes, substantially as and for the purpose specified.

4. The combination of side members formed of a length to correspond with the length of the truck, a car-supporting bar connected to the side members, channel-braces connected to the side members and to the center bar, center channel-braces, L-braces connected to the center channel-braces and to the bar,

axle-boxes yokes and axle-boxes connected to the different braces and the yokes 18 connected together at their bottom or lower ends, substantially as and for the purpose specified.

5. In a truck of the class described, a frame consisting of side members, channel and L braces axle-box yokes connected to the frame carrying axle-boxes, said axle-box yokes provided with ribs, spring-caps rotated in the upper ends of the axle-box yokes, and provided with grooves to receive the ribs, and each wheel of the truck mounted upon its own axle, substantially as and for the purpose specified.

In testimony that we claim the above we have hereunto subscribed our names in the presence of two witnesses.

GEORGE H. FRAZIER.
CHARLES W. WHEATON.
WILLIAM M. HAGANS.

Witnesses:
J. A. JEFFERS,
F. W. BOND.