Jan. 14, 1930. D. H. DAVIS ET AL 1,743,437

TRAILER FRAME STRUCTURE

Filed Sept. 10, 1927

Fig 1.

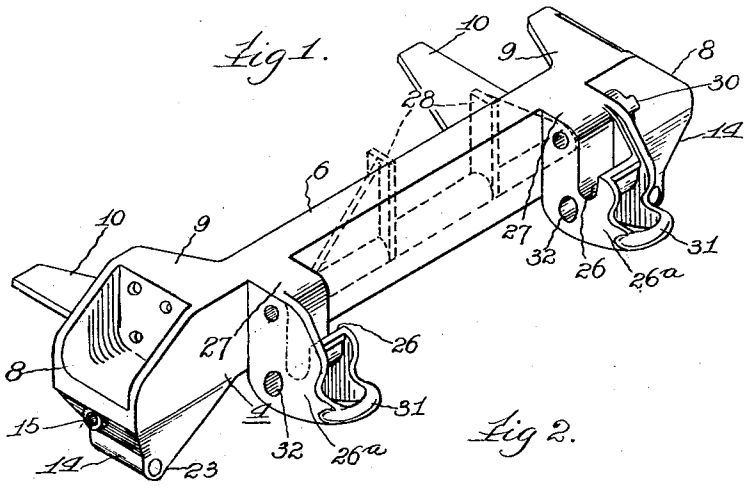


Fig 2.

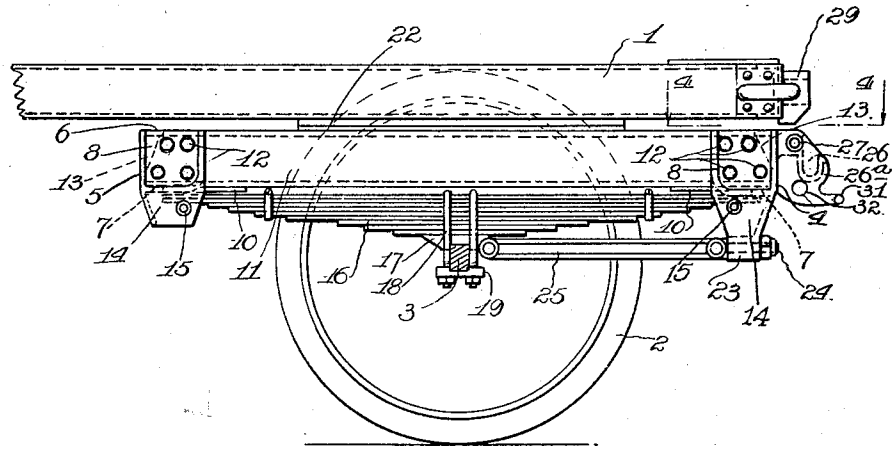


Fig 3.

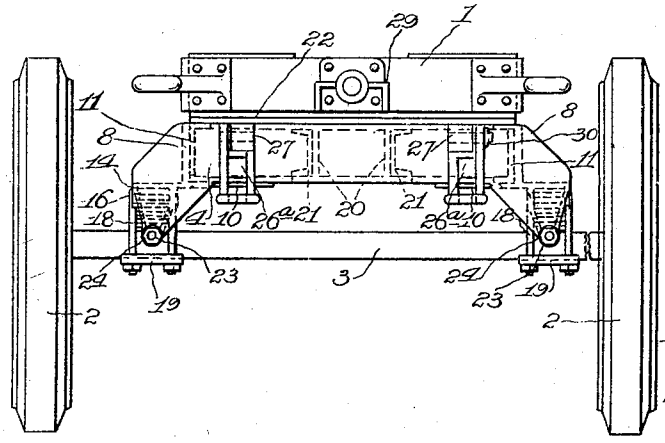
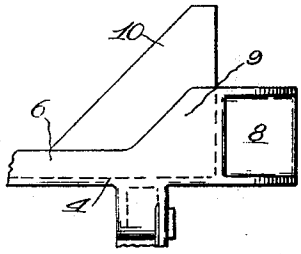


Fig 4.



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UNITED STATES PATENT OFFICE

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TRAILER-FRAME STRUCTURE

Application filed September 10, 1927. Serial No. 218,627.

This invention relates to vehicle construction and more particularly to the sub-frame or swivel truck and has for its object to provide a sub-frame of improved construction in which the ends thereof are unitary cast members having the various fixtures integrally formed thereon. It consists in certain features and elements of construction in combination as herein shown and described and as indicated by the claims.

In the drawings:—

Figure 1 is a perspective view of the unitary front end casting of the sub-frame.

Figure 2 is a side elevation of a vehicle frame embodying my improved sub-frame construction.

Figure 3 is an end elevation of the vehicle frame as illustrated in Figure 2.

Figure 4 is a fragmentary detail plan view of the end casting, taken as indicated at line, 4—4, on Figure 2.

In the drawing the forward end of the vehicle main frame is indicated at 1, carried on a sub-frame or swivel truck which is mounted on the usual supporting wheels, 2, and axle, 3. The sub-frame includes unitary cast end members, 4 and 5, forming the entire front and rear ends respectively. Each of said cast end members is provided with horizontally extending reenforcing flanges, 6 and 7, projecting inwardly from both upper and lower edges thereof, and corner brackets, 8, integrally formed at each end of said cast end members extending at right angles thereto. The upper end of the bracket, 8, is integrally connected with the upper flange, 6, by a reenforcing web, 9, substantially flush with the upper surface of said upper flange. The lower corners of the cast end members are provided with integrally formed triangularly-shaped gusset plates, 10, extending inwardly in substantial alignment with the lower flange, 7. These gusset plates support the ends of a pair of spaced longitudinally extending channel side frame members, 11. The ends of said side frame members are attached to the inner side of the corner brackets, 8, by suitable bolts, 12. Each end of the side frame members is cut angularly, as indicated at 13, so as to clear the upper flange, 6, of the respective end castings, 4 and 5, when the sub-frame is assembled.

Integrally formed with and extending downwardly from the lower edge of said cast end members adjacent the corner brackets, 8, are brackets, 14, having therein transversely disposed pin and roller members, 15, for slidably supporting the ends of leaf springs, 16, which extend parallel to and outside of the side frame members, 11. The springs, 16, are mounted adjacent their middle in a usual manner on a shoe, 17, disposed on top of the axle, 3; said springs are held in an upright position in alignment by a pair of U-bolts, 18, extending thereover and downwardly through retaining plates, 19, which are carried on the under side of said axle. On the inner side of the cast end members spaced on opposite sides of the longitudinal center of the truck are a pair of vertical ribs, 20, integral with the flanges, 6 and 7, for supporting the ends of a pair of longitudinally extending frame members, 21. These members serve to support the fifth wheel, 22, for providing steering movement to the truck in a usual manner.

It will be noted that the unitary cast end members, 4 and 5, up to this point in the description, are identical in structure, and although they could be identical in all respects, it is preferable to provide only one casting, that is, the outer or front end casting, 4, with certain necessary integral fixtures. A boss, 23, is integrally formed on the bottom of each bracket, 14, of the front end casting, 4, for carrying an adjustable bolt, 24, pivotally connected to the end of a radius rod, 25, the opposite end of said rod being pivotally connected to the shoe, 17, which is mounted on the axle, 3. These radius rods are in central alignment with and below the spring members, 16, and serve to transmit the pull exerted on the front end casting to the axle, 3, when the vehicle is drawn.

In vehicles, especially those of the trailer type, it is frequently desirable and often necessary to steer or draw the same from either end. For this purpose both of the sub-frames are swivelly connected to the vehicle main frame and each provided with mechanism for locking against steering move-

ment. The locking mechanism may be of any suitable type, that designed for use herein being disclosed in Patent No. 1,611,889, issued to C. G. Clement on December 28, 1926.

It will be understood that in vehicles having both sub-frames swivelly connected, the outer ends of said sub-frames will be provided with unitary cast end members, 4, having connection to the axle by radius rods, 25. Each of these castings on the outer ends of the sub-frames will also be provided with a draw head and locking members as will now be described.

A pair of transversely spaced bracket members, 26ª, are integral with and project forwardly from the front side of the front unitary cast member, 4, each of said brackets being provided with an upwardly open socket, 26, adapted to receive the laterally spacd terminals of a draw bar (not shown), for pulling the vehicle. Immediately above and rearward of said sockets and integral with the cast member, 4, are bosses, 27, adapted to support a transverse rocking lock shaft (not shown), which carries a usual locking member indicated at 28 in dotted line in Figure 1, adapted for engagement with a corresponding locking member, 29, on the end of the main frame, 1. A lug, 30, is integrally formed on the outer side of one of said bosses, 27, for engagement with the usual detent means (not shown) for maintaining the locking mechanism in various positions of adjustment.

Integrally formed with, and projecting forwardly from the lower portion of said brackets, 26ª, are closed loops, 31, for attachment of the usual safety chains for connecting a series of trailers in a train in an ordinary manner. The lower portion of brackets, 26ª, rearward of the closed loops, 31, are provided with transverse apertures, 32, adapted to permit insertion therein of a rod, pipe, or the like, for steering the end of vehicle. This arrangement permits full control of movement of the vehicle when the same is not being drawn.

It will be clear that a unitary cast end member with its various integral fixtures affords a compact arrangement which facilitates the assembly and effects economy in fabrication. Further, the entire sub-frame will be rendered more rigid and durable.

We claim:

1. A unitary cast member for a swivel truck, forming the entire front end of the truck and comprising integral corner brackets at each each end for supporting the forward ends of the truck side frame members, and integral depending brackets adjacent the corner brackets for supporting the forward ends of the longitudinally disposed leaf springs.

2. In a structure as defined in claim 1, the lower portions of said depending brackets merging into lugs to provide a connection for the forward ends of radius rods.

3. A unitary cast member for a swivel truck, forming the entire front end of the truck and comprising integral corner brackets adjacent each end for supporting the forward ends of the truck side frame members, integral depending brackets at each end spaced laterally beyond the corner brackets for supporting the forward ends of leaf springs laterally offset from said side frame members, and depending lugs integrally formed at the bottom of said depending brackets to provide a connection centrally of the springs for the forward ends of radius rods.

4. In the structure defined in claim 3, the front face of said member having integrally formed upwardly open sockets adapted to receive lateral lug projections of a vehicle draw bar.

5. In a structure as defined in claim 3, said member being formed with integral reinforcing ribs extending horizontally and rearwardly from the upper and lower edges thereof and each being formed adjacent the corner brackets with an integral gusset or web portion.

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