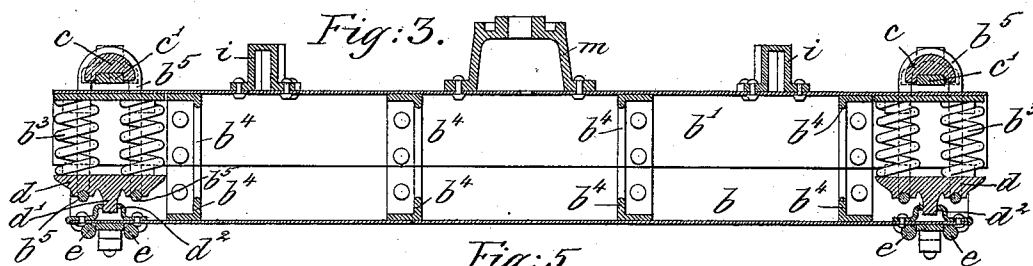
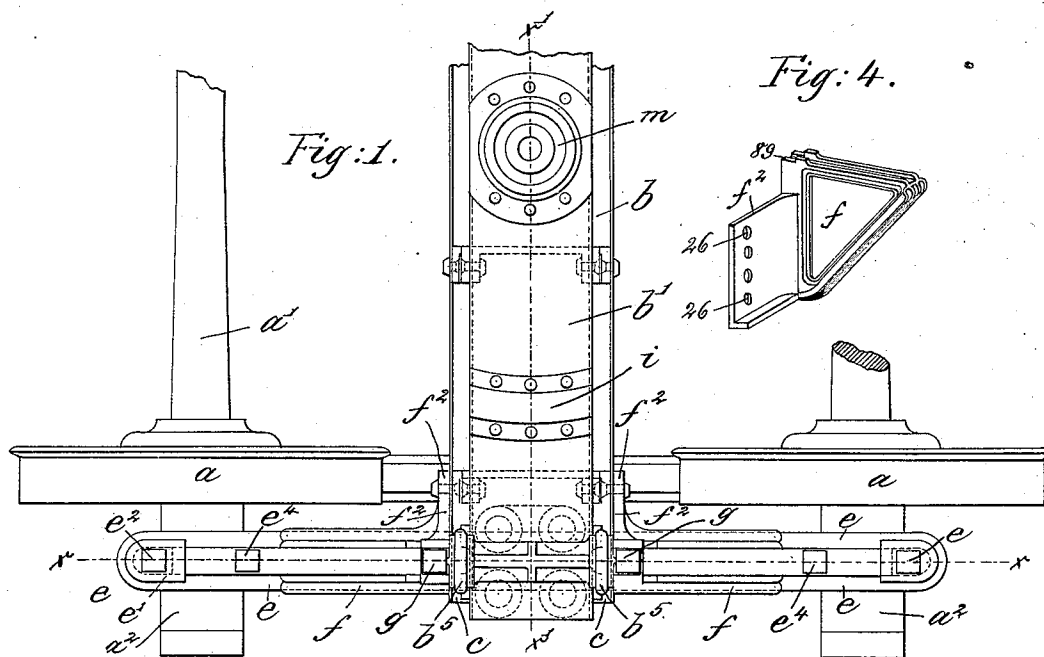


F. G. SUSEMIHL & L. K. JEWETT.

No. 361,845.

Patented Apr. 26, 1887.



Witnesses.

Arthur Zipperdon.

John F. C. Pringle

Inventors.

Francis C. Susenmühl

Luther K. Jewett.

by Crosby & Gregory attys

UNITED STATES PATENT OFFICE.

FRANCIS G. SUSEMIHL, OF DETROIT, MICHIGAN, AND LUTHER K. JEWETT,
OF BOSTON, MASSACHUSETTS.

CAR-TRUCK.

SPECIFICATION forming part of Letters Patent No. 361,845, dated April 26, 1887.

Application filed August 4, 1886. Serial No. 209,961. (No model.)

To all whom it may concern.

Be it known that we, FRANCIS G. SUSEMIHL, of Detroit, county of Wayne, and State of Michigan, and LUTHER K. JEWETT, of Boston, county of Suffolk, and State of Massachusetts, have invented an Improvement in Car-Trucks, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

This invention has for its object to improve the construction of car-trucks wherein the chief part of the truck is composed of metal, our invention being an improvement on that class of truck represented in United States Patent No. 279,951, dated June 26, 1883, our present improvement providing for greater strength in the finished truck.

Our invention in a car-truck consists, essentially, in a U-shaped transom and arch-bars and saddle combined with links, spring-seats supported thereby, springs, and a metallic bolster to enter the said transom, as will be described; also, in the combination, with a metallic U-shaped transom, arch-bar, and truss, of metallic arch-bar-supporting blocks rigidly attached to the said transom, substantially as will be described.

Other features of our invention will be hereinafter set forth at the end of this specification.

Figure 1 is a top or plan view of one-half of a truck containing our invention; Fig. 2, a section of Fig. 1 in the dotted line xx ; Fig. 3, a longitudinal section in the line $x'x'$. Fig. 4 shows one of the arch-bar-supporting blocks in perspective, and Fig. 5 a detail of the saddle removed.

The wheels a , axles a' , and the housings a'' and their contained boxes are and may be of any usual construction. The transom b , as well as the bolster b' , are herein shown as composed of strong sheet metal, preferably of steel of about one-fourth of an inch thick, the same being bent into U shape to form a box or trough with rounded corners, as at b'' , the said transom and bolster being each in one piece, instead of in several pieces riveted together, as in the said patent.

The bolster is sustained by springs b^3 , of any desired number, (herein shown as four,) the

said springs being so located at the ends of the transom and bolster as to be effective in reducing concussion in the line of the arch-bars and trusses. The transom and bolster are both strengthened internally by angle-irons, as at b^4 . The bolster is enough narrower than the transom to afford sufficient space between them to receive the bolster-supporting metallic links b^5 , made preferably of the toughest and strongest wrought-iron, the said links preferably being bent, as shown in the drawings, to form double loops, so that they may not only embrace the metallic saddle c , but extend under the spring-seat d . The saddles are grooved at their under side (see Fig. 3) to rest upon and embrace the arch-bar c' , the latter being extended longitudinally of the truck and lying at right angles to the bolster b' . The links b^5 serve to support the spring-seat d , which is a metal bar, having at its lower side a lug, d' , to enter a hole in a plate, d'' , riveted to the transom, the said lug and block co-operating to prevent the swinging of the said spring-seat with the links about the saddle as a fulcrum.

In another application filed concurrently herewith, Serial No. 209,962, we have made especial provisions to permit the spring-seat to swing, and therein claim is made for such features.

The housings receive upon them housing-clips d^3 , which at their under sides have projections 90 to embrace the housing, the said clips at their upper sides having shoulders, as at 6, against which may abut the ends of the arch-bars c' , and having each a lug or upright, 7, which, preferably rounded at its outside, is embraced by and serves to hold the truss-links e , the latter being kept down in engagement with the said lugs by means of a cap, e' , held in place by a bolt, e'' , which is extended down through the clip and the outer side of the housing, and also through the usual wheel-strap, e^3 , where the said bolt has applied to it suitable nuts. The upper arch-bar, c' , is further attached to the housing by other bolts, as e^4 .

The truss-links e are composed of round or square metal rods of great strength properly welded or united together to form, preferably, an endless loop-like truss, the looped ends of

which embrace the lugs 7, the truss extending from the said lugs along the clips d' , thence diagonally down over the rounded inner ends of the said clips, as shown in Fig. 2, and under the transom b , affording support for the latter. At each side of the transom b , and in the space formed between it and the truss e and the under side of the arch-bar c' , we have placed certain arch-bar-sustaining blocks or castings f , (herein shown as substantially triangular in shape,) the said blocks preventing inward bending or buckling or crushing of the arch-bars, the upper and lower edges of the said blocks f being preferably grooved to receive the arch-bar and the truss e , such construction preventing lateral bending or straining of either the arch-bar or truss.

The blocks f are bolted in place between the arch-bars and truss e , at the sides of the transom b , by suitable bolts, g , which are extended down through the saddle, and also through the wheel-straps.

The block f , as herein shown, have at one edge of their vertical or inner sides a flange, f^2 , having holes 26, the said blocks being bolted or riveted to the sides of the transom, the said flange projecting from the block f at right angles, so that when riveted to the transom, two of the blocks f at each end thereof there will be formed, in connection with the arch-bars and trusses, a rigid truck—one that will keep square under all ordinary use.

It will be noticed that the link b^5 is what is called a "doubled" link, or, in other words, it is so made as to straddle the saddle and extend transversely under and sustain the spring-seats and the bolster above; but the employment of two open links to straddle the saddle and embrace the ends of the spring-seats would, we consider, come within the scope of our invention.

Herein it will be seen that the weight of the car-body sustained by the bolster is not applied directly to the transom through the springs b^2 , but is applied to the links b^5 , supported by the saddles c .

The employment of a truss, e , made as an endless loop to embrace the lug 7 of the clip, held in place upon the housing by projections embracing the said housings, is a material element of safety, for in case of breaking the bolts g , which is not unfrequent, strain is not exerted on the housing-bolts, so as to shear them off, but the strain on the truss is exerted upon the lug 7, and this strain is counteracted by the end of the arch-bar abutting against the shoulder 6 of the lug 7, and at the same time it will be noticed that the arch-bar-supporting blocks prevent any buckling of the arch-bars.

The lug 7 may be omitted from the clips d^3 , in which case the ends of the top arch-bars, c' , may be extended and rounded to be embraced by the truss-links e , the bolts e^2 being extended through holes in the said top arch-bars and the clips.

If the truss was made of a flat bar of metal instead of rods and was made to occupy the

position herein occupied by the loop-truss, the holes which would have to be made in the said flat bars for the reception of the bolts g would so weaken the said bars as to render their use of but little importance, whereas with the loop-like truss the bolts have free passage between sides.

The employment of the loop-like truss links enables us to bring the resisting force right in a line with the pulling strain of the truss-link, thereby avoiding all shearing strain on the bolts employed.

Each saddle c has at its ends projections 88, which abut against and co-operate with the shoulders or notches 89 of the arch-bar-sustaining blocks f , the said saddle thus constituting a brace between the upper ends of the said blocks f .

The projections 90 of the clips d^3 avoid shearing strain upon the bolts e^2 e^4 between the said clips and housing.

We claim—

1. In a car-truck, a one-piece U-shaped transom and arch-bars and saddles, combined with links, spring-seats supported thereby, springs, and the metallic bolster, one being made to enter the other, substantially as described.

2. In a car-body, the U-shaped sheet-metal transom, the arch-bar c' , and the loop-like truss e , combined with the independent metallic arch-bar-sustaining blocks f , rigidly attached to the said transom, substantially as described.

3. In a car-truck, the U-shaped transom, the arch-bars, housings, and clips provided with lugs 7, combined with the looped truss e , bent about the said lugs and extended under and supporting the said transom, substantially as described.

4. The arch-bars, the metallic transom, the bearings, clips thereon, and the looped truss e , to engage the said clips, and extended under the transom, combined with metallic arch-bar-sustaining blocks interposed between the arch-bars and the said trusses and rigidly attached to the said transom, substantially as described.

5. The arch-bars, the metallic transom, the housings, clips provided with lugs 7 and having shoulders 6, and the looped truss e , to engage the said lugs and bent, as described, to support the transom, combined with the metallic arch-bar-sustaining blocks rigidly attached to the said transom, the ends of the arch-bars meeting the said shoulders 6, substantially as described.

6. The arch-bars, the metallic transom, the housings, clips provided with lugs 7 and having shoulders 6, and the looped truss e , to engage the said lugs and bent, as described, to support the transom, combined with the metallic arch-bar-sustaining blocks, the said blocks being grooved at their edges to embrace both the arch-bar and truss, substantially as described.

7. In a car-truck, a one-piece U-shaped transom having an attached plate, d^3 , pro-

vided with a hole, and arch-bars and saddles, combined with links, spring-seats supported thereby, provided with lugs or projections *d'*, springs, and the metallic bolster to enter the said transom, substantially as described.

8. In a car-truck, the arch-bars, the looped trusses *e*, the transom, and the arch-bar-supporting blocks *f*, attached to the said transom, combined with the bolster, the springs, spring-seats, and the double links *b*⁵, bent or shaped to not only straddle the arch-bars, but also to pass under the spring-seats from one to their other end.

9. The arch-bars, the metallic transom, the housings, clips thereon, and the looped truss *e*, to engage the said clips, and extended under the transom, combined with metallic arch-bars, sustaining-blocks interposed between the arch-bars and the said trusses and rigidly attached to the said transom, and with the wheel-straps *a'*, all bolted together, substantially as described.

10. In a car-truck, the arch-bar, the saddle

c therein, provided with the lugs 88, and a truss-link, combined with the arch-bar-sustaining blocks and with bolts to confine the said saddle in position between and constitute a brace for the upper ends of the said blocks, substantially as described.

11. The arch-bar, housings, and clips having projections 90 at their under sides to embrace the housings, combined with the wheel-strap *e* and with bolts to connect the said parts together, substantially as described.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

FRANCIS G. SUSEMIHL.
LUTHER K. JEWETT.

Witnesses for F. G. Susemihl:

CHARLES J. HUNT,
O. LEHNDORFF.

Witnesses for L. K. Jewett:

F. CUTTER,
C. M. CONE.