May 4, 1926. 1,582,907

H. C. DREIBUSS

TRUCK CONSTRUCTION

Filed April 25, 1925 2 Sheets-Sheet 1

Fig. 1.

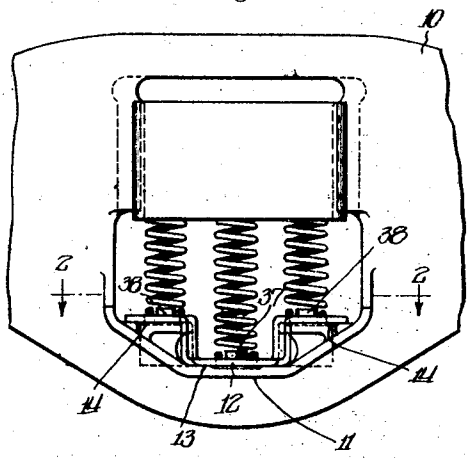


Fig. 2.

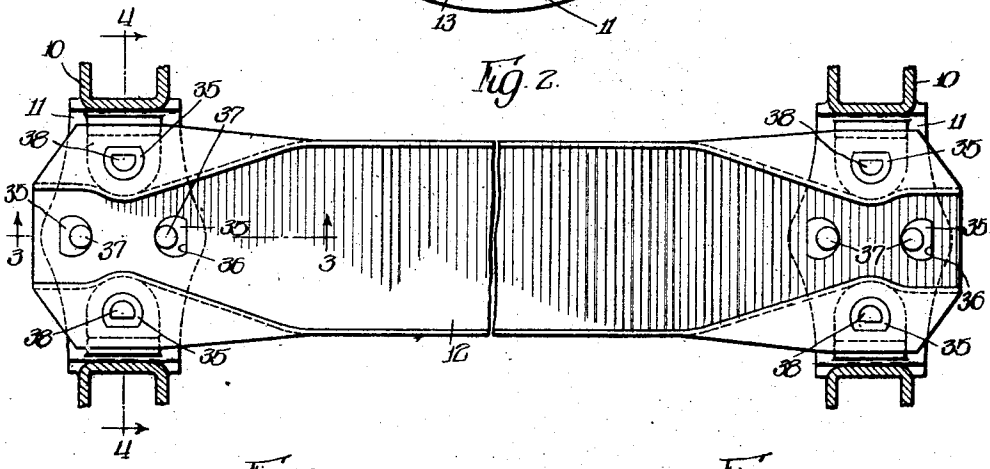


Fig. 3.

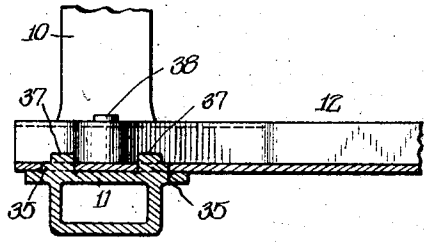
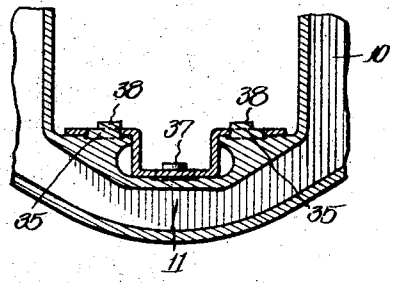


Fig. 4.



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Fig. 5.

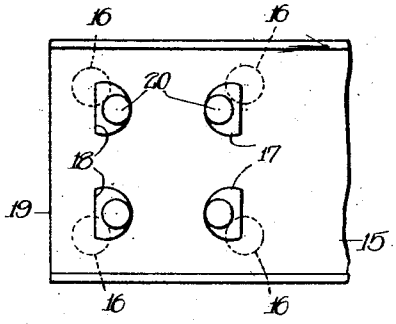


Fig. 6.

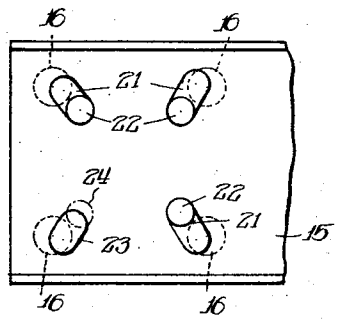


Fig. 7

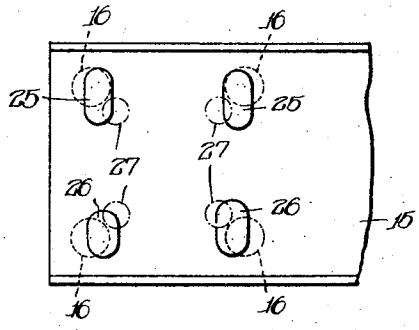
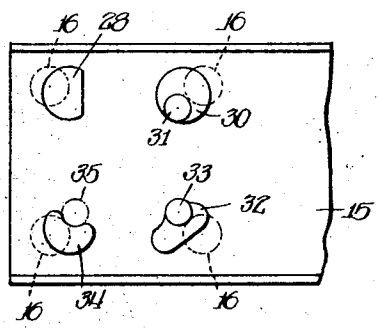


Fig. 8.



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UNITED STATES PATENT OFFICE.

HARRY C. DREIBUSS, OF ST. LOUIS, MISSOURI, ASSIGNOR TO SCULLIN STEEL CO., OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

TRUCK CONSTRUCTION.

Application filed April 25, 1925. Serial No. 25,762.

To all whom it may concern:

Be it known that I, HARRY C. DREIBUSS, a citizen of the United States, residing at St. Louis, in the city of St. Louis and State of Missouri, have invented certain new and useful Improvements in a Truck Construction, of which the following is a specification.

This invention relates to railway car truck construction, and more particularly to the spring seat portion of a truck side frame.

One object of the invention is to provide a side frame having a spring plank seat with plank-holding dowels which permit of great reduction in the size of the seat and width of the side frame at said seat portion, and which dowels at the same time will properly function with the spring plank to space and hold the side frames of the truck square.

Another object is to provide an arrangement as indicated above, in which the dowels have projections for holding the associated springs in position.

Another object is to provide a side frame with spring plank dowels with spring-holding projections which are adapted to meet the various requirements under actual service conditions.

These and other objects are accomplished by means of the arrangements disclosed on the accompanying sheets of drawings, in which

Fig. 1 is a fragmentary side elevation of a railway car truck embodying my invention;

Fig. 2 is a fragmentary sectional view of the same, taken on the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary sectional view taken on the plane of line 3—3 of Fig. 2;

Fig. 4 is a fragmentary sectional view taken in the plane of the line 4—4 of Fig. 2, and

Figs. 5, 6, 7 and 8 are fragmentary top plan views of a spring plank showing dowel pin openings therein, and spring plank dowels having spring-holding projections shown in top plan, said figures showing various modifications in shapes and arrangements of said dowels and their projections, and also showing, in dotted lines, locations of dowels as heretofore used in certain standard trucks.

The novel features of the invention will be apparent from the following description and the drawings, and will be particularly pointed out in the appended claims.

Spring plank holding dowels heretofore used have been round and usually four of such dowels have been employed to hold the spring plank perpendicular to the side frames, thereby holding the side frames parallel for what is known as a square or rigid truck. In this type of truck employing a spring plank which is not held perpendicular to the frame, the purpose of the spring plank is merely to hold the frames a fixed distance apart. With a riveted or multiple dowel end construction, the spring plank acts not only as a spacer but also functions to hold the truck square.

In order to resist the tendency of truck frames to move parallel to each other, the dowels must have sufficient cross-sectional area to resist being sheared off, and they must also be of such diameter to prevent the material of the spring plank from crushing, due to insufficient side or surface bearing area of the dowels. Round dowels meet the above requirements. Within the practical limits of a side frame it will be understood the diameter of the dowels may be decreased as the distance between the dowels is increased.

In the design of side frames now in common use, additional metal is provided in the spring seat of the side frame for the purpose of widening same, and the length of the spring plank is correspondingly increased over what I have found to be necessary to form a proper spring seat, if the spring plank holding lugs are designed in accordance with my present invention. In locating the dowel holes in the spring plank, due care must be taken to provide sufficient distance between the dowel holes which are punched in the spring plank and the edge or end of the spring plank, for if this distance is made too small there will not be sufficient resistance to tearing of the metal under service conditions. In narrowing the spring seat of the side frame, I have taken due notice of this fact and have placed and shaped the spring plank holding dowels accordingly. In solving the problem, instead of providing round dowels, I have provided dowels which are non-circular and have increased the diameter of such dowels, which permits a closer spacing of said dowels. Another advantage in the use of non-circular dowels is an increase in the projected or side bearing area of said dowels with respect to

the walls forming the openings in the spring plank for a given cross-sectional area of the dowels. Furthermore, by spacing the dowels closer together, they may be provided with extensions or projections for holding the associated springs in position on the spring plank.

Referring to the figures of the drawings, and more particularly first to Figs. 1 to 4 inclusive, it will be noted that the invention is illustrated in connection with a railway truck, including side frames 10, each of which has a spring seat portion 11, said side frames being spanned by a spring plank 12. In this particular instance the spring seat portion is shown as having spring seats 13 and 14 on two different levels, but it will be understood that invention may be used equally well in connection with side frames having the spring seats all on the same level.

Referring now to Figs. 5 to 8 inclusive, it will be noted that in said figures, which are somewhat diagrammatic, that a spring plank 15 is shown and that dotted circles 16 also are shown which illustrate the location of spring plank holding dowels as now commonly located and used. Instead of locating the dowel pins as indicated at 16, I have located the dowels 17, reference now being had to Fig. 5, closer together, and have flattened one side of each of the dowels as at 18 to increase the distance between said flattened sides 18 and the end 19 of the spring plank to resist tearing of the material of the spring plank under service conditions. To compensate for moving the dowels closer to each other, their cross-sectional area has been increased to provide sufficient material to resist shearing. It will be noted that the dowels 17 have eccentrically arranged extensions or projections 20 which, however, are concentric with the truck springs as now used. Accordingly, by providing the dowels 17 with the eccentrically arranged projections 20, which are within the vertical confines of the dowels, simple means is provided for holding the springs in position.

In Fig. 6 three similar non-circular dowels 21 are provided which at their inner ends have spring-holding projections 22. It will be understood, of course, that the spring plank 15 is provided with holes or openings corresponding to the shape of the dowels 21. The location of the spring-holding projections 22 is such as to be concentric with the truck springs. In the lower lefthand corner of Fig. 6 there is shown, as a matter of illustration, a non-circular dowel 23, the major axis of which is not long enough to accommodate a spring-holding projection to cooperate with a spring, as indicated by the dot and dash line 24. Accordingly, if the dowel 23 is provided with a spring-holding projection the major axis of said dowel must be increased to that of the dowels 21. In Fig. 6 it will be noted that the major axes of the dowels extend diagonally with respect to the spring seat portion of the spring plank.

In Fig. 7 an arrangement somewhat similar to that shown in Fig. 6 is illustrated, but in this instance the dowels 25 and 26 have their major axes extending transversely of the width of the spring plank. Here again the dowels, while being capable of cooperating with the spring plank 15 to hold the truck side frame square, are not located in a manner to have spring-holding projections, the location of the springs being indicated by the dot and dash circles 27.

Referring to Fig. 8, four different modified forms of dowels are shown. The dowel 28 is so located that a full-sized spring-holding projection could not be used. The somewhat oval-shaped dowel 30 has an eccentrically arranged spring-holding projection 31, which may be used. The same is true with respect to the irregularly-shaped dowel 32 having a spring-holding projection 33. The dowel 34, being shaped somewhat like a kidney bean, by way of contrast, is located in such a position that it cannot be provided with a spring-holding projection, the location of the spring being indicated by the dot and dash line 35.

Referring now to Figs. 1 to 4 inclusive again, it will be noted that the spring seat portion of the side frame is reduced to a minimum, as probably best shown in Figs. 2 and 3, and that integrally formed non-circular lugs 35 are provided on the spring seats and extend through correspondingly-shaped openings 36 in the spring plank 12. Two of the dowels 35 are provided with eccentrically arranged spring-holding lugs 37, which are circular in cross-section, and the other two spring plank holding dowels are provided with spring-holding projections 38, which are somewhat irregular in shape.

By means of the arrangement above described, the dowels are made larger to increase their shearing strength and illustrate in various forms the provision of spring-holding projections. The dowels are grouped more closely than the standards now in use, and an increased distance is provided between the end dowel openings in the spring plank and the ends of the spring plank to provide greater resistance against tearing of the metal of the spring blank. At the same time, by providing non-circular dowels, the projected or side bearing area of said dowels which engage the walls formed by openings in the spring plank is increased for a given cross-sectional area of the dowel.

It is my intention to cover all modifications of the invention falling within the scope of the following claims.

I claim:

1. In a railway car truck, the combination of a side frame having a seat for the reception of a spring plank, a plurality of spaced non-circular spring plank dowels on said seat whereby the end dowel may be spaced a greater distance from the end of the spring plank to resist tearing that portion of the spring plank and whereby the side bearing area of said dowels is increased for a given horizontal cross-sectional area of said dowels, and a spring plank resting upon said seat and having openings for the reception of said dowels.

2. In a railway car truck, the combination of a side frame having a seat for the reception of a spring plank, a non-circular spring plank dowel on said seat whereby said dowel may be spaced a greater distance from the end of the spring plank to resist tearing that portion of the spring plank and whereby the side bearing area of said dowel is increased for a given horizontal cross-sectional area of said dowel, and a spring plank resting upon said seat and having an opening for the reception of said dowel, said dowel also having a portion for holding an associated spring in position.

3. In a side frame having a seat for the reception of a spring plank, a non-circular spring plank dowel on said seat whereby said dowel may be spaced a greater distance from the end of the spring plank to resist tearing that portion of the spring plank and whereby the side bearing area of said dowel is increased for a given horizontal cross-sectional area of said dowel, said dowel having a spring-holding projection.

4. In a side frame having a seat for the reception of a spring plank, a non-circular spring plank dowel on said seat whereby said dowel may be spaced a greater distance from the end of the spring plank to resist tearing that portion of the spring plank and whereby the side bearing area of said dowel is increased for a given horizontal cross-sectional area of said dowel, said dowel having an eccentrically arranged spring-holding projection.

5. In a railway car truck, a side frame having a seat for the reception of a spring plank, non-circular spring plank dowels on said seat whereby an end dowel may be spaced a greater distance from the end of the spring plank to resist tearing of that portion of the spring plank and whereby the side bearing area of the dowels is increased for a given horizontal cross-sectional area of said device, and a spring plank resting on said spring seat and having openings for the reception of said dowels, said dowels having extensions for holding associated springs in position.

6. In a railway car truck, a side frame having a seat for the reception of a spring plank, non-circular spring plank dowels on said seat whereby an end dowel may be spaced a greater distance from the end of the spring plank to resist tearing of that portion of the spring plank and whereby the side bearing area of the dowels is increased for a given horizontal cross-sectional area of said dowels, a spring plank resting on said spring seat and having openings for the reception of said dowels, said dowels having eccentrically arranged extensions for holding associated springs in position.

7. A side frame having a non-circular spring plank holding dowel with a spring-holding projection.

8. A side frame having a non-circular spring plank holding dowel with an eccentrically arranged spring-holding projection.

9. A side frame having a spring plank holding dowel with an eccentrically arranged spring-holding projection.

Signed at St. Louis, Missouri, this 17th day of April, 1925.

HARRY C. DREIBUSS.