

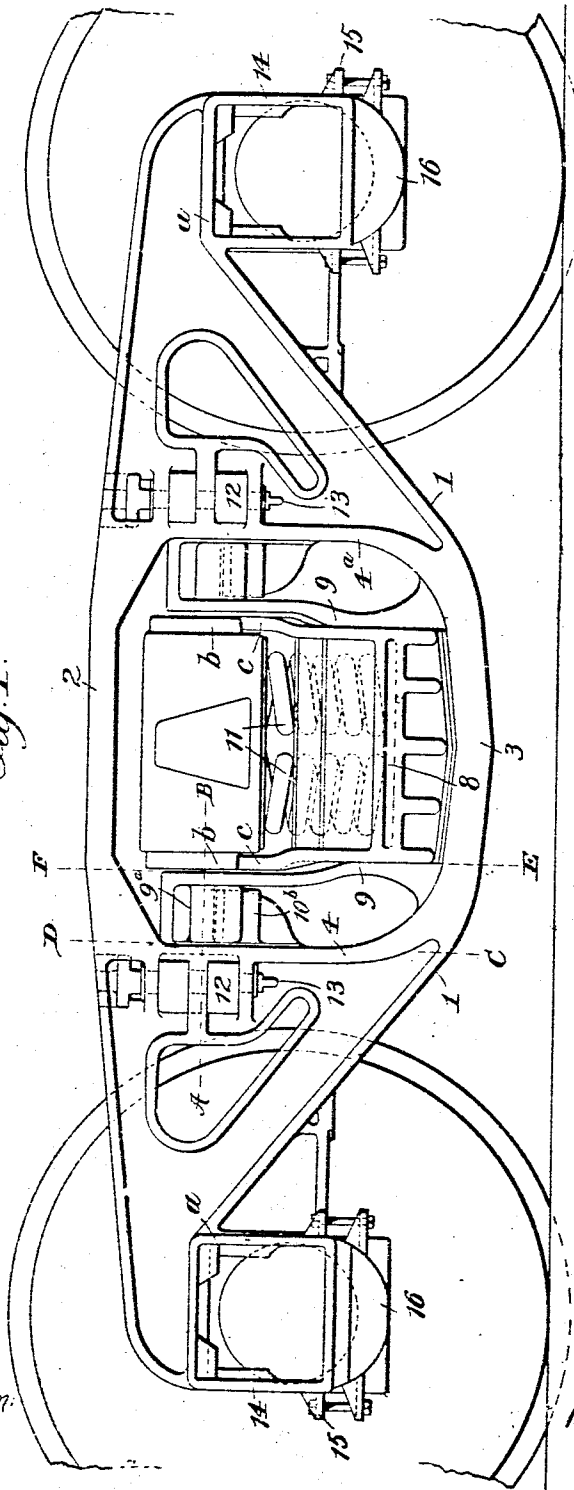
964,824.

C. D. YOUNG.
SWING MOTION TRUCK FOR CARS.
APPLICATION FILED MAR. 28, 1910.

Patented July 19, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



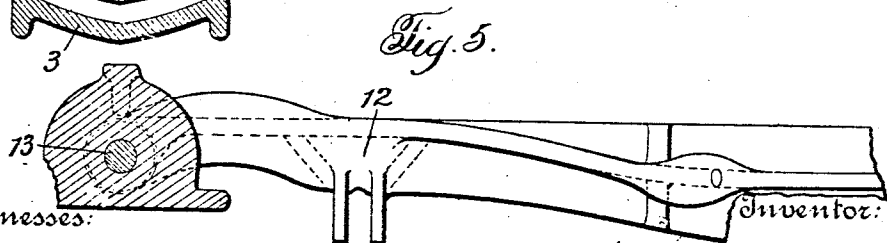
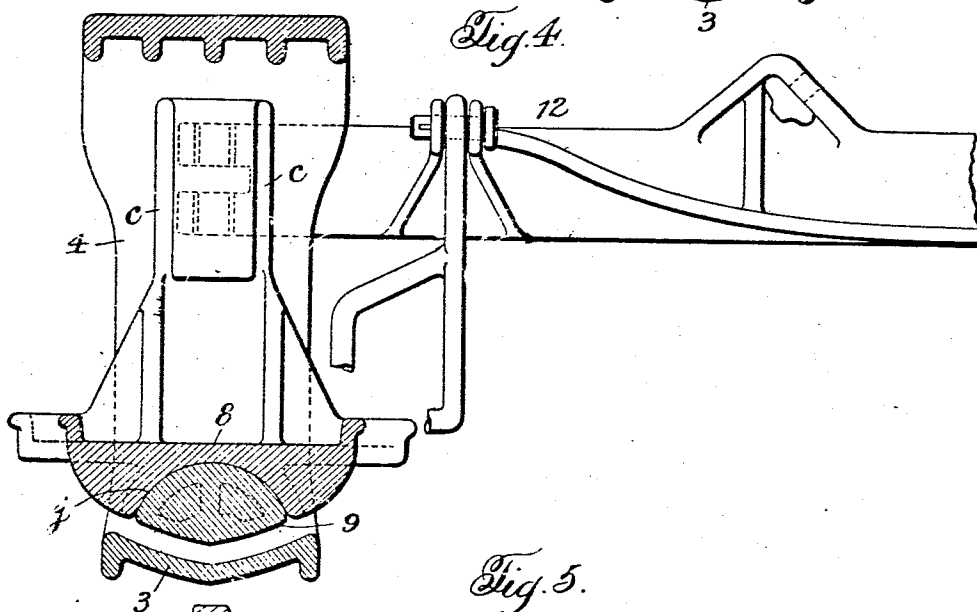
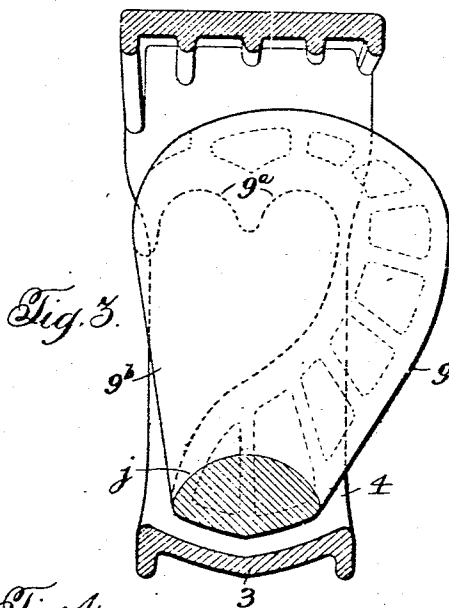
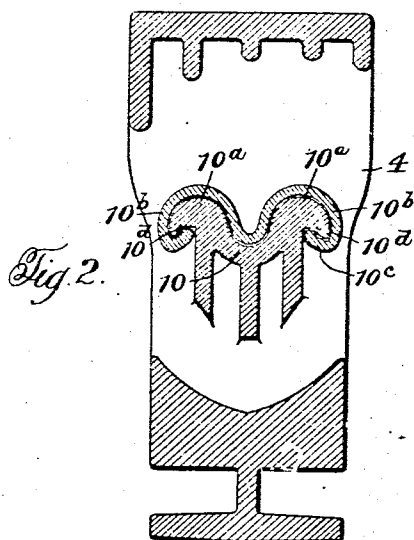
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CHARLES DUNCANSON YOUNG, OF COLUMBUS, OHIO.

SWING-MOTION TRUCK FOR CARS.

964,834

Specification of Letters Patent. Patented July 19, 1910.

Application filed March 28, 1910. Serial No. 552,083.

To all whom it may concern:

Be it known that I, CHARLES DUNCANSON YOUNG, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Swing-Motion Trucks for Cars; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to an improvement in swing motion trucks for cars, and is designed particularly as an improvement on the construction disclosed in Patent No. 944,165, granted to me December 21st, 1909, the object of the present invention being to dispense with the removable pins supporting the yokes carrying the bolster, and mount the yoke on parts integral with the truck columns, thus strengthening the truck structure, and eliminating the liability of accident due to breakage or displacement of the yoke holding pins.

A further object is to provide a construction wherein the upper part of the axle boxes are formed integral with the side frames of the truck, the collars or lower parts of the boxes being removable and detachably secured to the upper parts of the boxes.

A further object is to provide a construction, whereby in the event of breakage of any of the bolster suspending parts, the said parts will become locked within the side frames, thus making the truck safe for continued service.

With these and other objects in view, my invention consists in the parts and combination of parts as will be more fully described and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view in side elevation of a truck embodying my invention some of the concealed parts being shown in dotted lines. Fig. 2 is a view in vertical section through one side frame on the line C—D of Fig. 1. Fig. 3 is a view in section on the line E—F. Fig. 4 is a similar view through the center of one side frame, and Fig. 5 is a view in horizontal section on the line A—B of Fig. 1.

1 represents the side frame of the truck composed of an upper arch 2, a lower arch 3, parallel vertical columns 4 and 4^a and journal boxes *a*, all the above parts being cast integral.

Formed in the frame between the upper and lower arches and the columns 4, is the bolster opening. The bolster is supported at its ends within the openings in the two side frames, upon the springs 11, carried by the spring seats 8, the latter being mounted upon the lower member of the hanger yokes 9, the vertical members of which are suspended from their upper ends on two lugs 10, as clearly shown in Fig. 3. These lugs or supports 10, are cast integral with the columns 4, and project into the bolster opening, and each lug or support is provided with two rounded bearing surfaces 10^a as clearly shown in Fig. 2. The two bearing surfaces 10^a on each column, are located in the same horizontal plane on opposite sides of the vertical center of their column, and each pair is provided with a removable plate 10^b shaped to conform to the top surface of the lugs, and secured to the latter by bending its ends 10^c under the flanges 10^d. This plate is introduced or placed endwise on the lugs, and when in place is held against outward displacement by the side arms of the yoke. These plates 10^b are designed to protect the lugs 10^a from wear, and by using plates of different thicknesses the height of the yoke or rather the distance between the upper face of the lower arch and the horizontal member of the yoke can be adjusted as desired.

The bearing lugs 10^a, two for each upright member of each yoke, rest within the curved seats 9^a formed in the outer faces of the upright members of the yoke, as shown in Fig. 3, which seats 9^a are located on opposite sides of the vertical center of said members, so that normally the yoke will rest on all four bearing lugs 10^a, consequently cannot swing except when the truck tilts, as when turning a curve or when forcibly swung by the endwise movement of the bolster.

One of the features of my invention is the novel construction of the yoke 9 which provides for the maximum strength of an open hook hanger yoke, with the minimum amount of material. This is obtained by providing an integral bridge 9^b across the opening of the hooked shaped hanger members as shown in Fig. 3. This bridge is simply a plate or web integral with the yoke 9 and bridging or closing the space between the hooked shaped ends of the yoke and the body of the latter, thus tying the curved seats 9^a formed in the outer faces of the up-

right members with the horizontal member of the yoke 9 which supports the spring seat 8.

The upper face of the lower or horizontal member of the yoke, is curved in the arc of a circle, and forms a support for the spring seat 8, which latter is enlarged on its under face at its center, which enlargement is provided with a concave recess conforming in shape and size to the convex face of the horizontal member of the yoke. This spring seat is a box like structure open at its top and provided at its front and rear with upwardly projecting integral members *c*, forming in effect columns which latter are embraced or overlapped by the guides *b* secured to the bolster, and operate to guide the latter in its vertical movements. As the spring seat is mounted to rock on the yoke, and as the bolster guides embrace the upwardly projecting members *c* of the spring seat, it follows that any endwise movement of the bolster will be transmitted to the spring seat and either rock the latter on the yoke or cause the yoke to swing.

One important feature of my invention is the construction of the lower arch, and from an inspection of Figs. 2, 3 and 4, it will be seen that the contour of the upper face thereof is formed by striking arcs from the center of the two lugs 10 on which each upright member of the yoke is journaled, the two curved surfaces forming in effect a pocket in which the lower member of the yoke moves. By reason of the two supporting lugs for each upright member of the yoke, the path of movement of the spring seat 8 and yoke 9 in swinging, is concentric with the curved surfaces of the pocket, and owing to the shape of the lower arch, the size of the yokes, and the proximity of the lower member of the latter to the pocket in the lower arch, it is apparent that if one or more lugs 10, or the yoke should break, the latter would fall into the pocket and thus sustain the parts in position for safe service.

If one lug should break, or the yoke be ruptured and disengaged from one lug, the weight will be transferred to the other lug thus changing the center of gravity of the yoke, and swinging its lower end sidewise and into contact with the lower arch. The parts are then locked and rigid. The truck under these conditions becomes of the rigid type, and is safe for operation, in that it will be impossible for the bolster 7 to disengage itself from side frame 1, on account of the shape of the carrying arch 3, and the construction of the engaging surfaces of the spring seat and yoke. Any breakage that would let the lower member of the yoke down onto the lower arch, would also lower the engaging surfaces of the spring seat onto the arch and thus support the spring seat solidly on the arch.

The cylindrical bearing of the spring seat on the horizontal member of the yoke, as shown at *j* in Fig. 4, is of ample area to reduce the wear of parts 8 and 9 to a minimum and bring the lowest point of swinging for hanger yoke 9 contiguous to lower arch 3.

While I have shown a hanger with two lug supports at each side, I do not confine my invention to such construction, as the form of arches may be made to conform to any method of supporting, such as one lug center hung, or one lug to the right or left of center.

Each side frame 1 is provided with openings at points as close as possible to the point of loading, to receive the ends of the cross ties 12, which latter are pivotally secured to the side frames, on opposite sides of the bolster by pins 13 as shown in Fig. 5. By this arrangement I provide for flexibility between the side frames and cross ties without affecting the parallelism of the side frames.

The upper sections 14 of the journal boxes *a* are cast integral with the side frame, and are provided at their front and rear sides with lugs 15 for the passage of bolts which secure the bottoms or cellars 16 of the boxes, to the upper parts of the boxes. The journal box lid openings and ribs for the wedges and brasses are formed wholly in the upper portion of the boxes, while the lower separable part simply acts as a container or support for the waste and oil.

It is evident that many slight changes might be resorted to in the relative arrangement of parts shown and described without departing from the spirit and scope of my invention: hence I would have it understood that I do not wish to confine myself to the exact construction and arrangement of parts shown, but,

Having fully described my invention what I claim as new and desire to secure by Letters-Patent, is:—

1. In a swing motion truck, the combination with an integral side frame having a bolster opening therein, the side walls of said opening having integral lugs, of an integral yoke journaled on said lugs, and a spring seat independent of the yoke and mounted on the latter.

2. In a swing motion truck the combination with an integral side frame having a bolster opening therein, the side walls of said opening having integral lugs, of an integral yoke journaled on said lugs, and a spring seat independent of the yoke and mounted on the latter, the said spring seat having upstanding members adapted to be embraced by guides on the bolster.

3. In a swing motion truck, the combination with an integral truck frame having integral journal boxes with separable cellars at either end, a bolster opening between

- said boxes, the lower wall of the bolster opening having a recess or pocket in its upper face, and the side walls of the bolster opening having integral lugs extending into the bolster opening, of a swinging yoke journaled on said integral lugs, within the bolster opening above said recess or pocket, and a bolster carried by said yoke.
4. In a swing motion truck, the combination with an integral side frame having a bolster opening therein, the lower wall of said opening having a recess or pocket therein, and the side walls having integral lugs, of a yoke journaled on said lugs, a spring seat mounted on the yoke, a spring carried by said seat and a bolster mounted at one end on the spring.
5. In a swing motion truck, the combination with an integral side frame comprising upper and lower arches and columns, the latter having integral yoke carrying means, the lower arch being provided on its upper face between the columns with a depression or pocket to receive the yoke in event of breakage of any of the suspending parts, of a yoke journaled on the carrying means on the columns, and a spring seat journaled on the yoke.
6. In a swing motion truck, the combination with an integral side frame having a bolster opening and a pocket at the base of said opening, of a yoke pivoted on lugs cast integral with the side frame, said yoke suspended in a plane above the pocket, a spring seat journaled on the yoke and provided with upstanding members, a spring on said seat, and a bolster seated on the spring and provided with guides embracing the upstanding members of the spring seat.
7. In a swing motion truck, the combination with an integral side frame having a bolster opening, of a yoke mounted upon lugs cast integral with the side frame, to swing in said opening, a spring seat carried by said yoke and having upwardly projecting members, a spring on said seat, and a bolster having guide flanges embracing the upwardly projecting members of the spring seat.
8. In a swing motion truck, the combination with a side frame having integral journal boxes and integral upper and lower arches and columns the latter having integral yoke supporting lugs, the upper face of the lower arch being concaved, of a yoke each upright member of which is provided with bearing supports, engaging the lugs integral with the columns, each bearing support of said yoke concentric to one side of the lower arch and eccentric to the other side and a bolster supported on said yoke.
9. In a swing motion truck, the combination with an integral truck frame having a bolster opening therein, the vertical side columns of the bolster opening having integral lugs, of a swinging yoke journaled within the bolster opening, and means for renewing or adjusting wear of said lugs.
10. In a swing motion truck, the combination with an integral side frame having a bolster opening therein, and yoke supporting lugs integral with the side walls of the bolster opening, of a yoke each upright member of which is provided with bearing supports resting upon said lugs and means for taking up wear and for adjusting height of said yoke.
11. In a swing motion truck, the combination with an integral side frame composed of integral journal boxes with separable cellars, and upper and lower arches and columns, the latter having integral yoke supporting lugs, the upper face of the lower arch being concaved, of a yoke each upright member of which is provided with bearing supports, engaging the lugs on the columns, and means for taking up wear and adjusting height of said yoke each of said supporting lugs being concentric with one side of the concavity in the lower arch and eccentric to the other side.
12. An integral hanger yoke for railroad trucks provided with bearing supports on each hanging member and a plate or web to prevent the spreading of said bearing supports and hanging members.
13. An integral hanger yoke for railroad trucks consisting of two vertical supporting columns and a horizontal cross tie or seat, said supporting columns provided with means to prevent the spreading of the hanger at its bearing points on said supporting columns.
- In testimony whereof, I have signed this specification in the presence of two subscribing witnesses.
- CHARLES DUNCANSON YOUNG.
- Witnesses:
H. G. VENOR,
H. S. NEEDHAM.