April 12, 1932. G. T. JOHNSON ET AL 1,853,619

TRUCK FOR RAILWAY CARS

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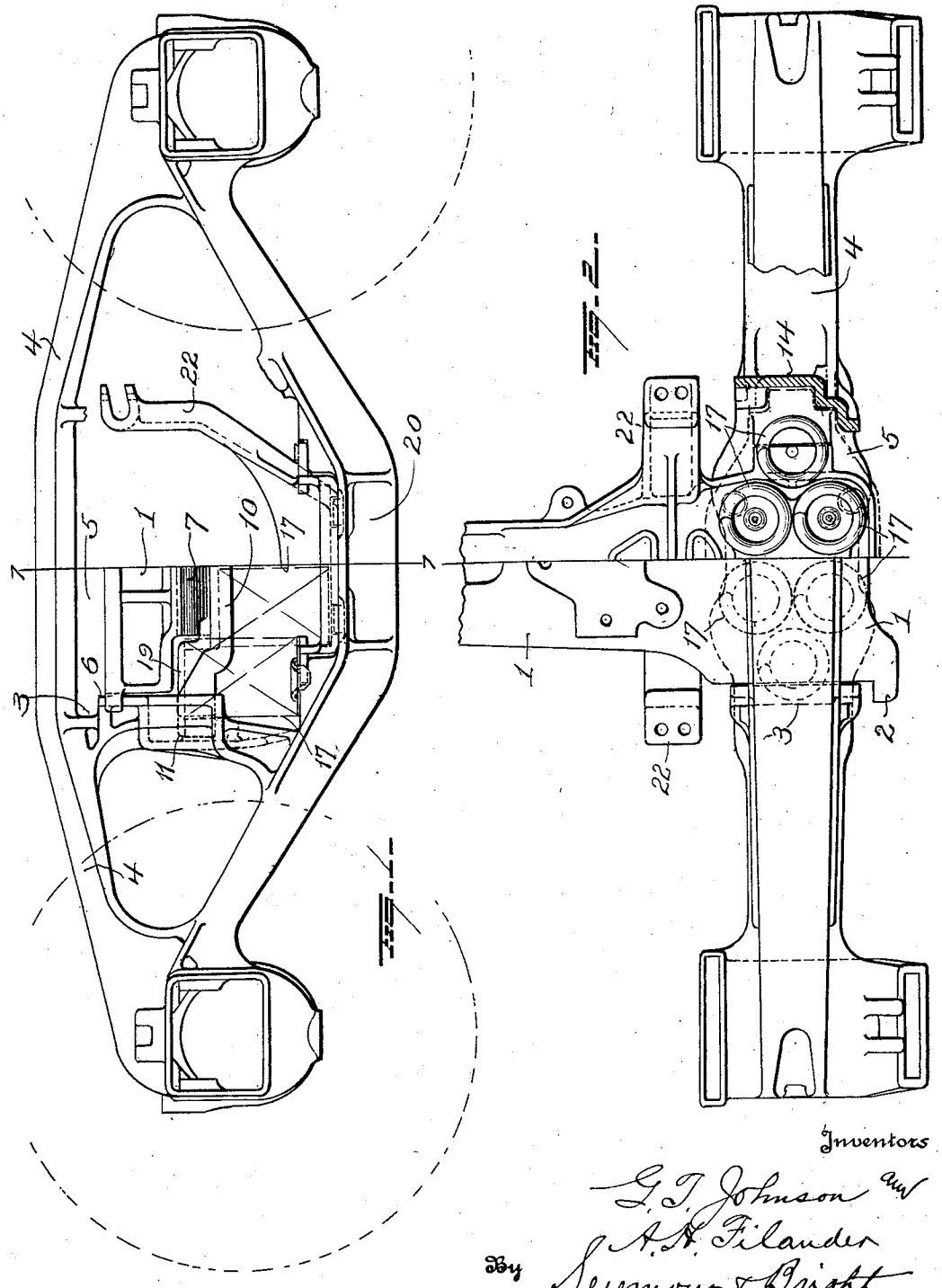

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Fig. 3.

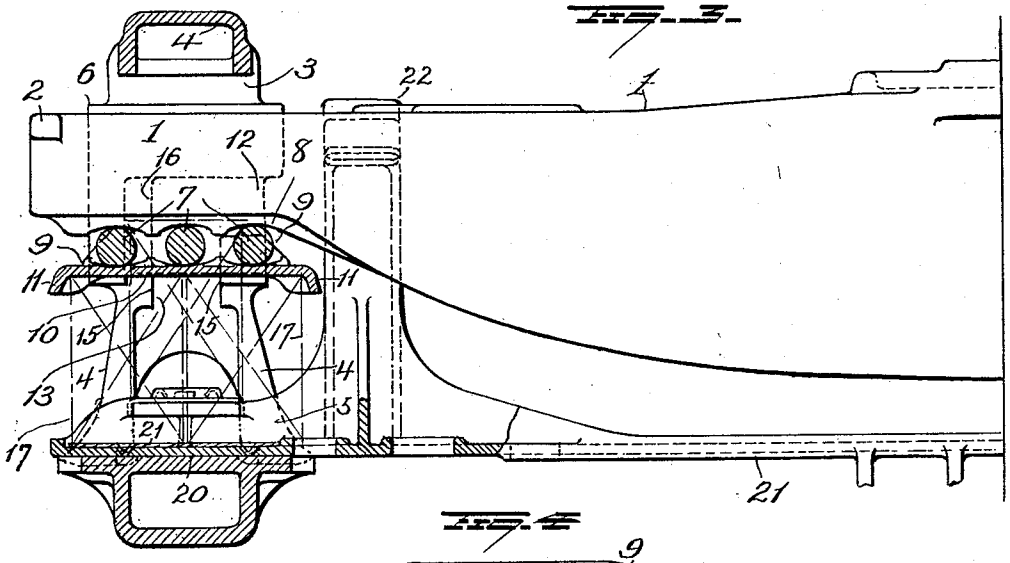

Fig. 4.

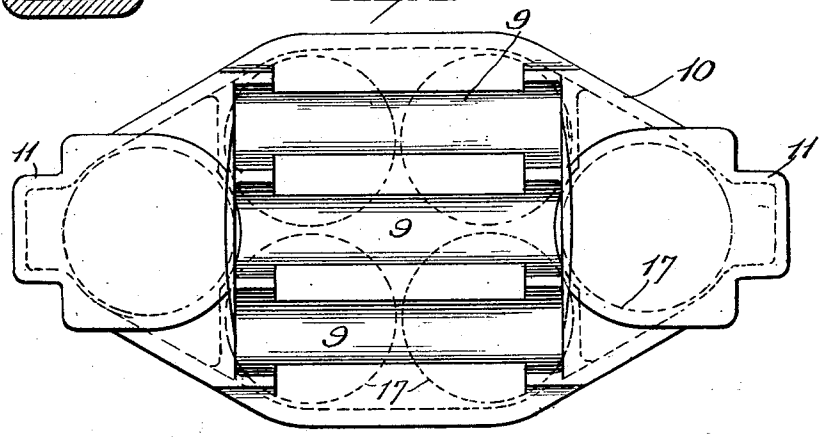

Fig. 5.

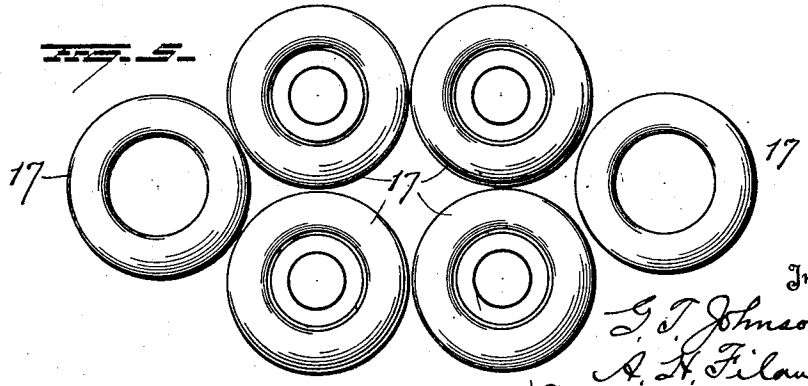

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Fig. 6.

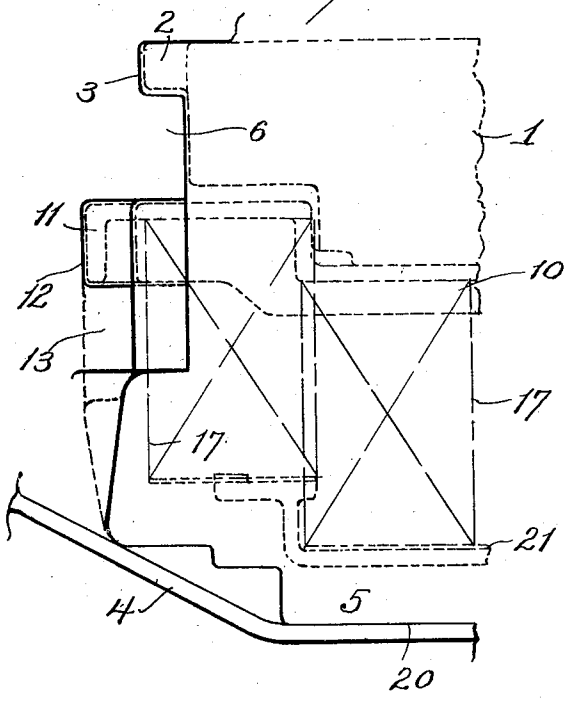


Fig. 7.

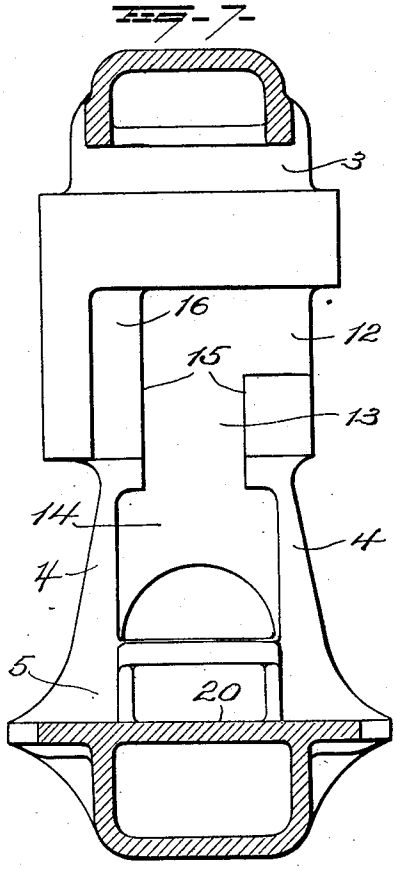


Fig. 8.

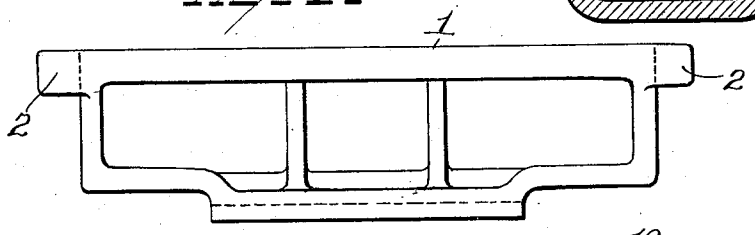
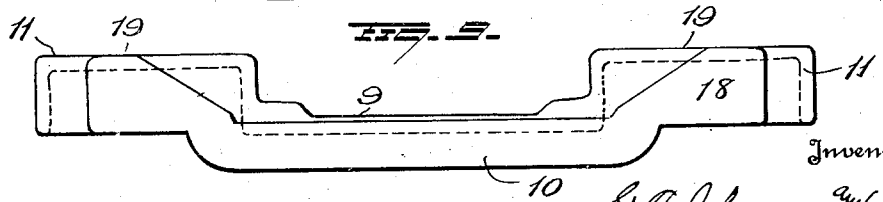


Fig. 9.



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UNITED STATES PATENT OFFICE

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TRUCK FOR RAILWAY CARS

Application filed December 17, 1928. Serial No. 326,568.

This invention relates to railway rolling stock, and especially to a novel truck for railway cars.

Such trucks usually include pairs of wheels mounted on transverse axles having projecting ends which fit into bearings in side frames that support the spring assemblies on which the bolster rests. Some of such trucks are known as "lateral motion trucks", for in those structures, the bolster may shift laterally relatively to the side frames, and on the other hand, the side frames may shift laterally relatively to the bolster. Our invention is directed particularly to trucks of this character, and the primary object is to furnish a structure which will facilitate assembly, and dismantling, and permit especially, quick removal or replacement of the wheels.

A further object is to provide a truck of the lateral motion type, in which either one or both of the side frames may be expeditiously removed after the spring planks, springs, spring caps, bolster, and the attached brake parts, have been elevated as a unit to a predetermined height relatively to one or both of the side frames.

A still further object is to furnish a lateral motion truck in which certain parts are provided with projecting portions designed to enter guideways in other parts, and to interlock the parts together, when the spring planks are lowered relatively to the side frames.

Another object is to provide a truck of this type, in which the side frames have horizontally disposed guides to allow oppositely extending projections on the bolster to pass through the side frames, and to them be lowered with the bolster relatively to the side frames for interlocking the bolster and side frames.

Another object is to furnish spring caps having opposite projections designed to enter recesses in the side frames, which communicate with vertical guides, whereby after the projections of a spring cap have been introduced through the recesses into the guides and lowered, the guides will interlock with the projections to prevent excess lateral movement of the same while readily permitting the cap to move verticaly with the springs.

The invention will now be described in detail, in connection with the accompanying drawings, in which

Fig. 1 is an elevation of one side of the truck, with certain parts broken away, and other parts in dotted and dash lines to facilitate illustration.

Fig. 2 is a plan view partly in horizontal section, of one side of the truck and with the wheels on that side omitted.

Fig. 3 is a transverse vertical sectional view of one side of the truck, and with the bolster shown in elevation.

Fig. 4 is a top plan of one of the improved spring caps.

Fig. 5 is a plan view of one set of springs.

Fig 6 is a fragmentary elevation of a part of one of the side frames, and showing in dotted lines, the spring planks, springs, spring cap and bolster in the elevated position which these parts occupy when the side frame is to be attached to the end of the bolster, or to be detached therefrom.

Fig. 7 is a vertical sectional view of one of the side frames, taken on line 7—7 in Fig. 1, and with the spring planking, springs, spring cap and bolster removed.

Fig. 8 is an end view of the bolster.

Fig 9 is an elevation of one of the improved spring caps.

In the drawings, 1 designates a bolster which may be of any desired construction, so long as it is provided at its ends with oppositely extending lugs 2, which may pass through guides 3 provided in the side frames 4. It will be obvious that instead of placing the lugs on the bolster and the guides on the side frames, these parts might be reversed, and the lugs might go on the side frames and the guideways be placed in the bolster.

The purpose of this construction is to permit the side frames to be moved on to the ends of the bolster, when the latter is in an elevated position. At such times, the lugs will be aligned with the guides 3, and when the side frames are moved laterally, the lugs will readily pass along the guides. After

the ends of the bolster have been passed through the main openings 5 of the side frames, it is apparent that when the bolster is lowered, the lugs will be in position to strike projecting extensions 6 on the side frames, and this will limit the lateral movement of the bolster.

Each end of the bolster is supported by a plurality of rollers 7, that roll in inverted grooves 8 on the under side of the bolster, and in similar grooves 9 on a spring cap 10. These rollers allow the lateral motion heretofore mentioned.

Each of the spring caps, as best shown in Figs. 4, 6 and 9, is provided at its ends with lugs 11, preferably forming part of the casting from which the cap is made, and these lugs are designed to enter horizontal grooves or gates 12 arranged on the inner sides of the side frames, (see Figs. 2, 6 and 7). These grooves or gates communicate with vertical grooves 13, formed in the columns 14 of the side frames, and the opposite walls 15 of each guide 13 form stops for limiting the lateral movement of the cap after the lugs 11 of the latter have been introduced through the gates 12 into the vertical guides.

It will be observed at this point that as the end of the bolster rests on the rollers 7, which are in turn carried by the spring cap, that at the time the lugs 11 of the cap are in position to pass through the gates 12, the lugs 2 of the bolster will also be in position to travel in the grooves 3, as best shown in Fig. 6. Of course, the walls 16 of the columns 14 opposite the gates 12 form obstructions to prevent the lugs 11 from being passed entirely through the side frame from the inner side to the outer side of the latter.

As is customary in lateral motion trucks, the spring cap 10 rests on springs 17, preferably of coiled type, and the end springs of each series are at a slightly higher elevation than the other springs of the series, and enter cavities 18 formed in the bottom of the extensions 19 of the cap.

In the present invention, each set of springs rests on a spring plank 21, which is specially shaped to engage with and rest on the yoke 20 of the side frame, and from this plank, but integral with it, rises brackets 22 for supporting the brake rigging.

The side frames, as is usual, are provided with boxes 23 to receive the ends of the wheel axles.

From the above it will be clear to those skilled in the art that when jacks are placed under the spring plank bar 21, and the latter is raised, its ends will be lifted off the yokes 20 of the side frames, and at the same time, the lugs 11 of the spring caps will rise to positions in alignment with the gates 12. Obviously, as the spring caps rise, they will lift the bolster 1 and its lugs 2 will be brought into alignment with the grooves 3. Now if the usual brasses and wedges are removed, either side frame may be detached by simply moving the same horizontally in a direction away from the end of the bolster.

On the other hand, the side frame may be replaced by a similar movement, but in the opposite direction, and of course when the jacks are lowered, the lugs 2 will overlap the extensions 6 of the frame, and the lugs 11 of the spring cap will again engage the guideways 13.

When the parts are properly assembled, it will be recognized that the spring caps may rise and fall with the bolster, and the walls 15 of the grooves 13 will prevent undue lateral movement of these caps, and at the same time, the bolster may shift laterally on the rollers 7, but it will be prevented from shifting to too great an extent by the lugs 2 striking the extensions 6.

From the foregoing, it is believed that the construction, operation and advantages of the invention may be readily understood by those skilled in the art, and it is apparent that changes may be made in the details disclosed, without departing from the scope of the annexed claims.

What is claimed and desired to be secured by Letters Patent is:

1. A car truck including a bolster member and a side frame member, said side frame member being adapted to be moved on or off one end of the bolster member, one of said members having projecting lugs, and the other member having guides at its top portion to permit the passage of the lugs when the side frame member is placed on or taken off the bolster member, rollers supporting an end of the bolster member, a spring cap supporting the rollers, and springs supporting the spring caps and carried by the side frame member.

2. A car truck including a bolster member and a side frame member, the side frame member having an opening through which an end of the bolster member may project and move upwardly and downwardly, one of said members having projections and the other having guideways at its top portion to accommodate said projections, for permitting the side frame member to be moved on or off one end of the bolster member, and resilient supporting means for an end of the bolster member, including rollers to allow the bolster member to shift laterally relatively to the side frame member.

3. A car truck including a bolster and a side frame, the side frame having an opening into which one end of the bolster may project and move upwardly and downwardly, grooves in the side frame, oppositely projecting lugs on the bolster designed to occupy said grooves when the side frame is moved on or off the end of the bolster, and extension walls on the side frame projecting toward

each other, below said grooves, and overlapping said lugs to prevent disengagement of the bolster with the side frame when the lugs are out of alignment with said grooves, said lugs being spaced from said extension walls, and the spaces being unobstructed to allow lateral shifting of the bolster.

4. In a car truck, a side frame member having an opening therein, a bolster having one of its ends extending into said opening, a spring cap member on which the bolster end rests, one of said members being provided with oppositely extending lugs, and the other member having angular grooves to receive said lugs, said members being disconnectible from one another when the spring seat member is in elevated position.

5. A car truck including a side frame having an opening therein, a bolster having one of its ends extending into said opening, a spring cap in the opening on which the bolster end rests, angular grooves provided in opposite side walls of the side frame, and oppositely extending lugs on the spring cap engaging said grooves, said grooves normally preventing the spring cap from detaching from the side frame, but permitting quick detachment when the cap and side frame are in certain relative positions.

6. A car truck including a side frame member, a bolster member, one of said members having guides and the other having lugs slidable in said guides, a spring cap member on which the bolster end rests, other guides on one of said members, and additional lugs on another one of said members to permit the cap member to be interlocked with the side frame member.

7. A car truck including a side frame having an opening therein, a bolster having one of its ends extending into said opening, guides on the side frame, lugs on the bolster adapted to slide through said guides for interlocking the bolster to the side frame, a spring cap, rollers interposed between the bolster and cap and permitting lateral motion of the bolster, angular guides on the side frame, and lugs on the cap engageable with the angular guides, said angular guides permitting quick detachment of the spring cap from the side frame.

8. A car truck including a spring plank, springs supported by the plank, a spring cap resting on the springs, rollers carried by the cap, a bolster having one of its ends resting on said rollers, said parts capable of moving up and down as a unit, a side frame having an opening into which said parts extend, and interlocking elements on the bolster, cap and side frame permitting detachment of the side frame by a horizontal movement of the latter away from the bolster when said unit is in a certain position relatively to the side frame.

9. A car truck including a wheel supported side frame having an opening therein, a spring plank in the opening and resting on said side frame, springs carried by the plank, a spring cap supported by the springs, said side frame having oppositely disposed angular grooves, and said cap having lugs extending into said grooves, rollers supported by the cap, a bolster having one of its ends extending into the opening of the side frame and resting on said rollers, other grooves provided in the side frame, and lugs on the bolster adapted to move through the last mentioned grooves in mounting or dismounting the side frame.

10. A car truck including a spring plank, springs, a spring cap, and a bolster end movable up and down as a unit, a side frame having an opening to receive said unit, and means on the cap, bolster and side frame for normally preventing the unit from moving laterally to an undue extent relatively to the side frame, said means permitting quick detachment of the side frame when the unit has been elevated to a certain position relatively to the side frame.

In testimony whereof, we have signed this specification.

GEORGE T. JOHNSON.
ARTHUR H. FILANDER.