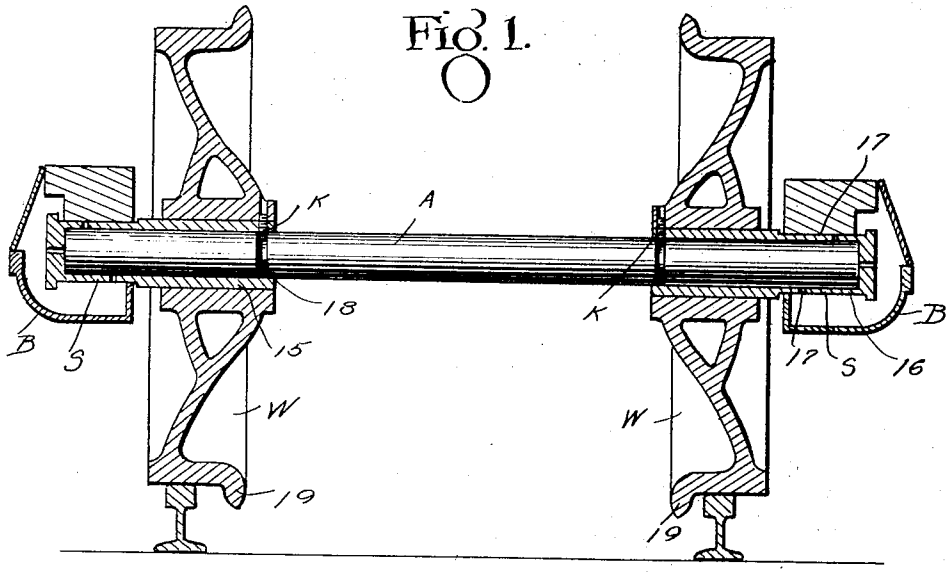
T. LITTLEFIELD.

RAILWAY CAR WHEELS AND AXLE.

APPLICATION FILED MAR. 2, 1921.

1,386,124. Patented Aug. 2, 1921.

Fig. 1.



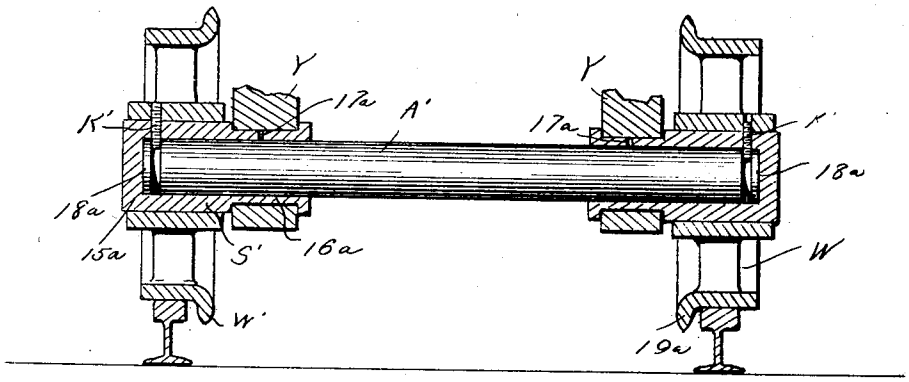


Fig. 2.

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THOMAS LITTLEFIELD, OF EXIRA, IOWA.

RAILWAY-CAR WHEELS AND AXLE.

1,386,124. Specification of Letters Patent. Patented Aug. 2, 1921.

Application filed March 2, 1921. Serial No. 449,017.

To all whom it may concern:

Be it known that I, THOMAS LITTLEFIELD, a subject of the King of Great Britain, and a resident of Exira, in the county of Audubon and State of Iowa, have invented certain new and useful Improvements in Railway-Car Wheels and Axles, of which the following is a specification.

My invention relates to railway car wheels and axles, and the purpose of my invention is the provision of a special form of car wheels and novel means for supporting the wheels on an axle, whereby, the wheels can rotate together when traversing a straight stretch of track and independently of each other when traversing a curved stretch of track thus allowing the rotation of the wheels at different speeds when rounding curves and thereby preventing the uneven wear of track rails.

I will describe one form of wheel and two forms of axles, each embodying my invention, and will then point out the novel features thereof in claims.

In the accompanying drawings:

Figure 1 is a view showing in vertical section one form of wheel and axle adapted for use on a railway car and in applied position upon the rails of a track.

Fig. 2 is a view similar to Fig. 1 showing my invention modified to permit of its application to a mine car.

Referring specifically to the drawings and particularly to Fig. 1, my invention in its present embodiment comprises an axle A upon the opposite ends of which are rotatably fitted a pair of bearing sleeves S having thickened portions 15 upon which are mounted wheels W and relatively thin portions 16 upon which are mounted journal boxes B of standard construction. The journal boxes B are adapted to contain a lubricant which is conveyed to a point between the bearing sleeves S and the axle A by means of ducts 17 formed in the sides and closed ends of the sleeves.

The sleeve S although being rotatable upon the axle A are locked against longitudinal displacement by any suitable means such as the keys K engaging the walls of annular grooves 18 formed in the axle A. These keys also serve to affix the wheels W to the bearing sleeves S by being extended through the inner ends of the hubs of the wheels in the manner shown.

From the foregoing arrangement it will be seen that the wheels W being affixed to the bearing sleeves S and the latter rotatable upon the ends of the axle, it will be clear that the wheels are capable of independent rotation, and that the axle is rendered full floating. The journal boxes B effect the thorough lubrication of the axle and bearing sleeves through the medium of the ducts 17, while the sleeves and wheels can be readily detached from the axle by removing the keys K.

The wheels W are provided as usual with flanges 19 on their inner edges, but it is to be particularly noted that the wheels are of a uniform diameter in cross section and do not taper from the inner edge to the outer edge as do the ordinary form of car wheels. A wheel of this form is particularly adapted for use in conjunction with the axle and bearing sleeves previously described to prevent lateral shifting of the wheels on the rails of the curved portions of a track, as will be more fully described hereinafter.

In the application of the invention to a railway car, the wheels W when traversing a straight stretch of track rotate in synchronism by virtue of the fact that they have equal traction with the rails because of the flat transverse contour of their periphery. However, when the wheels are traversing a curved stretch of track they can rotate independently of each other thereby permitting the outer wheel to rotate at a greater speed than the inner wheel thus eliminating the skidding or sliding movement of the outer wheel and thereby preventing the uneven wearing of the rails. Any lateral skidding of the wheels is prevented by virtue of the contour of the peripheries of the wheel as it will be noted that their peripheries contact with the entire tread surface of the rails thereby providing sufficient traction to prevent lateral sliding of the wheels on the rails under the lateral stresses to which the wheels are subjected when traversing curves.

In Fig. 2 I have shown my invention modified to permit of its application to a mine car. In this embodiment of my invention the axle A′ carries at its opposite ends bearing sleeves S′, the thickened portions 15^a of the sleeves being disposed at the outer or closed ends thereof and at the outer ends of the axle. The thin portions 16^a of the sleeves are at the confronting ends of the

two sleeves, and these portions are embraced by the bearing yokes Y of a mine car chassis, a lubricant being applied to the sleeves and axle through ducts 17^a formed on the portions. The bearing sleeves S′ are retained upon the axle A′ by means of keys K′ extending through the sleeves and into grooves 18^a formed on the opposite ends of the axle. The wheels W′ are fixed to the bearing sleeves by extending the keys K′ through the hub of the wheels, and it is to be noted that the wheels are disposed at the extreme ends of the axle A′, which arrangement is necessary to permit of its adaptation to mine cars of standard construction.

The second form of my invention operates in the same manner as the first form, and the wheels W′ are likewise provided with flanges 19^a and are of uniform diameter from their inner edges to their outer edges thus causing them to contact with the entire tread surface of the rails.

What I claim is:

1. In combination, an axle, bearing sleeves rotatably mounted on the opposite ends of the axle, each of the sleeves including a thickened portion and a relatively thin portion having ducts formed therein, wheels mounted on the thickened portions, and means extending through the hubs of said wheels and said thickened portions and engaging said axle for detachably securing the sleeves and wheels to the axle and for fixing the wheels to the sleeves.

2. In combination, an axle having annular grooves formed therein, sleeves having closed outer ends rotatably mounted on the opposite ends of the axle, wheels mounted on said sleeves, and keys extending through the hubs of said wheels and said sleeves and engaging in said grooves for locking the wheels to the sleeves for rotation therewith and for securing the sleeves against longitudinal displacement upon the axle.

THOMAS LITTLEFIELD.