A. S. GUSTAFSON.

CAR WHEEL.

APPLICATION FILED FEB. 15, 1908.

898,463. Patented Sept. 15, 1908.

Fig. 1.

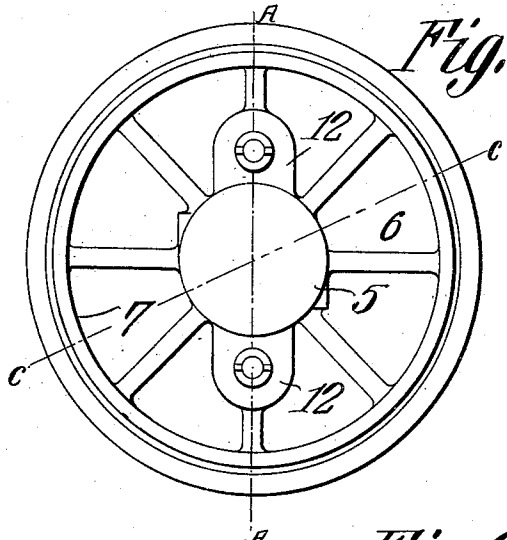


Fig. 2.

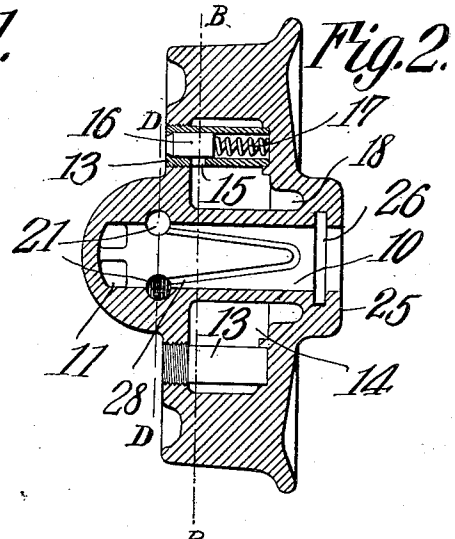
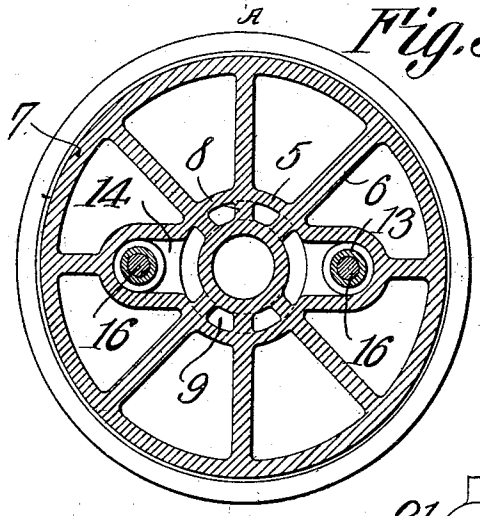


Fig. 3.



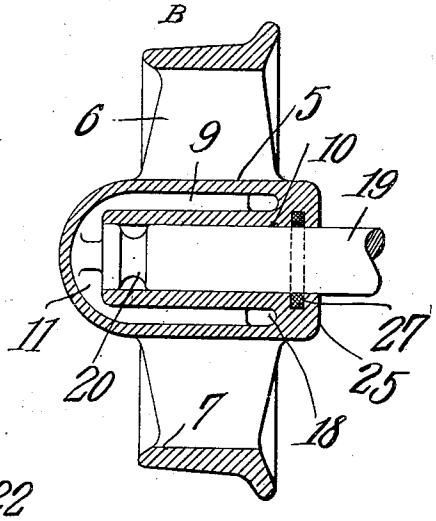


Fig. 4.

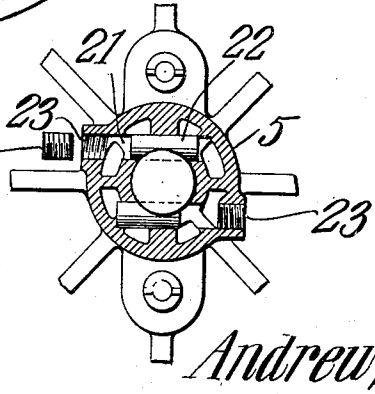


Fig. 5.

Witnesses

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UNITED STATES PATENT OFFICE.

ANDREW SIGFRID GUSTAFSON, OF CHATTANOOGA, TENNESSEE.

CAR-WHEEL.

No. 898,463. Specification of Letters Patent. Patented Sept. 15, 1908.

Application filed February 15, 1908. Serial No. 416,089.

To all whom it may concern:

Be it known that I, ANDREW SIGFRID GUSTAFSON, a citizen of the United States, residing at Chattanooga, in the county of Hamilton and State of Tennessee, have invented a new and useful Car-Wheel, of which the following is a specification.

This invention relates to car wheels of that general class shown and described in United States Letters Patent issued to me on the 7th day of May, 1907 under No. 853082.

The object of the invention is to improve and simplify the construction of the wheel and to render the same more efficient in operation by the provision of diverging oil ducts which communicate with the oil receiving reservoir and through which lubricant is automatically fed to the axle.

A further object of the invention is to provide improved means for locking the axle in position on the hub of the wheel, said locking means comprising a plurality of hardened steel pins slidably mounted in the hub of the wheel and engaging a groove in the adjacent end of the axle whereby friction between the parts is reduced to a minimum.

A still further object of the invention is generally to improve this class of devices so as to increase their utility, durability and efficiency.

Further objects and advantages will appear in the following description, it being understood that various changes in form, proportions and minor details of construction may be resorted to within the scope of the appended claims.

In the accompanying drawings forming a part of this specification: Figure 1 is a plan view of a car wheel constructed in accordance with my invention. Fig. 2 is a vertical sectional view taken on the line A—A of Fig. 1. Fig. 3 is a vertical sectional view taken on the line B—B of Fig. 2. Fig. 4 is a sectional view taken on the line C—C of Fig. 1. Fig. 5 is a detail sectional view taken on the line D—D of Fig. 2.

Similar numerals of reference indicate corresponding parts in all of the figures of the drawings.

The improved car wheel forming the subject matter of the present invention comprises a hub 5 having a plurality of spokes 6 radiating therefrom and preferably formed integral with the rim 7 of the wheel, as shown.

The hub 5 is provided with a circumferential row of transverse cores or ribs 8 defining intermediate oil passages 9 which surround the axle box 10 and communicate with an oil receiving reservoir 11, the latter being disposed at the front end of the wheel and communicating with the bore of the axle box, as shown.

The front wall of the reservoir 11 is bowed outwardly and provided with oppositely disposed extensions 12 in which are threaded tubular valve casings 13, the latter being extended transversely across the adjacent oil receiving compartments 14 and provided with an opening or orifice 15 through which oil or other lubricant may be introduced into the compartment 14 when it is desired to fill or replenish the chamber 11.

Slidably mounted in each tubular member 13 is a valve 16 which forms a closure for the adjacent opening 15 and is normally held in closed position by a coiled spring 17 interposed between the valve and the adjacent wall of the chamber 14.

Communicating with the chambers 14 is a circumferential groove 18 which also communicates with the oil passages 9 and through which oil is fed from the chamber 14 to the reservoir 11.

Arranged within the axle box is an axle 19 having its free end provided with an annular groove 20 which registers with corresponding seating grooves or recesses 21 formed in the hub of the wheel for the reception of locking devices 22, the latter being loosely mounted in the seating grooves and preferably in the form of hardened steel pins. The seating grooves or recesses 21 intersect the adjacent ribs 8 and are of greater length than the pins 22 so as to permit free sliding movement of the pins within the grooves thereby to reduce friction between the parts.

One end of each seating groove opens through the adjacent side wall of the reservoir 11 and is provided with interior threads 23 which engage corresponding threads on suitable plugs 24, which latter form closures for the seating grooves 21 and also receive the impact of pins 22 as the latter move back and forth in said grooves. Attention is here called to the fact that the pins 22 by engagement with the walls of the grooves 20 and 21 serve to lock the axle 19 in position on the hub of the wheel while at the same time permitting free rotation of one of said members with relation to the other. It will also be noted that the impact of one end of each pin is received by the plug, while the impact of

the opposite end of the pin is received by the adjacent interior wall of the hub 5. The rear end of the hub 5 is formed with a lateral enlargement 25 having an annular recess 26 formed therein which communicates with the bore of the hub and in which is seated a flexible washer 27 preferably formed of felt and which serves to prevent leakage of oil when the wheel is at rest.

The interior walls of the axle box 10 are formed with diverging oil ducts 28 which communicate with the adjacent seating grooves 21 and extend in the direction of the packing 27 so that as the wheel rotates the oil from the reservoir will be fed through one of the ducts 28 longitudinally of the wheel and thence back through the adjacent duct 28 and seating groove 21 to the reservoir thus thoroughly lubricating the axle and its associated parts. By making the plugs 24 removable the latter may be readily detached from the hub so as to permit the removal of the pins 22 when the latter become worn or otherwise injured from constant use or when it is desired to remove the wheel for any cause.

When the oil in the reservoir 11 needs replenishing a lateral pressure is exerted on the valve 16 which exposes the orifice 15 so that by introducing the spout of an oil can within the tubular member 13 the oil will enter the chamber 14 and thence flow through the annular groove 18 and the several passages 9 to the reservoir 11, a portion of the oil in the reservoir being fed through the seating grooves 21 and ducts 28 to the axle, in the manner before stated. It will here be noted that the seating grooves 21 intersect the oil passage 9 so that a portion of the oil will enter the grooves and thus thoroughly lubricate the pins and the grooved end of the axle so that friction between the parts is reduced to a minimum.

From the foregoing description it is thought that the construction and operation of the device will be readily understood by those skilled in the art and further description thereof is deemed unnecessary.

Having thus described the invention what is claimed is:

1. The combination with an axle having an annular groove, of a wheel including a hub having a seating groove adapted to register with the annular groove, and a locking pin slidably mounted in said grooves.

2. The combination with an axle having an annular groove, of a wheel including a hub having seating grooves adapted to register with the annular groove, locking pins slidably mounted in said grooves, and removable plugs forming closures for one end of each seating groove.

3. The combination with an axle having an annular groove, of a wheel including a hub having a seating groove adapted to register with the annular groove, a locking pin slidably mounted in said grooves, and a removable closure for one end of the seating groove.

4. The combination with an axle having an annular groove, of a wheel including a hub having a seating groove opening through one side of the hub and adapted to register with the annular groove, a locking pin slidably mounted in said grooves, and a removable plug forming a closure for the open end of said seating groove.

5. The combination with an axle having an annular groove, of a wheel including a hub having a seating groove adapted to register with the annular groove, said seating groove opening through one side of the hub and having its interior walls threaded, a locking pin slidably mounted in said grooves, and a removable plug forming a closure for one end of the seating groove and provided with threads engaging the threaded walls of said seating groove.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

ANDREW SIGFRID GUSTAFSON.

Witnesses:
J. M. SLAUGHTER,
W. S. BALTON.