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DISK WHEEL

Filed July 14, 1922

Fig. 1

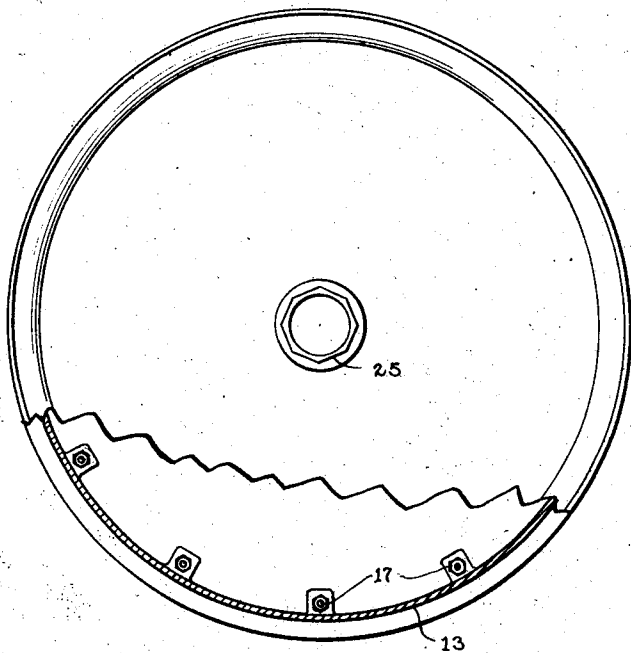


Fig. 2

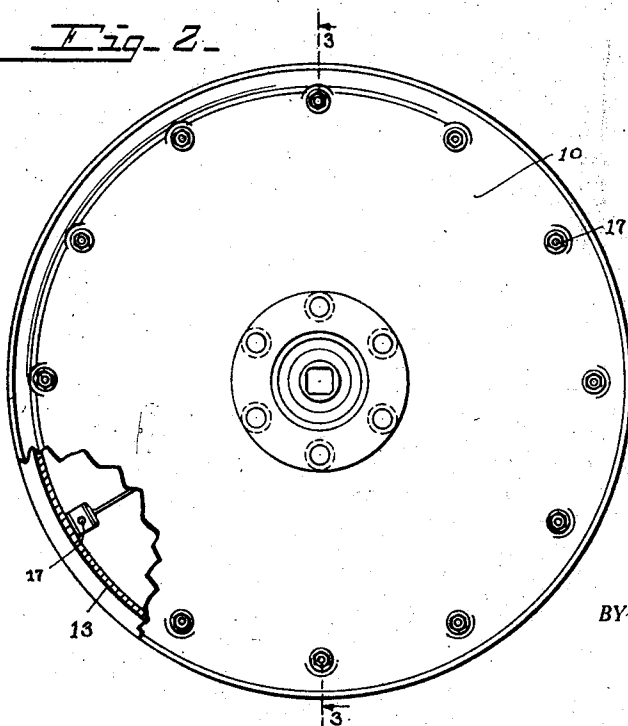
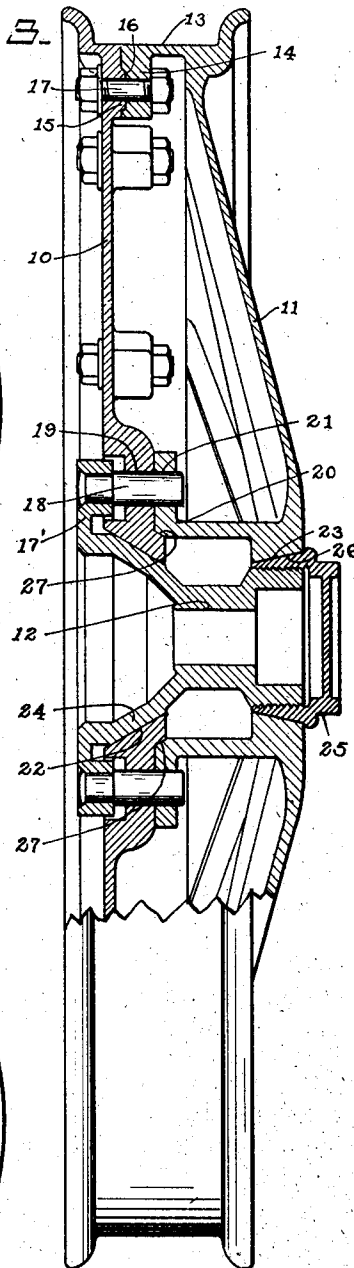


Fig. 3



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DISK WHEEL.

Application filed July 14, 1922. Serial No. 574,942.

This invention relates to disk wheels and more particularly to double disk wheels formed with a divided rim.

One of the features of this invention resides in the connection between the two disks in the neighborhood of the rim, which is effected by means of coupling members arranged on the disks, these coupling members being brought into engagement with one another by moving the disks toward each other.

A further feature of this invention resides in the fact that the two disks jointly are detachably secured to the hub by means of a wheel cap and that the disks are provided in the vicinity of the hub with perforations which register when the coupling members at the rim mutually engage one another, driving pins carried by the hub passing through these registering perforations to establish a driving connection between the hub and both disks.

An advantage of the structure forming the subject matter of this invention is that both disks can be detached from the hub for the purpose of changing a tire and that these disks, after the new tire has been put in place, can be put together and jointly mounted again on to the axle-tree, thus materially facilitating the changing of tires.

Another advantage of this structure is that a separate tire may be conveniently carried on a pair of the disks and placed on one of the axle-trees when the occasion demands.

This structure furthermore is distinguished from known double disk wheels with divided rims by its simplicity of construction which not only insures its durability but is conducive of rapid and convenient dismantling and assembling.

In addition to the above features, the invention consists in the novel combination, arrangement, and construction of parts more fully hereinafter described and illustrated in the accompanying specification and drawings.

In the drawings;

Figure 1 is a side elevation of a wheel, partly in section, constructed in accordance with this invention;

Fig. 2 is a similar view of the inner side of the wheel, also partly in section; and,

Fig. 3 is a vertical section taken on the plane indicated by line 3—3 in Fig. 2.

Referring now to the drawings wherein

like reference characters indicate like parts, it will be seen that the wheel comprises an inner disk 10 and an outer disk 11, mounted to rotate with a hub 12 in a manner to be more fully hereinafter described.

The periphery of each disk is shaped to form a rim 13 for the reception of the tire in the usual manner. Disposed around the periphery of the disk 11 and preferably cast integrally therewith is a plurality of lugs 14. The disk 10 has formed integrally therewith a corresponding number of bosses or enlargements 15, disposed adjacent its periphery. The lugs 14 and bosses 15 are each perforated and formed with grooves and shoulders on their adjacent faces for the purpose of providing a chamfered tongue and groove connection or joint 16 between the disks 10 and 11 at these points. Bolts 17 passing through the aligned perforations in the lugs 14 and bosses 15 tend to draw together and firmly lock the disks 10 and 11 relatively to one another, thus preventing parallel movement of one disk relative to one another when the wheel is subjected to forces such as result from ordinary driving and also particularly in making turns, striking curbs, etc.

The hub 12 is provided with a radial flange 17' from which radially project a plurality of driving or coupling pins 18. These pins are preferably shouldered and riveted to the flange 17' at spaced radial points. Adjacent the inner periphery of the disk 10 there is formed a plurality of radially disposed apertures 19, while the disk 11 is provided with a flanged extension 20, also provided with a plurality of laterally disposed apertures 21.

In assembling the wheel the apertures 19 and 21 formed in the disks 10 and 11 respectively, are caused to come into registration so as to receive the driving pins 18, whereby both disks are subjected to a driving or rotative force in the vicinity of the hub.

The inner periphery of each disk 10 is formed with an enlarged tapering surface 22 while the inner periphery of the disk 11 is formed with a corresponding tapered surface 23. The hub 12 is tapered adjacent its inner end as indicated at 24, thereby providing a surface which co-operates with the tapered surface 22 of the inner disk, while a hub cap 25, designed to lock the wheel to the hub is

formed with a tapered surface 26 which co-operates in a like manner with the tapered portion 23 of the outer disk.

The disks 10 and 11 are each formed with a short bevelled surface at their point of engagement, indicated by the reference character 27, whereby the assembling of the two disks is facilitated by causing them to come together concentrically with one another, thereby eliminating the possibility of a relative parallel movement of the disks.

The tire, (not shown), is mounted as usual on the divided rim formed jointly by the outer periphery of the two disks. The hub 12 is fixed to the axle in the usual manner and the wheel, composed mainly of the two disks, 10 and 11, is held in place on the hub by means of the hub cap 25. To remove the wheel it is only necessary, therefore, to remove the hub cap 25. Should it be desired then to change a tire, the disks 10 and 11 are disassembled by removing the nuts from the bolts 17. With the disk 10 disassembled from the disk 11, the tire may be freely removed from its seat.

Obviously after a new tire has been put in place and the disk again clamped together at their peripheries by means of the bolts 17, the two disks may then be jointly pushed on to the hub, the apertures 19 and 21 adjacent the hub being in alignment for the reception of the driving pins 18. As mentioned hereinbefore, the wheel may then be locked in place upon the hub 12 by screwing into place the hub cap 25.

Obviously the co-operating bevelled surfaces 22 and 24 on the one hand, and 23 and 26 on the other hand, tend to center the wheel as a whole and to provide a firm and rigid connection between the wheel and the hub. Furthermore the assembling of the two disks is facilitated by reason of the co-operating bevelled surfaces at the point indicated in the drawings at 27.

This point of engagement of the disks 10 and 11 insures a concentric positioning of the disks to more securely hold the parts together when the parts are assembled.

It should be noted that the driving pins 18 are of sufficient length to project through the disk 10 and also through the flanged extension 20 of the disk 11, thereby driving both disks simultaneously and causing the rotative force to be effected in the vicinity of the hub. Attention is also directed to the

manner in which the disks 10 and 11 are clamped adjacent the periphery thereof. The chamfered groove and shoulder provided at the juncture of each lug and boss insures a close fit whereby the bolts 17 may clamp the disks so as to prevent a rubbing or friction of the disks caused by a relative movement between the same.

The wheel will preferably, although not necessarily, be formed of aluminum, which metal possesses a high degree of heat conductivity. Therefore the heat created by the tire from the friction at the tread thereof is radially conducted into the wheel and radiated, particularly since the tire is in direct contact with the wheel, owing to the elimination of a separate rim member. Furthermore a wheel constructed in accordance with this invention possesses unusual lightness for its strength, and its construction further provides that sufficient metal to insure proper strength is disposed at the places where the greatest pressure is exerted.

The wheel as mentioned hereinbefore may be easily detached, this operation requiring only a single wrench. In addition to this, the wheel possesses all the usual advantages of disk wheels with reference to appearance and ease in washing.

While the particular arrangement and construction described and illustrated herein has proven to be efficient in every respect it is not intended that this invention should be unnecessarily limited but reservation is made to make such changes in construction and arrangement of parts as may come within the purview of the accompanying claim.

Having thus described the invention what is claimed is:

In a disk wheel adapted to receive a pneumatic tire, a hub, a pair of disks detachably mounted on said hub, a plurality of radially disposed lugs formed on one of said disks, a corresponding number of radially disposed bosses formed on the other of said disks, said lugs and bosses being formed with chamfered grooves and shoulders, bolts co-operating with said lugs and bosses for coupling said disks together, said disks being journaled on said hub.

In testimony whereof, we affix our signatures.

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