

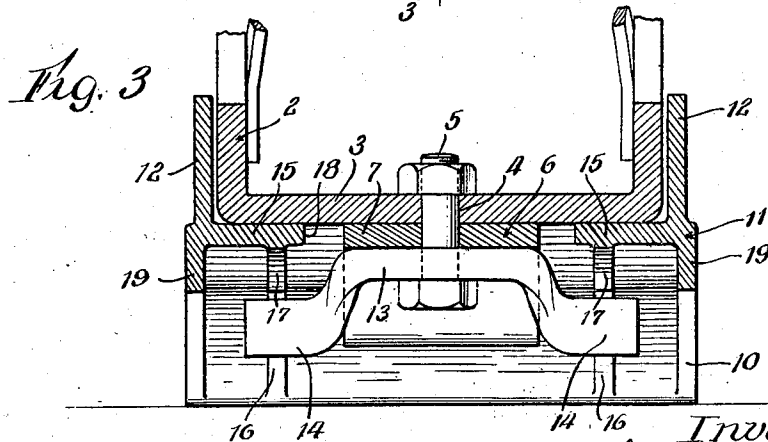
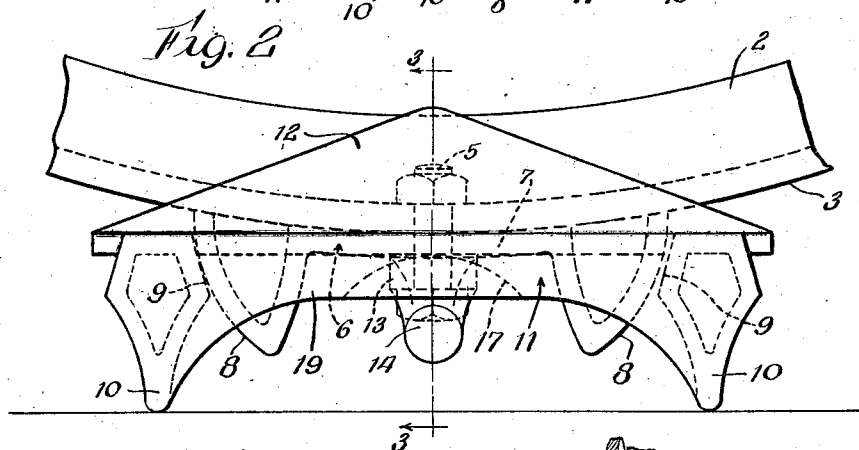
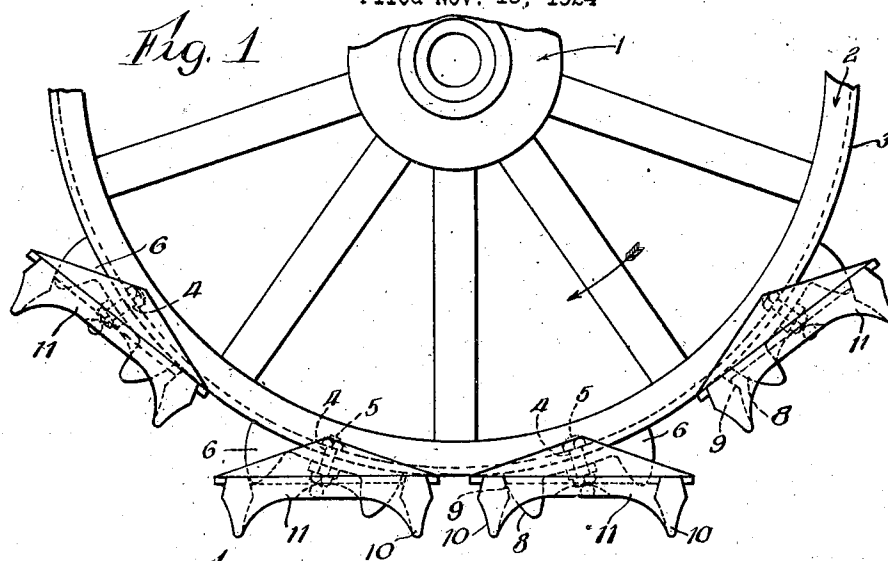
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TRACTION WHEEL

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UNITED STATES PATENT OFFICE.

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TRACTION WHEEL.

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This invention relates to a novel and improved traction wheel and has for one of its principal objects to provide means which may be readily applied to and detached from a wheel rim, and which, when applied, will form a ground gripping device and support for the rim.

A still further object is to provide a device comprising a driving tooth and a traction shoe, both of which may be readily attached to a rim of a wheel by the same means which will rigidly hold the tooth to the wheel and loosely and pivotally support the shoe so that it may have movement about its pivot and also may have bodily movement relative to the rim.

A still further object is to provide a device of the above character, which may be fastened to the rim by a single bolt or the like, and which will be held in alignment by cooperation between the rim, tooth and shoe without the necessity of providing further means.

A still further object is to provide a device of the above character in which the tooth has a driving surface cooperating with a corresponding driving surface upon the traction shoe and wherein there is full penetration of the tooth into the shoe before the shoe touches the ground, thereby insuring a completely effective driving engagement between the tooth and the shoe as soon as the shoe comes into engagement with the ground.

A still further object is to provide a device of the above character in which the number of parts is reduced to a minimum, which may be inexpensively manufactured, readily applied to existing wheels and will be efficient in operation.

In the drawings in which I have shown a selected embodiment of my invention,

Fig. 1 is an elevation of a portion of a wheel having my invention applied thereto.

Fig. 2 is a fragmentary view of the wheel of Fig. 1 showing one shoe with its driving tooth in another position with respect to the wheel.

Fig. 3 is a sectional view on the line 3—3 of Fig. 2.

Referring now to the drawings, the numeral 1 designates a wheel of any suitable construction having a rim 2 provided with a substantially flat ground engaging portion 3. This flat portion 3 is apertured at

suitable intervals as at 4, to receive bolts 5 or other suitable fastening means which is employed to secure to the rim, the driving tooth 6. Each driving tooth consists of a portion 7, lying in contact with the rim of the wheel and having at its ends, driving surfaces 8 to contact with corresponding surfaces 9 upon the ground engaging bars 10 of the traction shoe 11.

The traction shoe 11 is further provided with sides 12 loosely engaging the sides of the rim and acting as guides to keep the shoe in alignment upon the rim. The shoe is loosely pivoted to the rim by means of a pick-up bar 13 secured at its central point to the rim by means of the bolt 5 which also secures the tooth thereto, and having its ends 14 curved outwardly away from the rim of the wheel. The traction shoe is provided with track sections 15 upon which the rim of the wheel is adapted to rest when the shoe is flat upon the ground, and the ends 14 of the pick-up bar engage the shoe on the outer side of these track sections. I prefer to provide my traction shoe with longitudinal strengthening ribs 16 and I provide these ribs at their central portions with arcuate recesses 17 in which the ends 14 of the pick-up bar act when they contact with the shoe.

While I may form my shoe in any desired manner, I prefer to make it as an integral casting having an aperture 18 in the center thereof, to receive the tooth and the bolt, and the track sections 15 extend on either side of this central aperture. Parallel to the strengthening ribs 16 and at the edges of the shoe, I may also provide strengthening ribs 19 in the form of arches as plainly shown in the drawings.

In operation and assuming that the wheel in Fig. 1 is revolving in the direction of the arrow therein, it will be seen that the shoe at the extreme right of Fig. 1 is permitted to pivot about the pick-up bar and also to move bodily in relation to the wheel to a point wherein one end of each track section will come in contact with the rim of the wheel, whereby the tooth will have full driving penetration in respect to the traction shoe. As the wheel continues to revolve, the same shoe will come in contact with the ground and as soon as it does, it is obviously moved along the rim of the wheel until the surfaces 9 and 8 come into contact, and due to the

full penetration of the tooth in the shoe, it will be seen that a complete driving engagement is made at once. By this arrangement it is evident that the greatest possible use is made of the shoe, in that a full driving engagement is had between the tooth and the shoe as soon as the shoe touches the ground and this driving engagement will last until the shoe leaves the ground, at which time it will occupy some such position as that shown at the extreme left of Fig. 1. The full driving engagement will be had until the shoe reaches some such position as the second one from the right in Fig. 1 and then the surface 8 will gradually move along the surface 9 to some such position as the second one from the left in Fig. 1. It will be noted, however, that even in this last position there is a driving connection between the surfaces, thereby insuring that this driving connection will be maintained as long as the shoe is in contact with the ground. The pick-up bar will then lift the shoe from the ground, and as the wheel continues its rotation, the shoe will slide to a position such as shown at the extreme left of Fig. 1. It will be noticed that if the rotation of the wheel be reversed, the shoe in this position is so placed that full driving engagement between tooth and shoe will be obtained immediately upon the shoe touching the ground, because of this full penetration of the tooth into the shoe. Therefore, my invention gives as effective results with rotation of the wheel in one direction as in the other.

From the above, it will be evident that I have provided a device which may be readily applied to and detached from a wheel rim, to which it may be secured by a single bolt; which will be held in alignment by contact of the sides 12 with the rim, and also by the fact that the tooth always has both ends within the aperture 18. The number of parts is reduced to a minimum, thereby ma-

terially reducing the expense of manufacture and at the same time, a most efficient structure is achieved in which the maximum driving power is obtained. The entire device is symmetrical in shape and, when parts thereof become worn because of use of the device in one position on the wheel rim, the whole device can be reversed on the wheel rim to prolong its use.

I am aware that changes in the form, construction and arrangement of parts may be made without departing from the spirit and without sacrificing the advantages of the invention and I reserve the right to make all such changes as fairly fall within the scope of the following claims.

I claim:

1. The combination of a rim, a traction shoe having a central aperture, track sections on either side of said aperture, a pick-up bar loosely engaging said shoe on the outer side of said track sections and means passing through said aperture for securing said pick-up bar to said rim.

2. The combination of a rim, a traction shoe having a central aperture therein, track sections on either side of said aperture, a pick-up bar loosely engaging the outer side of said track sections, a driving tooth on said rim and received within said aperture, and a common means securing said pick-up bar and said tooth to said rim.

3. The combination of a rim, a driving tooth, a traction shoe cooperating with said driving tooth and having a central aperture, within which said tooth is received, a pick-up bar, a common means for securing said pick-up bar and said tooth to said rim, the ends of said pick-up bar extending on the outer side of said shoe, and the outer side of said shoe being provided with arcuate recesses to receive the ends of said bar.

LOUIS E. SLAUSON.