April 10, 1928.

1,666,037

W. E. WINE ET AL

TRACTION WHEEL

Filed April 8, 1925

Fig. 1

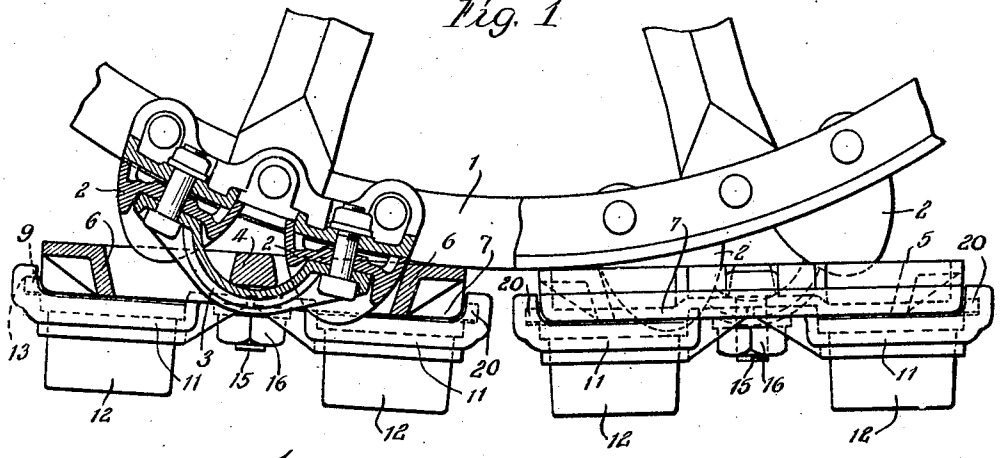


Fig. 2

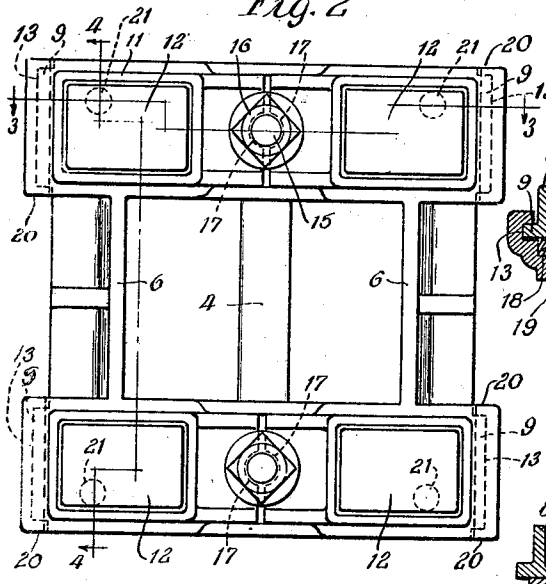


Fig. 3

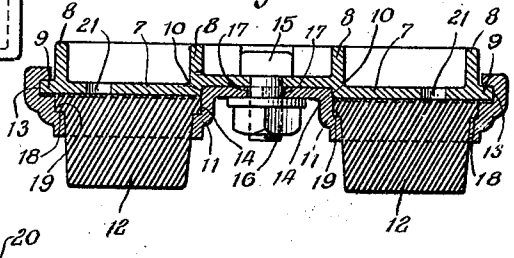


Fig. 4

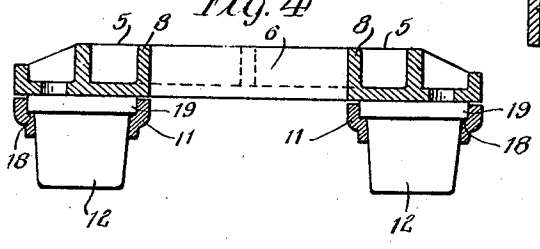
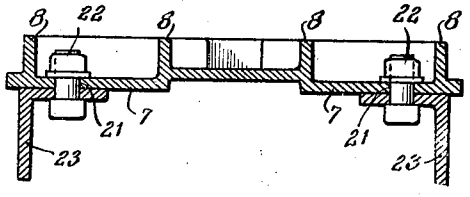


Fig. 5



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UNITED STATES PATENT OFFICE.

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TRACTION WHEEL.

Application filed April 8, 1925. Serial No. 21,729.

This invention relates to a novel and improved traction wheel particularly of the type in which a plurality of shoes are loosely mounted on the periphery of a rim, which rim coacts with the shoes during the rotation of the wheel, the shoes forming a track upon which the wheel is supported. The shoes employed with this type of wheel are usually provided with ground engaging bars to provide proper traction and when the wheel is to be run over a smooth surface or over a surface where the ground engaging bars are not necessary, it has been customary to remove the entire shoe and also any teeth, or the like, which may have been provided on the rim to co-operate with the shoes.

It is one of the principal objects of our invention to provide a shoe which may be provided with ground engaging bars, together with means for readily and quickly replacing such bars with pads so that the wheel may then be run over a smooth pavement or any other surface whereon it is not desirable to use the bars.

It is a further object of our invention to provide a shoe of the above character which may be readily applied to wheels normally employing a usual type of shoe and without involving any change other than that made in the shoe itself.

A still further object of our invention is to provide a shoe provided with holders for the pads which may be readily attached to and detached from the shoe, and which will efficiently prevent lateral movement of the pad and take all lateral strains.

Another object of our invention is to provide means for securing pads to a traction shoe in such a manner as to avoid the necessity of complicated devices which may be easily lost or broken, and which means shall be rugged in character and shall effectually hold the pads against displacement.

Referring to the drawings in which we have shown a selected embodiment of our invention:

Fig. 1 is a view partly in section and partly in elevation of a portion of a wheel having our invention embodied therein.

Fig. 2 is an outer plan view of one of the shoes shown in Fig. 1.

Fig. 3 is a section on the line 3—3 of Fig. 2.

Fig. 4 is a section on the line 4—4 of Fig. 2.

Fig. 5 is a section corresponding to Fig. 3, but showing the pads replaced by ground engaging bars.

In the drawings the numeral 1 designates the rim of a wheel, which may be of any suitable construction, such as we have shown in our co-pending application Serial No. 21,730 filed April 8, 1925. This type of wheel comprises a plurality of teeth 2 secured to the rim and joined by a holder 3 engaging a transverse bar 4 upon a traction shoe. By this means the shoe is loosely mounted upon the rim of the wheel. The shoe forming the subject matter of our invention has suitable track sections 5 upon which the rim of the wheel may roll and transverse tooth members 6 for engagement with the teeth 2 upon the rim. The shoe is preferably cast in one piece and in the form of two plates 7 having upstanding ribs 8 which form the track sections. The two plates are joined by the transverse bar 4 and the tooth members 6.

As best shown in Figs. 1 and 3, each plate 7 is provided at its ends with flanges 9 and is provided at its central portion with shoulders 10 which may be conveniently formed by depressing the plate at this point. The flanges 9 and the shoulders 10 form convenient means for placing the holders 11 for the pads 12. Each holder is provided with a socket 13 adapted to receive the flange 9 and when the flange is placed in the socket, the shoulder 14 on the opposite end of the holder comes in contact with the shoulder 10 on the shoe. A bolt, or the like 15, passes through the plate 7 and the nut 16 on the bolt serves to secure the holder against removal, the ends of the holder being suitably recessed at 17 to receive the bolt.

It will be seen that in this embodiment we provide four pads, two on each of the two plates 7, and by the construction just described we make it possible to secure two holders against removal from the shoe by means of one bolt. Each holder is provided with internal shoulders 18 to receive flanges 19 upon the pads 12. Each pad is inserted from the inner side of the holder and when the holder in turn is secured to the shoe, it will be seen that the inner side of the pad

rests against the bottom of the plate 7, so that it is in position to take its full share of the load transmitted through the shoe. When the pads are placed in the holders and the holders secured in position, as best shown in Figs. 1 and 3, there is no lateral strain placed upon the bolt, all such strain being taken by the co-operating parts exemplified by the flanges 9 and the sockets 13 and the shoulders 10 and 14. These co-operating parts effectually prevent lateral movement in any direction, it being noted from Figs. 1 and 2 that the sockets 13 are provided with sides 20 to prevent movement transversely of the plate as well as longitudinally thereof.

In Fig. 5 we have shown how the shoe may be employed with ground engaging bars instead of pads. The plates 7 are provided with apertures 21 of a size to receive bolts 22 by means of which transverse ground engaging bars 23 may be secured to the shoe. When these bars are to be used in place of the pads, all that is necessary is to remove the bolts 15, when the holders 11 may be taken off and the bars 23 bolted in place.

From the above it will be apparent that we have provided a novel and improved shoe which may be employed with a wheel of the type illustrated, in place of the shoes normally used therewith, thereby avoiding any necessity for change in the structure of the wheel rim or teeth. It will furthermore be apparent that our shoe furnishes a means for ready change from ground engaging bars to soft pads or vice versa, depending upon the type of service which is demanded of the shoe.

We are 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 we reserve the right to make all such changes as fairly fall within the scope of the following claims.

We claim:

1. A traction shoe comprising a plate having flanges at the ends thereof and shoulders adjacent the center thereof, a plurality of pad holders having sockets to receive said flanges and shoulders co-operating with the shoulders on said plate to prevent lateral movement, and means securing the holders to said plate.

2. A traction shoe comprising a plate having flanges at the ends thereof and shoulders adjacent the center thereof, pad holders having sockets to receive said flanges and having shoulders to co-operate with the shoulders on said plate, the ends of said holders lying adjacent each other near the center of said plate, and a bolt passing through said plate and securing said ends of said holders thereto.

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