

No. 781,573.

PATENTED JAN. 31, 1905.

M. J. TODD.
TRACTION WHEEL.
APPLICATION FILED MAY 9, 1904.

Fig. 1.

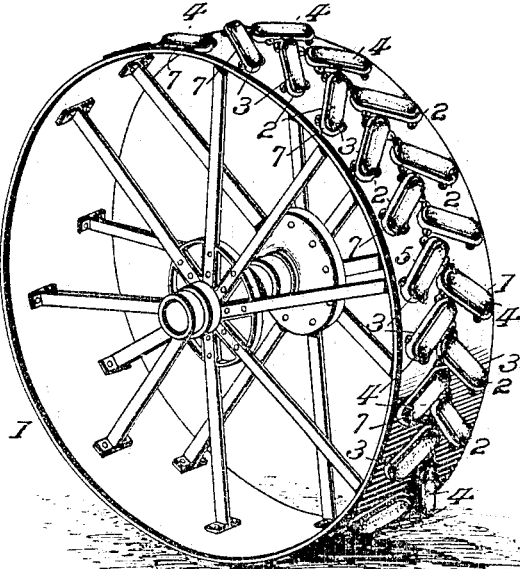
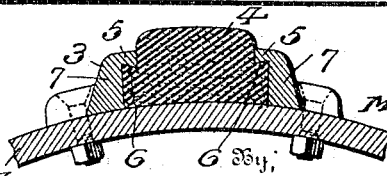
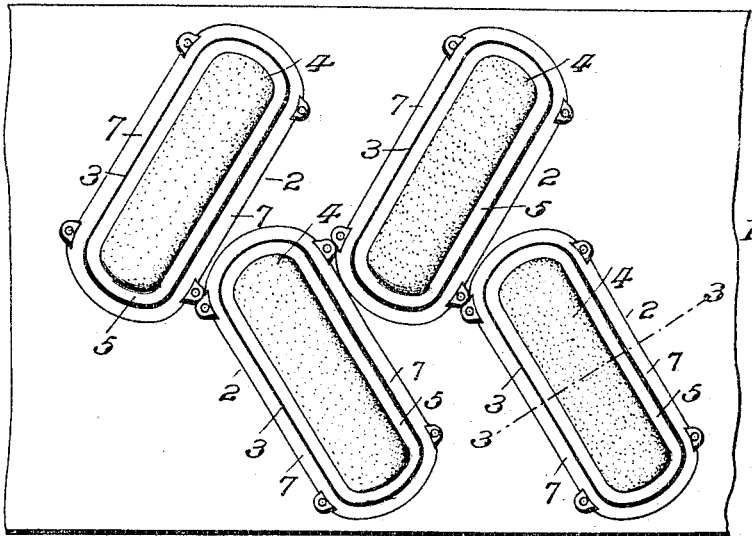


Fig. 2.



Inventor

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Witnesses

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Fig. 3.

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TRACTION-WHEEL.

SPECIFICATION forming part of Letters Patent No. 781,573, dated January 31, 1905.

Application filed May 9, 1904. Serial No. 207,085.

To all whom it may concern:

Be it known that I, MARQUIS J. TODD, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful
 5 Improvements in Traction-Wheels; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

10 It is well known that yielding lugs on traction-wheels will not in themselves allow of securing the necessary bite or traction and that lugs ordinarily employed for securing such traction cut and injure road-beds.

15 The primary object of my invention is to obtain in a single lug all the advantages of both yielding and non-yielding lugs without the objections or disadvantages of either considered separately, so that under certain conditions the yielding capacity of the lug will prevent undue cutting or breaking by the
 20 non-yielding or biting member thereof, with the result that the latter will not be brought fully into play until a portion of the weight
 25 has been taken up by the yielding member, and thereby present a broadened frictional face to the road-bed.

It is also a well-known fact that biting-lugs must be sufficiently spaced apart to allow of
 30 contact with undisturbed and unpenetrated portions of the road-bed between the lugs to prevent the wheels from slipping, especially in soft, sandy, and muddy roads. On hard roads this necessary spacing of the lugs usually results in jarring or bumping of the
 35 wheels in stepping or bridging over from one lug to another.

To obviate these objections, my invention contemplates the provision of a continuous
 40 tread at the center of the wheel-rim, while at the same time the lugs are sufficiently spaced apart to secure contact with the necessary amount of road material to insure the bite of the wheel, and yet avoid tearing loose the material
 45 between the contacts of the lugs.

The invention will be hereinafter fully set forth, and particularly pointed out in the claims.

In the accompanying drawings, Figure 1 is

a view in perspective of a traction-wheel 50 equipped with my improved lugs. Fig. 2 is a face view of a portion of the wheel-rim. Fig. 3 is a cross-sectional view on line 3 3, Fig. 2.

Referring to the drawings, 1 designates a 55 traction-wheel, and 2 the lugs secured to the rim thereof. Briefly stated, each lug comprehends a road-engaging base member 3, bolted directly to the wheel-rim, and a central road-engaging yielding member 4, the former 60 being of metal and the latter preferably of rubber. The several lugs are arranged obliquely on the wheel-rim with their ends overlapping each other and also the center of the rim. In this way I am enabled to always se- 65 cure a practically continuous tread for the wheel, since at no time is the wheel without the support of two oppositely-disposed lugs. The metallic or base member of each lug is formed with a central longitudinal opening 70 to accommodate the protruding portion of the yielding member 4. The overhanging inner side walls 5 of this opening are parallel, so as to present straight faces to the parallel sides 75 of the yielding member, the latter being thereby not only sustained as against lateral displacement, but the friction consequent upon inward and outward movements is minimized. These overhanging inner side walls form stops, against which fit the angular faces of side 80 flanges 6 of the yielding members. By reason of these overhanging walls I am enabled to secure an increased bearing-face for the base member, and in the event of the yielding member being forced inwardly beyond the face- 85 plane of the base—as, for instance, upon contact with a stone—such side walls serve to bite, acting as the lug itself. The outer longitudinal sides 7 of the base member are tapered, while the side edges and ends of the yield- 90 ing member are preferably rounded.

In practice the weight is first thrown upon the yielding members, which will move inwardly within the planes of the outer faces of the base members, thereby allowing of an increased contact-surface of the latter engaging the road-bed, the extreme faces of the yielding members forming, in conjunction with the

faces of the base members, frictional contact with the road.

The advantages of my invention are apparent. It will be seen that by means thereof 5 of traction-engines may be safely propelled over macadam, asphalt, or brick roads without danger of injuring the road-bed, since the yielding members of the lugs in serving to 10 partially take up the weight lessen the bite of the metallic base members, and thereby minimize any possible damage to the face of the road-bed. The yielding members do not prevent the non-yielding base members from securing the necessary bite, but on hard road- 15 beds lessen the degree of penetration, while the broadened faces of the lugs insure the necessary friction between them and the face of the road. The weight being always on two opposite lugs, the machine will not be affected 20 by pounding or jarring.

I claim as my invention—

1. A traction-wheel lug comprising a non-yielding road-engaging base member having biting edges, and a second road-engaging member of yielding frictional material located between said biting edges and normally projected 25 beyond and designed to move inwardly within the plane of the face of said base member so as to present a broad frictional contact-surface when under maximum weight. 30

2. In combination with a traction-wheel having a solid rim, a series of lugs comprising a non-yielding road-engaging base member secured directly to said rim and having biting 35 edges, and a second member of yielding material bearing against said rim and normally

projected beyond and designed to move inwardly within the plane of the face of the base member.

3. In combination with a traction-wheel 40 having a solid rim, a series of lugs comprising a non-yielding road-engaging base member having a central longitudinal opening with overhanging walls, a second member of yielding frictional material bearing against said 45 rim and fitted within said opening and in rear of said overhanging side walls, said second member normally projecting beyond and designed to move inwardly within the plane of the face of the base member. 50

4. A traction-wheel having a solid rim, and a series of lugs obliquely positioned on said rim with their inner ends overlapping at the center of the rim, said lugs comprising each a road-engaging metallic base member secured 55 to said rim and having a longitudinal opening and overhanging side walls, and a second member of yielding frictional material bearing against said rim and fitted within said opening and having lateral extensions for engaging 60 said overhanging walls, said second member being designed to move inwardly within the plane of the face of the base member so as to present a broad flat frictional contact-surface when under maximum weight. 65

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

MARQUIS J. TODD.

Witnesses:

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H. S. CUNNINGHAM.