

W. L. HOWARD.
VEHICLE WHEEL.
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1,031,341.

Patented July 2, 1912.

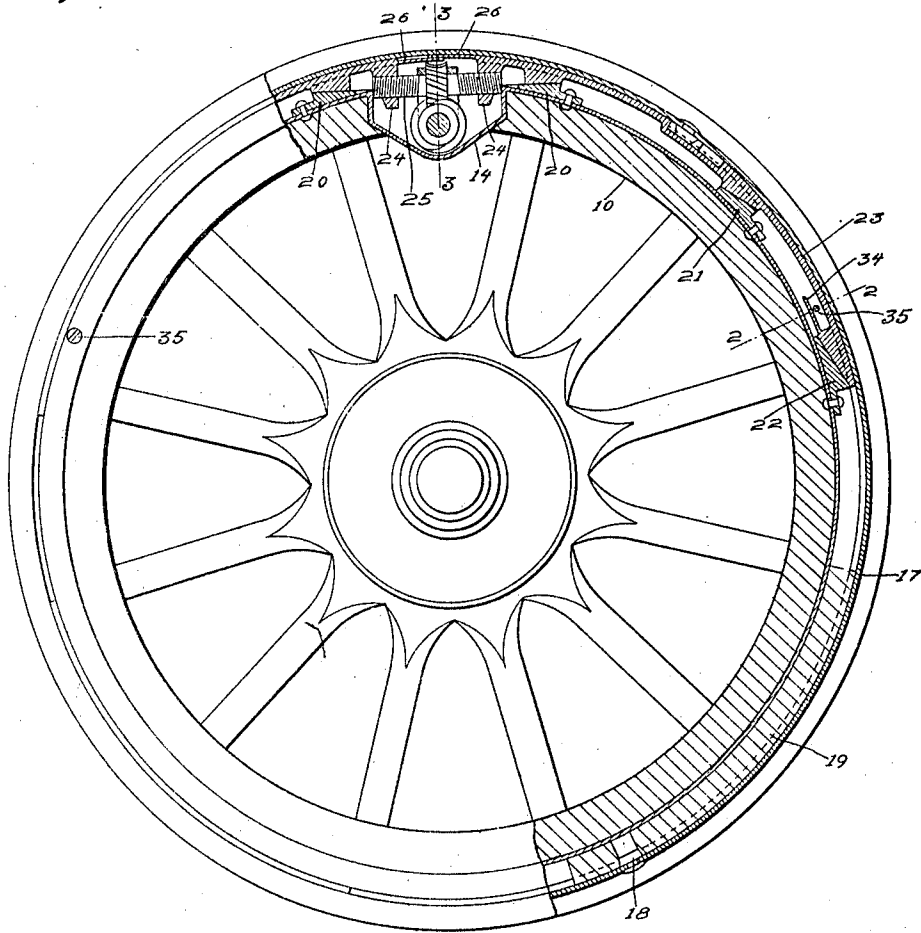


Fig. 1.

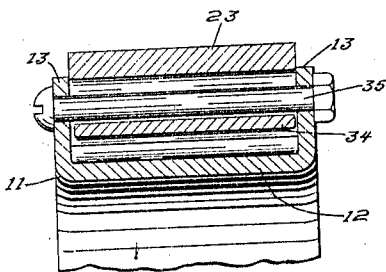


Fig. 2.

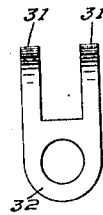


Fig. 4.

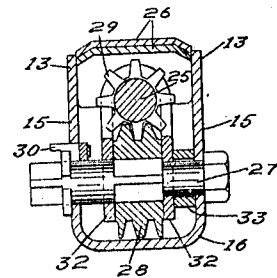


Fig. 3.

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UNITED STATES PATENT OFFICE.

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VEHICLE-WHEEL.

1,031,341.

Specification of Letters Patent.

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Application filed May 8, 1911. Serial No. 625,923.

To all whom it may concern:

Be it known that I, WILLIAM L. HOWARD, a citizen of the United States, and a resident of Trenton, State of New Jersey, have
5 invented certain new and useful Improvements in Vehicle-Wheels, of which the following is a full, clear, and exact description.

This invention relates to certain improvements in means for securing in place
10 demountable rims in vehicle wheels, and more particularly to the construction illustrated and claimed in my previous Patents, No. 929,437 granted July 27, 1909 and No. 932,862 granted August 31, 1909. In the
15 type of construction shown in my previous patents, two gripping members are moved circumferentially toward or from each other, and radially to effect the gripping or releasing of the rim by the turning of a
20 single bolt or shaft.

My present invention involves certain improvements in the means for retaining these gripping members in place and in the casing for sealing and protecting the operating
25 mechanism.

Reference is to be had to the accompanying drawings, which form a part of this specification, and in which similar reference
30 characters indicate corresponding parts in the different views.

Figure 1 is a side elevation of a vehicle wheel constructed in accordance with my invention, a part of the wheel being shown in
35 section; Fig. 2 is a transverse section on the line 2—2 of Fig. 1 on a larger scale and showing only the gripping member in the channel in which it runs; Fig. 3 is a transverse section on the line 3—3 of Fig. 1, but on a larger scale and the rim being removed;
40 Fig. 4 is a side view of a link used for holding the worm and worm wheel in proper relative positions.

In my improved wheel, as illustrated, I employ a felly 10 of wood or other suitable
45 material, and secured to the periphery of this felly is a fixed rim in the form of a metal channel 11 having a web 12 and outwardly extending parallel side flanges 13. At one point in the periphery, the wooden
50 felly is provided with a recess, and within this recess is disposed a casing 14. The casing has side walls 15 integral with and lying in the same plane with the side flanges 13 of the channel, and the end and bottom
55 walls 16 are formed integral with the web 12 of the channel. Preferably the casing

is formed separately and welded to the channel after a portion of the web of the latter has been cut away. By constructing the casing in this manner, the flanges of the channel are not in any way weakened and extend continuously across the structure, and the structure is reinforced rather than
60 weakened by the presence of the casing.

Any well-known type of rim 17 may be
65 used in connection with the felly and engages with a rigid portion of the wheel along approximately one-half of the latter. The rim may have studs 18 extending into
70 recesses in filling blocks 19 so as to prevent this half of the rim from moving laterally. Secured to the web of the channel along the remaining half of the latter are a plurality of blocks 20, 21 and 22, presenting
75 cam surfaces of varying angles. Between the webs and resting upon these blocks are two gripping members 23, each presenting
80 an outer curved surface for gripping engagement with the inner surface of the rim and each having an inwardly extending projection integral therewith and engaging
85 with the cam surfaces of the separate blocks above referred to. The gripping members also have lugs 24 preferably integral therewith, adjacent to their meeting ends and
90 through which a spreading bolt 25 extends. The opposite ends of this bolt are oppositely threaded, so that on rotating it in one direction, the members are drawn toward each other, and on rotating it in the opposite
95 direction, forces them apart. The members preferably have extensions 26 which overlap and which prevent dust or dirt entering the casing 14 when the rim is removed. Extending
100 transversely through the casing is a screw bolt 27 carrying a worm 28 in engagement with a worm wheel 29 on the screw bolt 25. The screw bolt 27 is normally held against
105 rotation by a catch 30 operating substantially as set forth in my previous Patent No. 929,437. For holding the two screw bolts and the worm and worm wheel in proper relative positions, I employ a link shown particularly in Figs. 3 and 4. This link
110 has two spaced curved bearing portions 31 for engagement with the screw bolt 25 upon opposite sides of the worm wheel and preventing longitudinal movement of the latter, and has two downwardly extending bearing portions 32 receiving the screw bolt 27 and preventing longitudinal movement of the worm 28. This link member prevents the

screw bolt 25 from being forced outwardly by the action of the worm. A collar 33 is disposed between one of the bearing portions 32 and the side wall of the casing for resisting the end thrust on the worm during the movement of the gripping members into positions.

One important feature of my invention is the means employed for preventing the outer ends of the gripping members from swinging outwardly. As illustrated, each gripping member has a tongue 34 substantially parallel to the body portion of the gripping member and spaced a short distance therefrom, and a small bolt 35 extends through the two side flanges of the channel and through the space between the tongue 34 and the body portion of the gripping member. With this bolt in place, the outer end of the gripping member may move circumferentially and may move radially to a limited extent, but upon the removal of the rim, the outer end of the gripping member cannot swing outwardly. Upon removing the two bolts 35 of the two gripping mem-

bers and removing the screw bolt 27, all of the operating mechanism may be radially detached for purposes of repair, adjustment or replacement.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

A wheel having a fixed rim presenting flanges extending outward substantially radially, a demountable rim and a member between said flanges movable to lock the demountable rim to the fixed rim and a tongue carried by said member and extending substantially circumferentially and a transversely extending bolt carried by said flanges and disposed between said member and said tongue to retain said member in position.

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

WILLIAM L. HOWARD.

Witnesses:

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