

976,440.

Patented Nov. 22, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

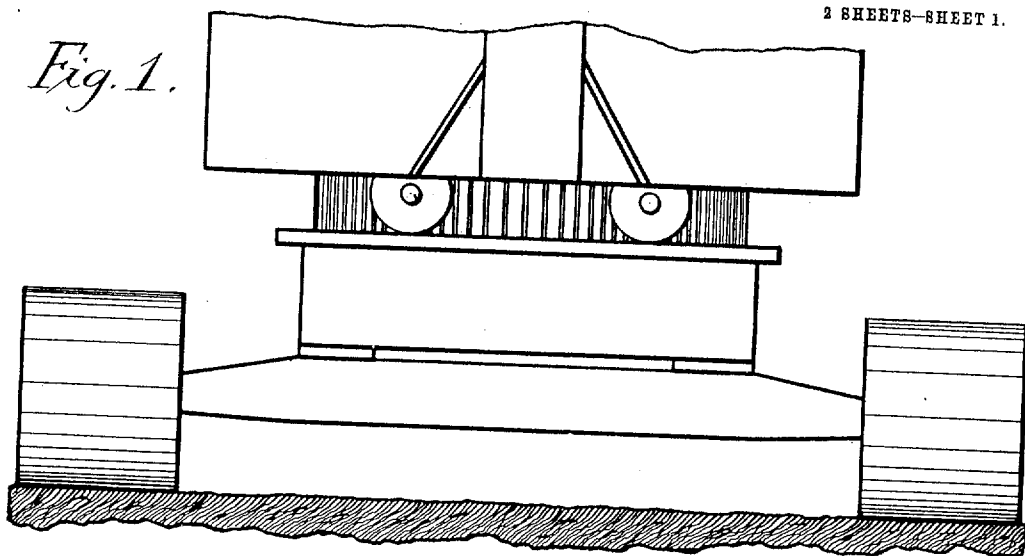
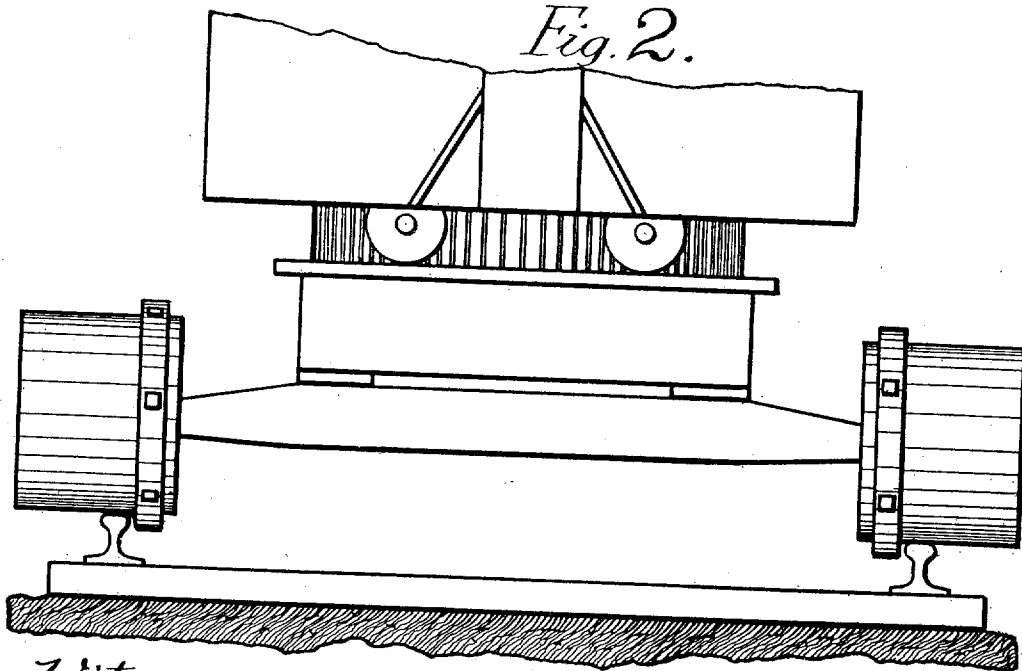


Fig. 2.



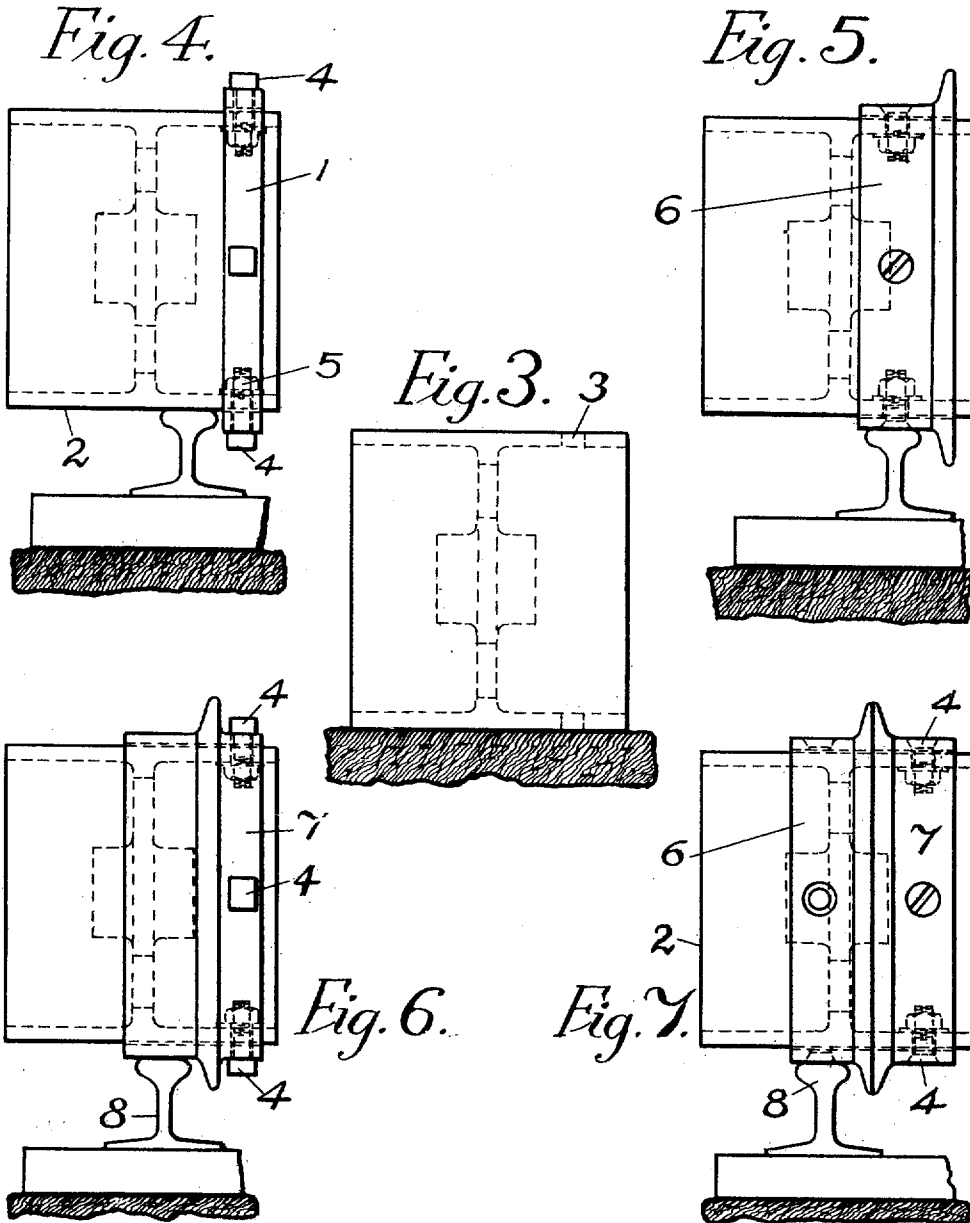
Witnesses:

*Mary B. Morris.
Edith E. Kelly.*

*Inventor:
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 2 SHEETS—SHEET 2.



Witnesses.
 Edith C. Kelly
 Mary B. Morris

Inventor:
 William F. Cush
 per Hans Kowsky
 Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM F. CUSH, OF WASHINGTON, DISTRICT OF COLUMBIA.

REMOVABLE FLANGE.

976,440.

Specification of Letters Patent.

Patented Nov. 22, 1910.

Application filed July 14, 1910. Serial No. 572,021.

To all whom it may concern:

Be it known that I, WILLIAM F. CUSH, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Removable Flanges, of which the following is a specification.

This invention relates to the locomotion of machinery on wheels in case the weight of such machinery be so great that a wheel of broad tread may carry it safely over hard ground but would sink and stick fast in boggy ground. Experience has proven that neither an increase of tread of wheel nor supporting latter by planks can keep heavy machinery afloat on boggy ground; because the increase of the tread merely renders the wheel so much more liable to get choked, and wheels supported by planks will, when started to revolve, not go forward, but merely stand on the spot, kick the planks out rearward and cause the machine to sink still deeper, with much trouble, delay and expense as consequence. Hence it appears that the proper way of supporting such machinery will be to use wheels of broad tread when moving the machine over hard ground, but flange wheels supported by rails and ties when working the machine, or moving it over boggy ground.

With this in view the object of my invention has been to produce, if possible, a virtually simple means which would allow to alternately and quickly change an ordinary wheel into a flange wheel and back, to use the same wheel in both capacities, at will.

A further object of my invention has been to so construct above mentioned means that they will serve to protect the wheel from wearing a groove, as consequence of its running on rails.

A final object of my invention has been to protect the means used to fasten above means to the wheel from coming in contact with the rail.

A final object of my invention has been to so construct above means that after one side has been badly worn the means may be turned around and the opposite half used for the same purpose.

A few mechanical illustrations of my invention by which, among others, I may attain these objects, are shown in the drawings, in which—

Figure 1 is a front elevation of a machine moving over hard ground on wheels of

broad tread; Fig. 2 a front elevation of the same machine working, or moving, over boggy ground, with its wheels provided with removable flanges and supported by rails and ties; Fig. 3 a front elevation of the wheel as shown in Fig. 1; Fig. 4 a front elevation of the same wheel with my removable flange temporarily attached thereto; Fig. 5 a like view showing the removable flange provided with means to protect the wheel from wearing a groove; Fig. 6 a like view showing the removable flange, in addition, provided with means to keep the fastening means from coming in contact with the rail; Fig. 7 a like view showing both sides of the removable flange provided with means to protect the wheel from wearing a groove.

Similar letters refer to similar parts throughout the several views.

The removable flange 1 loosely fits over the wheel 2 and is temporarily secured to the latter by means of openings 3, and suitable fastening means, like rivets or stud-bolts or, as shown in the drawings, bolts 4 and nuts 5.

The flange shown in Fig. 5 is, in addition, provided with a laterally projecting cylindrical tire portion 6, the object of which is to protect the wheel proper from the wear to which it would be subjected while running on rails, which wear would eventually result in the wheel wearing a groove.

The flange shown in Fig. 6 is, in addition, provided with a laterally projecting cylindrical portion 7, the object of which is to keep the fastening means 4 out of the path of the rail 8 and thus protect them from probable injury through coming in contact with this rail.

On the flange shown in Fig. 7, this last mentioned means 7 has been modified to an extent where it is possible to either use it to protect the fastening means 4 from coming in contact with the rail 8, or to protect the wheel 2 from wearing a groove. Thus either one of the two cylindrical tire extensions 6 and 7 may be used for both purposes, protection of the wheel and protection of the fastening means, by merely reversing their relative position.

The operation is as follows: When reaching boggy ground, or when using the machine in working, a short track slightly longer than the machine itself is laid, made up of ties and short rails, loosely and detachably connected with each other. Upon

this track the machine is made to go and then the track taken off in rear and added again in front, according to the speed with which the machine may proceed.

- 5 When the work is finished and the machine has to be moved, especially over hard ground and considerable distance, the flanges are removed and the wheels made to travel as ordinarily, with high speed and protection of the pavement from injury through the protruding flanges being assured.

10 As it is apparent that the invention lends itself to various embodiments I intend that all matter contained in the foregoing description and drawings shall be understood as merely illustrative of a few of the various possible mechanical illustrations of my invention, and not in a limiting sense.

I claim:

- 20 1. The combination with a broad treaded truckwheel of the class described of a readily detachable rim, said rim consisting of a metal band of narrower tread than the tread of the wheel, and of slightly larger diameter, said rim capable of being removably fastened to the tread surface of said wheel so as to readily change latter from an ordinary broad tread wheel into a flanged wheel and back, and means for removably
25 securing said rim to said wheel.

- 30 2. The combination with a broad treaded truckwheel of the class described of a readily detachable rim, said rim consisting of a metal band of narrower tread than the tread of the wheel, and of slightly larger diameter, said rim capable of being removably fastened to the tread surface of said wheel so as to readily change latter from an ordinary broad tread wheel into a flanged wheel and
35 back, openings extending radially in said rim, openings extending radially in said wheel, the axis of said openings in said rim coinciding with the axis of said openings in said wheel, and bolts adapted to be received in said
40 openings of said rim and said wheel, for removably securing said rim to said wheel.

3. The combination with a broad treaded truckwheel of the class described of a readily detachable flange, said flange consisting of
45 a metal band of narrower tread than the tread of the wheel, and of slightly larger diameter, said flange capable of being removably fastened to the tread surface of said wheel so as to readily change latter from an ordinary broad tread wheel into a flanged wheel and back, and a cylindrical tire portion laterally extending from said flange to protect said wheel from having a groove worn in it.

- 60 4. The combination with a wheel of broad tread of a flange, the inside diameter of said flange slightly in excess of the outside di-

ameter of the tread surface of said wheel, said flange capable of being removably secured to the tread surface of said wheel, a cylindrical tire portion laterally extending from said flange to protect said wheel from having a groove worn in it, openings extending radially in said tire portion, openings extending radially in said wheel, the axis of said openings in said tire portion coinciding with the axis of said openings in said wheel, bolts adapted to be received in said openings of said tire portion and said wheel, and nuts adapted to engage said bolts, for removably securing said flange to said wheel.

5. A wheel of broad tread, a tire thereon capable of being removably secured to the tread surface of said wheel, means to protect said tread surface from having a groove worn in it, auxiliary means for protecting said tread surface from having a groove worn in it, these last named means oppositely arranged to and allowing of alternate use with the first named means.

6. A wheel of broad tread, a flange thereon capable of being removably secured to the tread surface of said wheel, a cylindrical tire portion extending laterally from said flange adapted to protect said wheel from having a groove worn in it, a second cylindrical tire portion extending laterally from said flange and oppositely to the first named cylindrical portion and adapted to protect said wheel from having a groove worn in it, and means for removably securing said flange to said wheel.

7. A wheel of broad tread, a flange thereon capable of being removably secured to the tread surface of said wheel, means to removably secure said flange to said wheel, and a cylindrical portion extending laterally from said flange adapted to receive said fastening means so as to keep them from coming in contact with the rail.

8. A wheel of broad tread, a flange thereon capable of being removably secured to the tread surface of said wheel, means to removably secure said flange to said wheel, a cylindrical portion extending laterally from said flange adapted to receive said fastening means so as to keep them from coming in contact with the rail, and a cylindrical tire portion extending laterally from said flange adapted to protect said wheel from having a groove worn in it.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM F. CUSH.

Witnesses:

A. M. PARKINS,
U. B. MORRIS.