

No. 768,157.

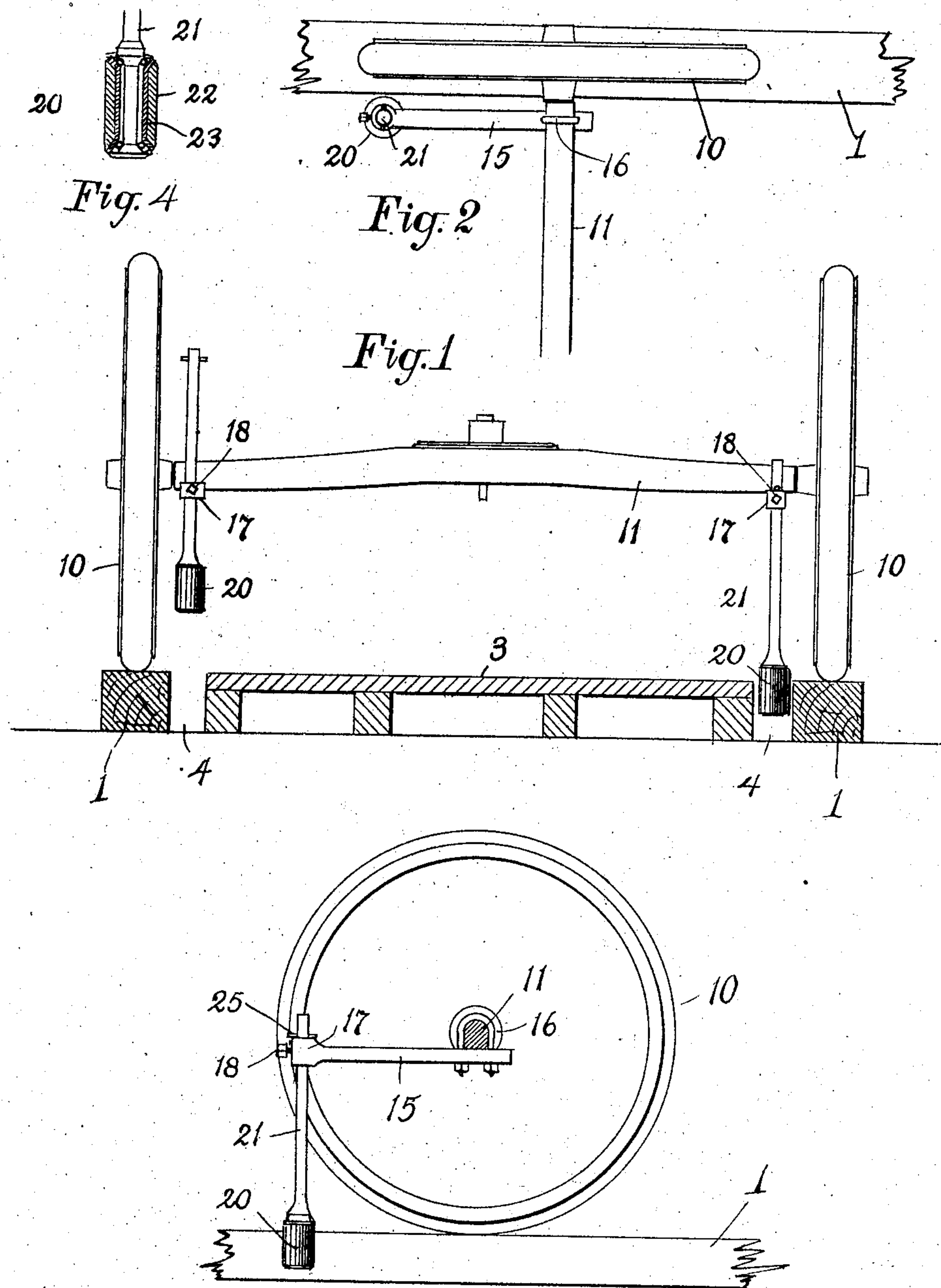
PATENTED AUG. 23, 1904.

H. L. STILLMAN.

WHEEL GUIDE.

APPLICATION FILED DEC. 18, 1903.

NO MODEL.



Witnesses;

E. H. Waite

H. L. Gendrich.

Fig. 3

Inventor,

Herbert L. Stillman;

By

A. B. Chapman,
His Attorney.

UNITED STATES PATENT OFFICE.

HERBERT L. STILLMAN, OF WEST ACTON, MASSACHUSETTS.

WHEEL-GUIDE.

SPECIFICATION forming part of Letters Patent No. 768,157, dated August 23, 1904.

Application filed December 18, 1903. Serial No. 185,725. (No model.)

To all whom it may concern:

Be it known that I, HERBERT L. STILLMAN, a citizen of the United States, and a resident of West Acton, in the county of Middlesex, State of Massachusetts, have invented certain new and useful Improvements in Wheel-Guides, of which the following is a full, clear, and exact description.

The object of this invention is the construction of simple, inexpensive, and practical means whereby an automobile or a horse-drawn vehicle can be propelled upon steel plates or wooden beams without danger of its running off therefrom.

Referring to the drawings forming part of this specification, Figure 1 is a front view of the front wheels of a wagon having my invention applied thereto. Fig. 2 is a plan view showing one of such wheels having my device applied to it. Fig. 3 is a side sectional elevation of a front axle and wheel with my invention thereon, and Fig. 4 is a detail sectional view of one of the roll-guides constituting a part of my invention.

The reference-numeral 1 designates one of the steel plates or wooden beams upon which it is desired to run vehicles; but as my invention is especially designed for use in connection with wooden timbers or beams I show the latter only in the drawings.

10 10 are the two front wheels of a wagon, and 11 the axle, with central king-bolt customarily employed. Inasmuch as steel tires are very damaging to wooden timbers, soon splintering them and rendering them useless, I particularly design my invention for rubber-tired wheels indicated in the drawings.

Projecting forward from the axle 11 are the arms 15, suitably but rigidly connected thereto by the clips 16 and each having in its forward end a socket 17. These sockets are vertical, and in each is slidably held a rod 21, carrying at its lower extremity a roll 20. Set-screws 18, tapped through the sides of said sockets and abutting against said rods, permit the latter to be fastened down at such points as to present the rolls 20 to the side faces of the wooden timbers 1 or to be raised up and fastened clear of engagement therewith, as shown in Fig. 1. In said Fig. 1 the

right-hand wheel is shown with its guide-roll 20 engaging the track-rail or wooden timber 1, while the left-hand roll is shown as free thereof. As a matter of fact I design said rolls to be either both up and out of the way or to be both down and serving to guide the wheels 10 provided therewith. A pin 25 or other device prevents each guide-roll from dropping too low in case the set-screw should become loosened.

To keep the guide-rolls from hammering and splintering the wooden rail-timbers, as they are likely to do when made of metal, I prefer to rubber-cover them, as indicated in Fig. 4, where 22 designates the rubber cover or tire, and 23 the metal spool provided with ball-bearings at the lower end of the rod 21.

My purpose in locating the rods and guide-rolls at the extremity of a forwardly-projecting arm 15 is to better guide the wheels, inasmuch as the farther away from the king-bolt, and hence from the steering-wheel's tread, are the guide-rolls the more quickly do the latter swing into contact with the rail-timbers and keep the wheels from further lateral divergence.

In locating a timber track of the kind set forth upon a private right of way the timbers 1 are wholly above ground, and so present free lateral faces to the guide-rolls; but when such a line crosses a public road it is necessary to plank in the space between the timbers, as at 3, Fig. 1, and to leave as limited spaces as possible between such planking and the timbers 1 to keep from entrance therein the hoofs of horses and other animals. This necessitates that the guide-rolls shall be of a limited diameter as is consistent with strength and ease of rotation. I am therefore obliged to make each guide-roll rather long in comparison with its diameter, so that it may pass freely through the said space 4 between planking and timber and still give ample engagement with the lateral face of the latter.

The value of my guide-roll in comparison with a flange formed on the wheel itself is as follows: First, a flanged wheel running on a wooden rail soon splinters and wears down the edge of the latter until the wheel climbs off therefrom at the slightest provocation;

second, a flanged wheel running on a steel plate or a T-rail generates considerable friction between such flange and the lateral edge of the rail or plate: third, for a wagon to be
 5 run at will on an ordinary roadway or on rails flanges are out of the question, while with my device the guide-rolls constitute not only a perfect kind of flange, but one which can be immediately raised out of the way to
 10 permit the wagon to run on an ordinary roadway or be lowered to permit the wagon to run with safety on the track-rails. Further, to run a rubber-tired wheel upon a steel plate having an upwardly-projecting flange at one
 15 edge to keep the wheel in place is to invite destruction to the rubber tire by its frequent climbing up and over such flange. Similarly such plate-flange is impotent to keep the wagon in place thereon; but it must be con-
 20 stantly steered this way and the other to keep it on the plates.

To sum up, my invention enables rubber-tired wheels to be run upon track-rails with perfect security. Rubber-tired wheels per-
 25 mit of wooden timbers to be employed as track-rails. The vehicle equipped with my invention is instantly convertible from a track-running to a pavement-running conveyance, and vice versa. A teamster or farmer having
 30 his wagon equipped with my guide-rolls can have his horses drag a heavy load along the road leading to a main line of traffic provided with wooden track-rails, then having reached the latter and put the wheel-guides into en-
 35 gagement with the rails can have his horses trot off briskly with the load under which they could formerly scarcely make headway, thereby saving vastly in destruction to his team and wagon and in time to both himself
 40 and the outfit. The term "rolls" as applied to the guide-rolls is used to designate any form of wheel or similar rotating antifriction member.

What I claim as my invention, and for which
 45 I desire Letters Patent, is as follows, to wit:

1. The combination with track-rails and a vehicle running thereon, of guide-rolls having

vertical axes carried by the vehicle in close proximity to the lateral faces of said rails and at a substantial distance from the tread of the
 50 vehicle's steering-wheels, measured along the track-rails, substantially as described.

2. The combination with track-rails and a vehicle running thereon, of a pair of guide-rolls having vertical axes, and arms rigidly
 55 projecting in advance of the vehicle's steering-wheels and carrying said rolls in close juxtaposition to the lateral faces of said rails at a substantial distance in advance of said wheels' treads, substantially as described. 60

3. The combination with track-rails and a vehicle running thereon, of a pair of arms acting as a lever with respect to the vehicle's steering-wheels, and two guide-rolls having
 65 vertical axes carried by said arms in close juxtaposition to the lateral faces of said track-rails and at a substantial distance from the tread of the steering-wheels, said arms being constructed for the vertical adjustment of said rolls, substantially as described. 70

4. The combination with track-rails and a vehicle running thereon, said vehicle having centrally-swiveled front axle, of guide-rolls having vertical axes rigidly carried by said
 75 axle in close juxtaposition to the lateral faces of the track-rails and in front of said axle, substantially as described.

5. The combination with track-rails and a vehicle running thereon, of forwardly-projecting arms rigid with the axle of the front
 80 wheels of the vehicle, each said arm having a vertical socket at its front end, a rod slidable in each said socket, a roll carried at the lower end of each said rod, and means for locking said rods in said sockets, substantially as de- 85 scribed.

In testimony that I claim the foregoing invention I have hereunto set my hand this 14th day of December, 1903.

HERBERT L. STILLMAN.

Witnesses:

A. B. UPHAM,

W. L. GOODRICH.