

No. 626,296.

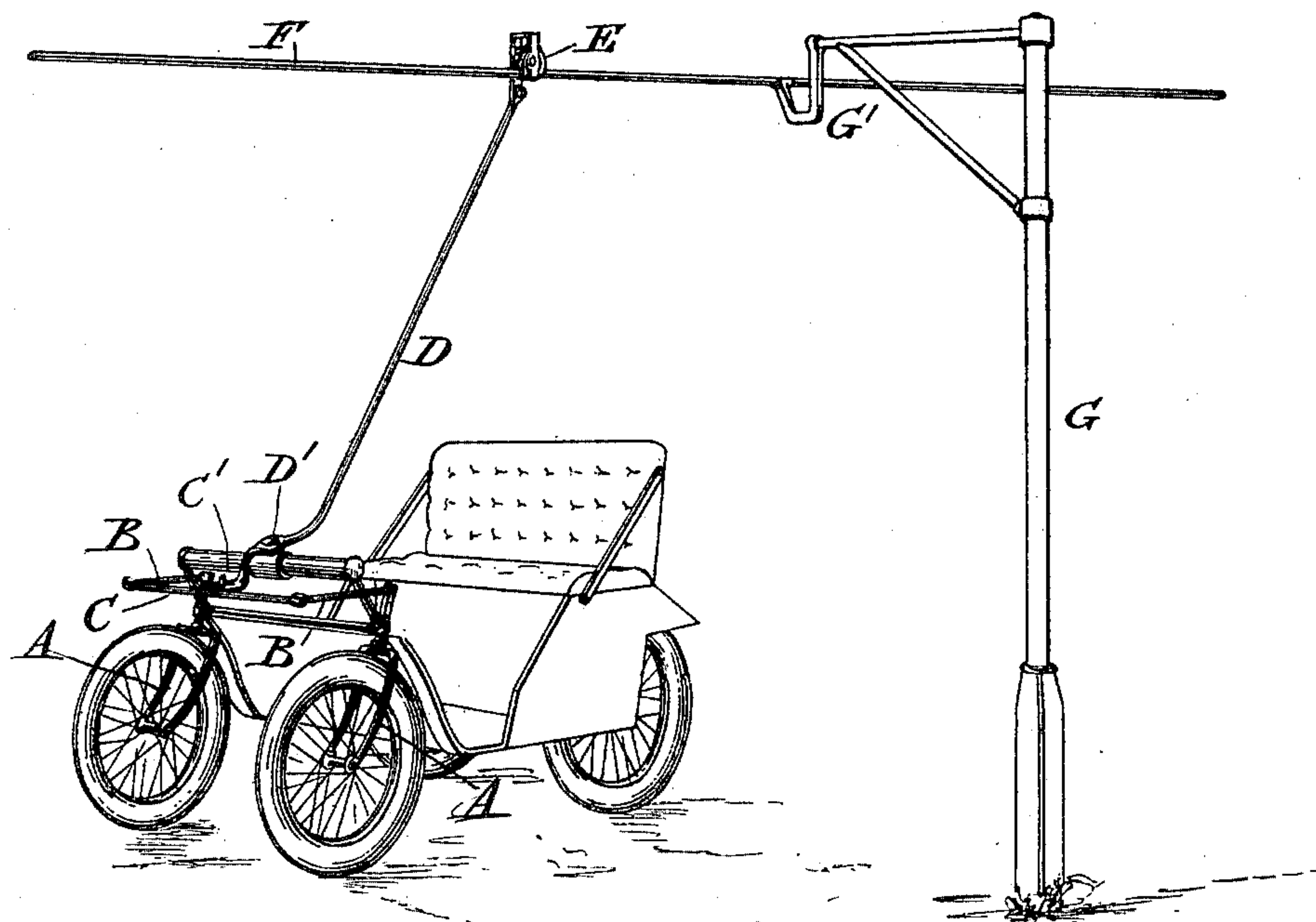
Patented June 6, 1899.

E. J. PENNINGTON.

DEVICE FOR STEERING MOTOR DRIVEN VEHICLES.

(Application filed Dec. 30, 1897.)

(No Model.)



Witnesses

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# UNITED STATES PATENT OFFICE.

EDWARD J. PENNINGTON, OF WALTON-UPON-THAMES, ENGLAND.

## DEVICE FOR STEERING MOTOR-DRIVEN VEHICLES.

SPECIFICATION forming part of Letters Patent No. 626,296, dated June 6, 1899.

Application filed December 30, 1897. Serial No. 664,735. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD J. PENNINGTON, a citizen of the United States, residing at Walton-upon-Thames, county of Surrey, England, have invented certain new and useful Improvements in Devices for Steering Motor-Driven Road-Vehicles, (for which I have obtained a patent in Great Britain, No. 13,966, dated June 24, 1896,) of which the following is a full, clear, and exact description.

This invention relates to devices for steering motor-driven road-vehicles, and comprises a steering-pulley or the like running on an overhead rail or cable and an arm or other means for connecting said pulley to the steering apparatus on the vehicle, the whole being so constructed and arranged that the lateral movements of the arm or other connector, due to the deviation of the vehicle from its true course, will operate to control the steering apparatus, and so automatically bring the vehicle back to its proper course. The said overhead pulley is pushed or drawn on its rail or cable by the vehicle.

Referring to the accompanying drawing, which illustrates in perspective one mode of carrying my invention into practice as applied to a four-wheeled road-vehicle driven either by an internal-combustion engine or a steam-engine or electric motor, the steering-forks A A of the front wheels are furnished with arms B B, connected by a link C, the lateral movements of which operate to steer the vehicle.

D is an arm pivoted to the vehicle at D' and carrying at its upper end a flanged pulley or sheave E, which runs upon the wire or cable F, by which the steering is controlled. The said wire or cable is supported by brackets, such as G', carried by pillars G or otherwise, and constructed so that the pulley E can pass them readily. The lower end of the arm D is forked and engages with a pin C' on the link C.

It will be obvious that should the vehicle when traveling on the road deviate from its proper course the arm D will operate to move the link C and so turn the steering-wheels in such a direction as will instantly bring the vehicle back to its proper course.

The details of construction may be varied without departing from the spirit of my invention. For instance, the pulley E is in some instances arranged underneath the wire or

cable, in which case the arm D is supported by a spring, which keeps the pulley in contact with the cable.

When applying my improvements to vehicles driven by electricity supplied from a central station through an overhead wire, I may use the arm D for making the necessary connection between the overhead wire and the vehicle. A return overhead wire will be used in this case for the return-current.

Having thus described my invention, I claim—

1. The means for steering a motor-driven road-vehicle, said means comprising an overhead wire or cable, and an arm connected at its lower end to the steering apparatus of the vehicle and carrying at its upper end a pulley or the like which travels in engagement with the said wire or cable, substantially as described.

2. In a steering mechanism for self-propelled vehicles, the combination of an overhead wire or guide, a pulley or traveler adapted to move thereon, and an arm pivoted to the vehicle one end of the said arm being connected to the pulley or traveler, and the other end pivoted to the steering mechanism of the vehicle, substantially as set forth.

3. In a steering mechanism for self-propelled road-vehicles, the combination with an overhead wire or guide, and a pulley or traveler running thereon, of an arm journaled on the vehicle-frame and connected at one end to the overhead pulley or traveler, steering-frames each carrying a road-wheel, and a bar connected to each steering-frame and pivoted to the other end of the aforesaid fulcrumed arm, substantially as set forth.

4. In a steering mechanism for self-propelled road-vehicles, the combination of an overhead electrical conductor-wire, an arm pivoted to the vehicle-frame, one end of said arm being in electrical contact with and guided by the overhead wire, while its opposite end is connected to the steering mechanism of the vehicle, the arrangement being such that the arm serves as a means for steering the vehicle and also to convey the electric current to the motor for driving the vehicle, substantially as set forth.

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