(No Model.)

D. L. WINTERS.

DRIVING AND STEERING ATTACHMENT FOR BICYCLES.

No. 597,348. Patented Jan. 11, 1898.

Fig. 1.

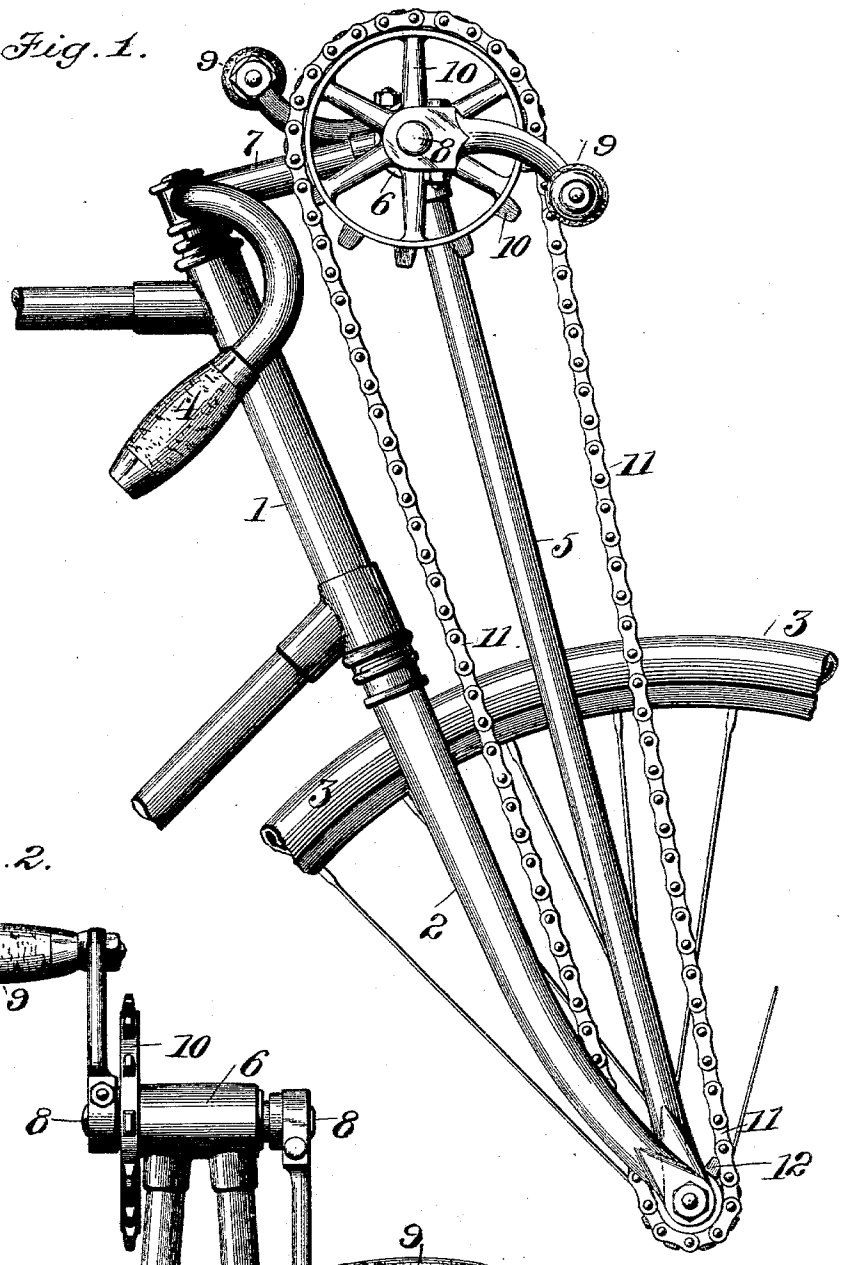


Fig. 2.

Attest:
Wm. A. Scott.
Alice L. Scott

Inventor:
David L. Winters,
by Robert Burns Att'y.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

DAVID L. WINTERS, OF CHICAGO, ILLINOIS.

DRIVING AND STEERING ATTACHMENT FOR BICYCLES.

SPECIFICATION forming part of Letters Patent No. 597,348, dated January 11, 1898.

Application filed May 18, 1896. Serial No. 592,090. (No model.)

To all whom it may concern:

Be it known that I, DAVID L. WINTERS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Driving and Steering Attachments for Bicycles; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification.

The present invention relates to that type of bicycles in which both the feet and hands are employed in the propulsion of the apparatus.

The object of the present improvement is to provide a simple and efficient attachment to the steering portion of a safety-bicycle, the construction being such that the forward wheel is not only positively driven to assist the rear driving-wheel in the propulsion of the bicycle, but at the same time affords a very efficient and convenient means for steering the same, as will hereinafter more fully appear, and be more particularly pointed out in the claims. I attain such object by the construction and arrangement of parts illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of the front portion of a safety-bicycle to which the present improvement is applied; Fig. 2, a detail front elevation of the upper part of the same.

Similar numerals of reference indicate like parts in both views.

Referring to the drawings, 1 represents the steering post or sleeve of the bicycle-frame that guides the stem of the steering-fork 2 of the forward or steering wheel 3 of the bycicle, 4 being the ordinary steering-handles, secured, as usual, to the upper end of the stem of the steering-fork 2 and which in the present improvement will be of the drooping form shown, for purposes hereinafter stated.

In the present improvement an auxiliary frame is provided which in the preferred form of the same, as illustrated in the drawings, consists of vertical members 5, that are attached at their lower ends to the lower ends of the main steering-fork 2, and which at their upper ends carry a bearing-sleeve 6, that has connection by a horizontal connecting member 7 with the handles 4 or with the steering-stem of the main steering-fork at or near the point of connection of such stem with the steering-handles.

8 is an axle suitably mounted within the bearing-sleeve 6 and carrying on its ends hand-cranks 9, by which a rotary motion is imparted to said axle by the hands of the rider. 10 is a sprocket-wheel on said axle that has connection by means of a chain 11 with a sprocket-pinion 12 on the forward wheel 3, so as to communicate motion from the axle 9 to the said steering-wheel of the bicycle.

In the present improvement it is material that the axle 9 be arranged some distance in front of the steering-handles 4, so as to allow the movement of the hand-cranks 9 to take place, as it is found desirable to retain the ordinary steering-handles for use in level riding, &c., where additional power is not required.

With the construction as above set forth and in which the horizontal axis of the supplementary driving-axle is arranged a distance forward of the vertical axis of the steering-stem I find from practical experience that the steering of the bicycle is rendered certain and easy by the crank-handles 9 9, while the same are being employed in aiding the propulsion of the wheel while racing, hill-climbing, &c. This ease and certainty of steering I ascribe to the fact that in the present arrangement the driving-axle 8 must be swung bodily in a lateral direction in effecting the steering movement of the wheel, and owing to such forward position the alternate strain upon the opposite crank-handles 9 9 do not have the effect upon the steering-wheel that it would have were the crank axle-shaft upon a line intersecting the axis of the steering-post to render the steering or movement of the bicycle unsteady and wabbly.

Having thus fully described my said invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination with the steering portion of a bicycle-frame, of an auxiliary frame, secured to said steering portion in a position forward of the same, an axle mounted on said auxiliary frame, hand-cranks, and a sprocket-wheel on said axle, a connecting-chain, and the forward bicycle-wheel pro-

vided with a sprocket-pinion, the horizontal axis of the driving crank-shaft being arranged a distance forward of the vertical axis of the steering-stem, and adapted to swing bodily in a lateral direction in the use of the said driving crank-shaft in the steering operation of the bicycle, substantially as set forth.

2. The combination with the steering portion of a bicycle-frame provided with a pair of drooped steering-handles, of an auxiliary frame secured to said steering portion in a position forward of the same, an axle mounted on said auxiliary frame, hand-cranks and a sprocket-wheel on said axle, a connecting-chain, and the forward bicycle-wheel provided with a sprocket-pinion, substantially as set forth.

3. The combination with the steering portion of a bicycle-frame of an auxiliary frame, consisting of vertical members 5, attached at their lower ends to the lower ends of the forks, a bearing-sleeve 6, at the top of the members 5, and a horizontal member 7, connected to the steering portion of the bicycle adjacent to the handles, an axle mounted in the bearing-sleeve 6, hand-cranks and a sprocket-wheel on said axle, a connecting-chain, and the forward bicycle-wheel provided with a sprocket-pinion, substantially as set forth.

In testimony whereof witness my hand this 12th day of May, 1896.

DAVID L. WINTERS.

In presence of—
ROBERT BURNS,
H. A. NOTT.