W. S. MITCHELL.

VELOCIPEDE.

No. 190,353. Patented May 1, 1877.

Fig. 1.

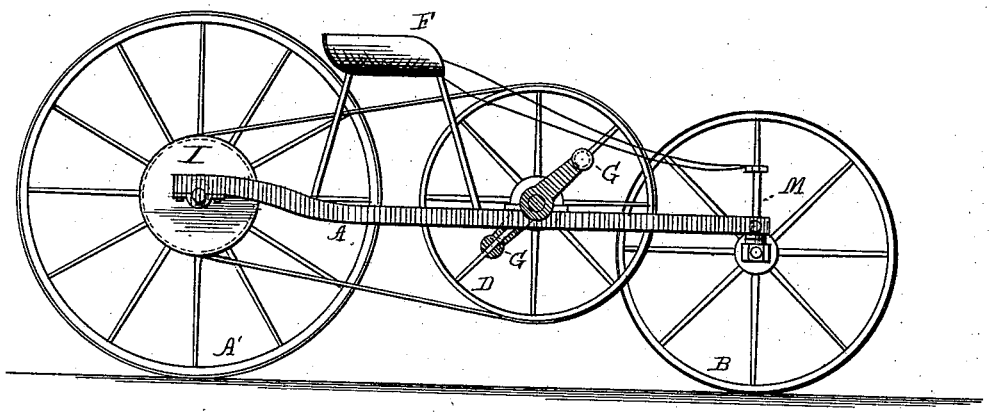


Fig. 2.

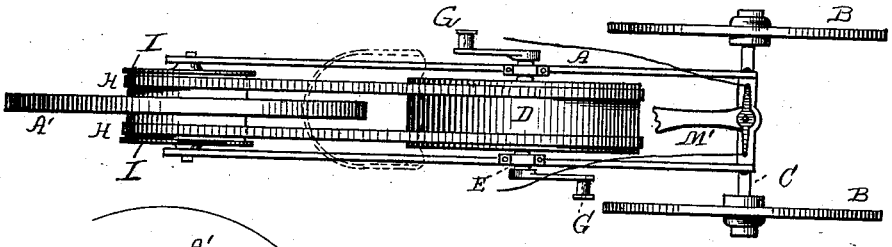


Fig 3

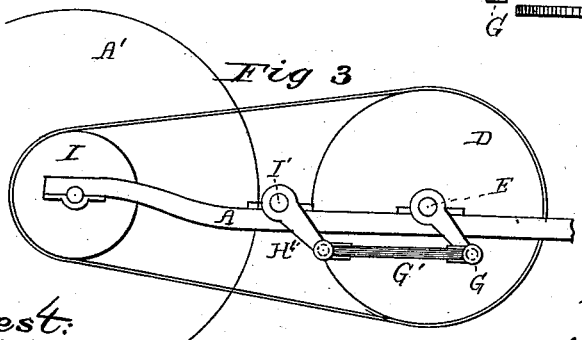
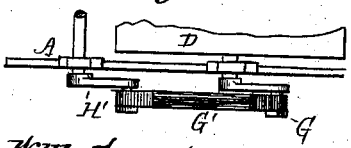


Fig. 4.



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UNITED STATES PATENT OFFICE.

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IMPROVEMENT IN VELOCIPEDES.

Specification forming part of Letters Patent No. **190,353**, dated May 1, 1877; application filed April 19, 1877.

To all whom it may concern:

Be it known that I, WILLIAM S. MITCHELL, of Washington, in the District of Columbia, have invented certain new and useful Improvements in Velocipedes, of which the following is a specification:

This invention relates to certain improvements in velocipedes; and it has for its object to provide for increased speed and greater ease in propulsion, and to secure a more uniform motion and increased facilities for steering.

In velocipedes as heretofore constructed, as in all other vehicles propelled by a crank-motion, there is a point in the revolution of the axles, known technically as the "dead-center," at which comparatively little or no power can be exerted on the cranks, and to overcome this objection the cranks are so arranged that while one is at its dead-center the other is in its most effective working position. This, however, when the cranks are directly attached to the driving-shaft, causes a tendency to throw the velocipede from one side to the other as the stress of power is changed, causing an uncomfortable movement from side to side. Moreover, the cranks as thus arranged do not entirely obviate the intermittent nature of the motion imparted to the driving-wheels, dependence usually being placed partly upon the momentum of the velocipede to carry the cranks past the dead-center, and thus equalize the motion, rendering it necessary in all cases to propel the velocipede at a high rate of speed, and impossible to propel it slowly with any comfort. Besides, as heretofore usually constructed, the single wheel has usually been employed for steering, which is objectionable, for the reason that the other wheels do not readily follow it, rendering it difficult to direct the movement of the velocipede properly.

My invention is designed to overcome these defects; and it consists in combining with the supporting-frame two front steering-wheels, a steering device for the same, a single rear driving-wheel having on its opposite sides pulleys, a central fly-wheel the axle of which is provided with two cranks and two endless bands or chains which pass around the fly-wheel, and the pulleys on the opposite sides of the single rear driving-wheel, all of which will be fully hereinafter described in detail.

In the drawings, Figure 1 represents an elevation of my improved velocipede, and Fig. 2 a top view thereof.

The letter A represents the frame or truck of the velocipede mounted upon a single driving-wheel, A′, journaled at the rear, and upon two steering-wheels, B′, mounted upon an axle, C, swiveled to the front of the frame or truck A. D represents a fly-wheel mounted upon a shaft, E, journaled in the frame A at a convenient distance in front of the seat F. Said axle is provided at its ends with foot-cranks G, by means of which motion may be imparted thereto by the occupant.

In the modification shown in Fig. 3, the cranks G are provided with treadles G′ secured at one end to the cranks and at the other to similar cranks H′ secured to a shaft, I′, journaled in the frame A at the rear of the driving-wheel shaft.

The letter H represents two endless bands, belts, or chains, extending from the fly-wheel to the rear, and passing over and around the pulleys I on the axle of the driving-wheel, which serves to impart motion thereto.

The pin M, by which the axle of the steering-wheels is secured to the frame, extends above the same, and is provided with a cross-piece, N, on top, to the ends of which are secured the cords P, extending backward to the occupant for the purpose of enabling him to shift the position of said wheels at pleasure and conveniently steer the velocipede. The pin M is preferably provided, however, with a lever, M′, extending backward by the occupant for the purpose of shifting the wheel.

The operation of my invention is apparent from the above description. The pulley on the driving-wheel shaft being much less in diameter than the fly-wheel enables the velocipede to be propelled at a high speed with comparatively little exertion, and the momentum of the fly-wheel carries the cranks past the dead-center, thus imparting a uniform and agreeable motion to the velocipede, while the steering is rendered accurate and easy, as the

single driving-wheel will readily follow the two steering-wheels the moment they are shifted.

What I claim, and desire to secure by Letters Patent, is—

In a three-wheel velocipede, the front steering-wheels and steering mechanism, with the single rear propelling-wheel, having pulleys to which motion is imparted by the fly-wheel through the medium of endless belts or chains, said fly-wheel being provided with foot cranks or treadles, substantially as described.

In testimony that I claim the foregoing, I have hereunto set my hand in the presence of the subscribing witnesses.

WM. S. MITCHELL.

Witnesses:
CHAS. L. COOMBS,
ALBERT H. NORRIS.