H. SMITH.

Velocipede.

No. 90,032. Patented May 11, 1869.

Fig. 1.

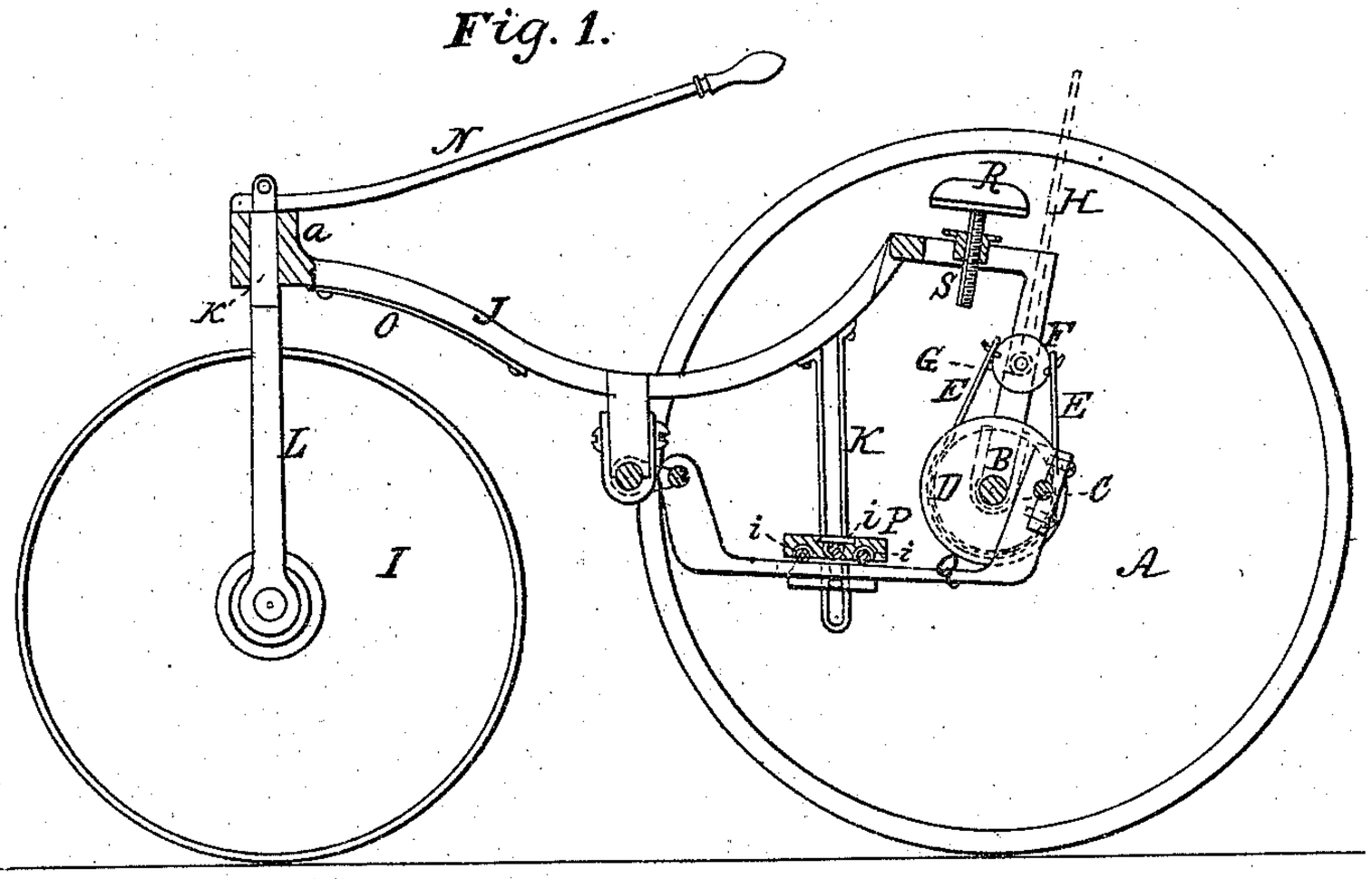
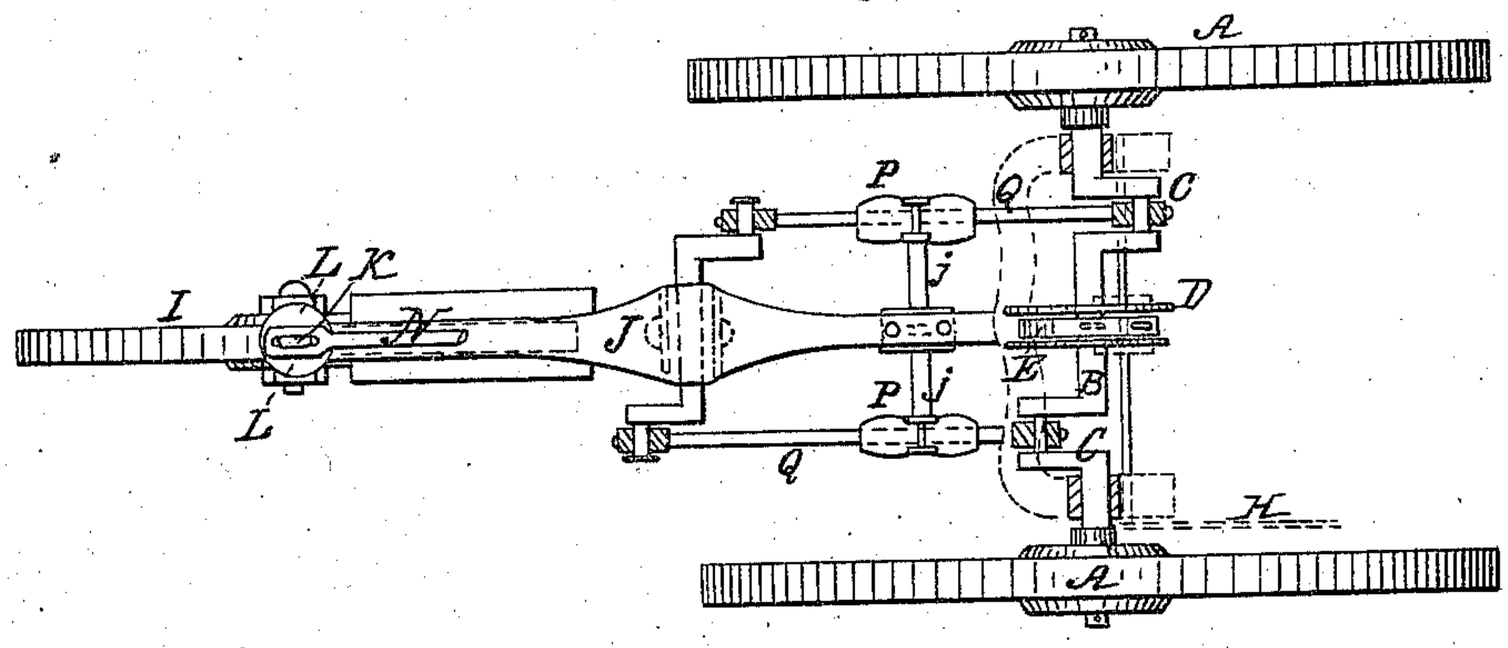


Fig. 2.



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HUGH SMITH, OF NEWARK, NEW JERSEY.

Letters Patent No. 90,032, *dated May* 11, 1869.

IMPROVEMENT IN VELOCIPEDES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HUGH SMITH, of Newark, in the county of Essex, State of New Jersey, have invented a new and useful Improvement in Velocipedes; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which drawing—

Figure 1 is a vertical longitudinal section of a velocipede, made according to my invention.

Figure 2 is a plan or top view thereof.

Similar letters indicate corresponding parts.

This invention relates to velocipedes which are propelled by means of the foot, and the same consists in several novel features, as is hereinafter explained.

The letter A designates the driving-wheels, which are connected by an axle, B, having two cranks, C, formed thereon, extending in opposite directions, and between the cranks is arranged a brake-pulley, D, beneath and around which is carried a friction-strap, or band, E, whose ends are fastened respectively to the opposite sides of a pulley, or block, F, on a rock-shaft, G, which is mounted in the saddle-frame of the velocipede, and which is turned or operated by means of a brake-handle, H, that rises alongside of the saddle.

The strap, or band E is made to bind the friction-pulley D, whichever way the rock-shaft is turned, because while one end of the strap is carried upward by the rotation of the shaft, the other end is carried downward and inward, toward a vertical line, which would go through the axis of the brake-pulley, so that the strap will bind on the said pulley.

The letter I designates the leading wheel, which is set forward of the driving-wheels, in a line midway between them, and it is connected with them by means of a perch, J, whose forward end is provided with a collar or hub that sets over the post K on the top of a vertical standard, L, which has two legs, that straddle the leading wheel, the bottom ends of the legs being formed with eyes, to receive the journal of said wheel.

The upper end of the post K protrudes through the perch J, and is squared to fit within a square mortise in the end of the steering-lever N, so that by turning said steering-lever, the leading wheel can be moved sideways in either direction, and the velocipede can be conveniently steered.

The steering-lever is provided with a stop, *a*, which can be made to catch in a socket in the end of the perch J, so that said steering-lever is locked, and the leading wheel is kept straight.

To the perch is secured a dash-board, O, over the leading wheel, in such a position that if the velocipede runs at a rapid rate, the dirt thrown off from the leading wheel is intercepted by said dash-board, and prevented from coming in contact with the person occupying the saddle.

A similar dash-board may be applied to each of the hind or driving-wheels.

The motion of my velocipede is produced by the action of the feet on treadles P, which are supported upon rods Q, extending from the cranks C of the axle B, to cranks *f* of a shaft, *g*, which has its bearing in a hanger, *h*, attached to the perch, as shown in fig. 1.

The cranks C and *f* are placed respectively at angles of one hundred and eighty degrees toward each other, so that the rods Q are parallel to each other, but one is going up when the other is going down, *vice versa*. The length of the rods Q is intended to be adjustable by providing said rods at one or both ends with adjustable boxes.

The treadles P are supported by friction-rollers *i*, which bear on the rods Q, and they are provided with guide-bars *j*, which slide up and down in a slotted hanger, *k*, attached to the perch J.

By these rods the treadles are compelled to move up and down in a vertical plane, while the rods Q are free to follow the motions of the cranks.

This arrangement of the treadles materially facilitates the operation of the velocipede, by reducing the requisite motion of the feet one half, or nearly so.

The friction between the treadles and the rods Q is reduced to a minimum by the friction-rollers *i*, placed between said parts, as shown in fig. 1 of the drawing, and by placing rollers on the ends of the guide-bars *j*, the friction between these bars and the slotted rollers may also be reduced.

Having thus described my invention,

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

1. The cranks C and *f*, connected by rods Q, in combination with the slotted hanger *k*, guide-bars *j j*, and treadles P, the latter having a motion in a vertical plane, whilst the rods Q move longitudinally, substantially as described.

2. The guide-bars *j*, extending from the treadles into the slotted hangers *k*, substantially as and for the purpose set forth.

3. The treadles P, in combination with the friction-rollers *i*, and rods Q, substantially as shown.

This specification signed by me, this 2d day of March, 1869.

HUGH SMITH.

Witnesses:

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