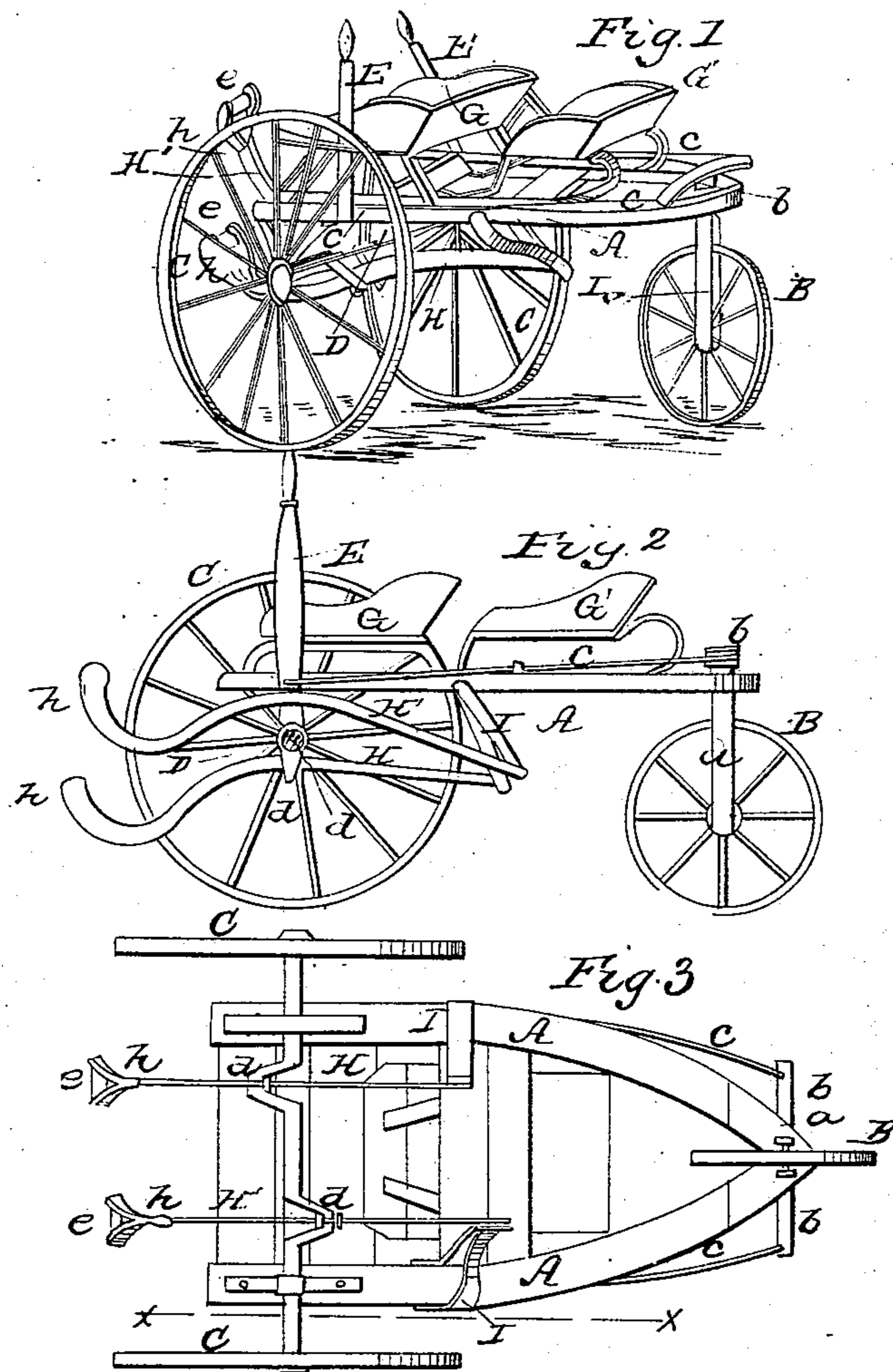


J. REINHART.

Velocipede.

No. 95,515.

Patented Oct. 5, 1869.



Witnesses  
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# United States Patent Office.

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Letters Patent No. 95,515, dated October 5, 1869.

## IMPROVEMENT IN VELOCIPEDS.

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, JOHN REINHART, of the city, county, and State of New York, have invented a new and useful Improvement in Velocipedes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawing, which forms part of this specification.

This invention relates particularly to an improved propelling-mechanism for a three or four-wheeled velocipede; and

It consists in the combination with the reach or frame, and a two-cranked driving-axle, of two levers, of peculiar shape, and two hangers, the connection and arrangement of said parts being such that neither crank can get upon a "dead-point," and the foot-levers can be operated by a person sitting upon an ordinary seat, and not astride of a reach or saddle, whereby the velocipede is specially adapted for the use of females.

In the accompanying drawing—

Figure 1 is a perspective view of a velocipede embodying my present improvements.

Figure 2 is a vertical longitudinal section thereof, taken on the plane of the line *xx*, fig. 3.

Figure 3 is an inverted plan view.

I have illustrated a three-wheeled velocipede, though my improved driving-mechanism is applicable to a four-wheeled velocipede.

A designates the frame, or the part answering to the reach in the generality of velocipedes. This frame I have shown as of a V-shape, the steering-wheel B being arranged at one end, the apex and the driving-wheels C C, at the other or opposite end, the latter being mounted at respective ends of an axle, D.

The steering-wheel B is arranged to revolve in a swivel-bearing, *a*, which extends up above the frame, and has applied to its upper end a "double lever," *b*, to whose ends are secured, respectively, rods *c*, or their equivalents, which are attached to the lower ends, respectively, of hand-levers E E, the said hand-levers being accessible to the occupant of a seat, G, which latter is mounted on said frame A.

I have shown a secondary seat, G', arranged at the rear of the seat G, to accommodate a child or another person.

I preferably mount one of the driving-wheels C loosely upon the axle D, to facilitate the turning of curves, but both may be rigidly secured, and serve as driving-wheels, in fact, if desired.

H H' are the foot-levers, connected to the frame in such manner as to have a horizontal movement.

I preferably connect the said levers at their rear ends, to vibrating hangers I I, pendent from said frame A; and the said levers H H', at a point intermediate, say midway of their length, are connected to the cranks *d d*, on the axle D.

The said levers project in front of the rider's seat, and their forward ends are curved upward, as shown at *h h*, and are provided with a foot-pin, *e*, or an equivalent, on which to rest the instep of the boot, for propelling the vehicle, as will be clearly understood by reference to the drawing.

By the above construction and arrangement of the levers H H', there is not the least possibility of the axle ceasing to revolve by reason of either of its cranks *d d* getting upon a "dead-point."

To explain, each lever H or H', by reason of its construction and arrangement, is effected by direct force from the foot in two directions, namely, a forward thrust, similar to throwing the leg forward in walking, and a downward pressure, similar to the bringing of the foot down upon the ground in walking.

Now, suppose the cranks be in the position shown in fig. 2, that is, when both cranks of the levers H H' are upon a "dead-point," and could not be relieved by a downward or vertical force from the foot; in such case a slight forward throw of the foot, as in walking, applied to the lever H', causes the said lever to move in a horizontal direction; this at once throws the crank off of its "dead-point," and then a downward pressure of the foot throws the axle round, till the other crank is in a position to be operated upon by the lever H in the same manner. Hence, it is evident that it is not possible for the axle to cease revolving by reason of either or both of its cranks getting upon a "dead-point."

And, moreover, inasmuch as the motions of the feet necessary to propel the vehicle are precisely the same as those required for walking, the vehicle can be propelled with ease and grace, and a velocipede so constructed is especially adapted for a lady's use, her dress can fall over the ends of the levers if she wishes, and hence cover her feet, and the very same motions of legs and feet required in promenading or walking will cause the velocipede to progress slowly or rapidly, in proportion to the rapidity the legs are moved when walking or running.

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

1. The combination, with the cranked axle of a velocipede, of the levers H H', constructed, arranged, and operating substantially as herein specified.

2. The combination, to produce an improved velocipede, of the frame A, seat G, steering-mechanism D *a b c* E, and actuating-mechanism C O D I H H', constructed, arranged, and operating substantially as herein specified.

JOHN REINHART.

Witnesses:

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