

## Velocipede.

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# United States Patent Office.

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## IMPROVEMENT IN VELOCIPEDE.

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 C. SMITH, of Brooklyn, in the county of Kings, 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 thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification.

This invention relates to a new and important improvement in the method of operating velocipedes, whereby they are propelled with greater ease, and whereby the limbs and muscles of the body are more generally brought into action than by any velocipede now in use.

The invention consists in connecting the seat with the driving-crank, in such a manner that the velocipede is propelled by throwing the weight of the body alternately on the saddle and on the stirrups, both motions serving to rotate the cranks and drive the wheel.

It also consists in the arrangement of parts whereby the operator uses both his feet simultaneously, and in the general construction and combination of parts as hereinafter more fully described.

In the accompanying plate of drawings—

Figure 1 represents a vertical side section of a velocipede, constructed according to my invention, the section being through the line *x x* of fig. 2.

Figure 2 is a top view.

Similar letters of reference indicate corresponding parts.

A is the driving-wheel.

B is the front, or steering-wheel.

This is a two-wheeled velocipede, the rear one being the driving-wheel.

C is the reach, which straddles the driving-wheel, and forms boxes for its axle to revolve in.

The forward end of the reach is connected with the post of the steering-wheel in the usual manner.

D is the seat or saddle, which is hung to a device, E, the ends of the device being connected with a central pivot, F, which passes through the reach.

G is a double bell-crank, which oscillates on the pivot F; its lower end is connected with the cranks H, by means of the rods I.

J represents the stirrups, which are pivoted to one arm of the bell-crank G, as seen at K.

The saddle rests upon the other arm of the bell-crank, as seen at L.

It will be seen that when the weight of the rider is thrown upon the stirrups, one arm of the bell-crank will be depressed, as seen in the drawing, which, through the connecting-rods I, will give the cranks part of a revolution.

Now, by throwing the weight of the body upon the saddle, the other arm of the bell-crank will be depressed, and the revolution of the crank will be completed.

This alternate motion of the rider is continued, the weight being thrown upon both stirrups simultane-

ously, and then upon the saddle, the momentum of the machine serving to carry the cranks past their dead-centres.

This action is almost identical with that given in riding a galloping horse, while more muscles are brought into play, and more benefit derived from the exercise.

It may be occasionally desired to intermit the action of the saddle upon the bell-crank, and to propel the velocipede exclusively with the feet.

To accomplish this, I provide a sliding plate, P, on the reach, in the rear of the saddle, which is moved back and forth by the double lever *m*, which is attached to the arms *n* of the plate, which arms extend down over the outside of the reach, on each side, as seen in the drawing.

The fulcrum of the lever *m* is in the reach, as seen at *o*.

By drawing the lever *m* back towards the saddle, it will be seen that the plate will be drawn forward.

The plate is confined to the reach by screws, which pass through slots in the plate, which serve as guides, and allow it to slide.

When the plate is drawn forward, it catches under the notch *r*, in the device E, which holds the saddle up, so that it cannot act upon the arm of the bell-crank.

It will be seen that this plate is at all times under the control of the rider, so that he can intermit the action of the saddle as a propelling-medium whenever he chooses.

As seen in fig. 2, the bell-crank works on the pivot-rod, F, in a slot in the reach.

The advantages of constructing a velocipede in this manner are obvious.

The feet are used simultaneously, which motion has no tendency to throw the rider off his balance, as in the ordinary two-wheeled velocipede, where it is propelled by the feet alone, which are used alternately.

It is much easier to operate the machine, as the weight of the body, and not the muscles of the legs, is all that is required, while the motion caused by the change of position, gives the rider the exercise of a horseback-ride.

Having thus described my invention,

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

1. The combination of the saddle D, clevis E, double bell-crank G, stirrups J, and crank-shaft H, whereby the vehicle is adapted for operation, by alternate pressure of the feet and body upon the stirrups and saddle, substantially as herein shown and described.

2. The plate P, or its equivalent, whereby the action of the saddle, or seat D, on the bell-crank, is stopped or intermitted, substantially as and for the purposes described.

JOHN C. SMITH.

Witnesses:

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