

J. E. BROWNE.  
Velocipede.

No. 215,876.

Patented May 27, 1879.

Fig1

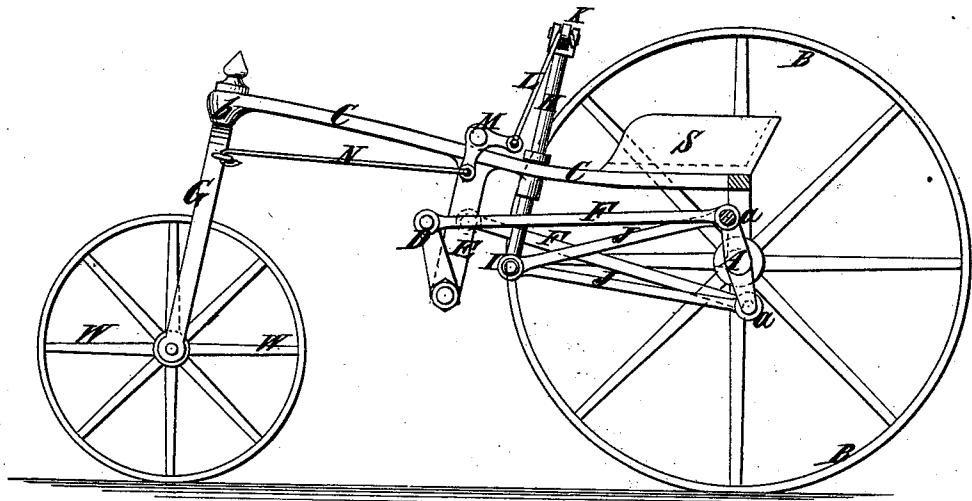
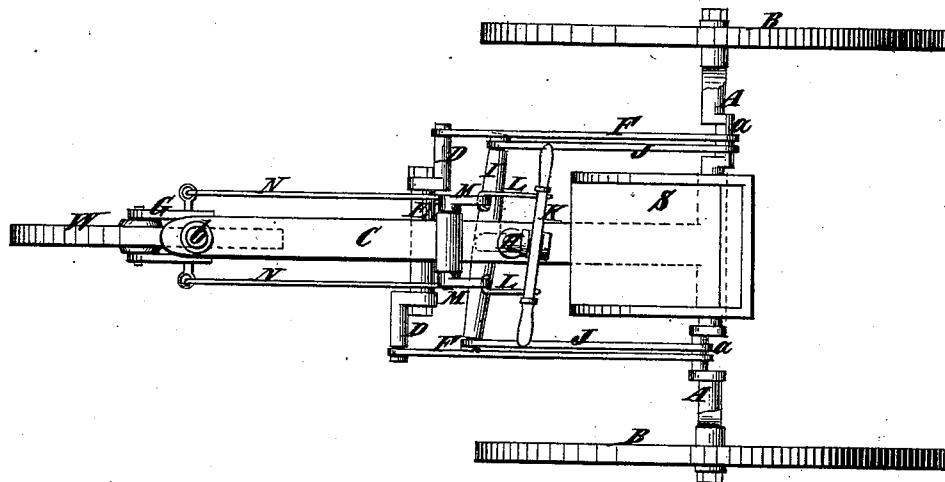


Fig2.



Witnesses:

Chandler Hale,  
Thomas E. Birch.

Inventor

James E. Browne  
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# UNITED STATES PATENT OFFICE.

JAMES E. BROWNE, OF ELIZABETH, NEW JERSEY.

## IMPROVEMENT IN VELOCIPEDES.

Specification forming part of Letters Patent No. **215,876**, dated May 27, 1879; application filed March 11, 1879.

*To all whom it may concern:*

Be it known that I, JAMES E. BROWNE, of Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Means for Producing Rotary Motion by Hand and Foot Power, applicable to Velocipedes, of which the following is a specification.

The principal object of my invention is to produce a simple and efficient mechanism, whereby a velocipede may be propelled and simultaneously steered by power exerted by the hands; also, with the aid of power exerted by the feet, if desirable.

To this end the invention consists in the combination of a cranked rotary shaft, a lever connected to the cranks thereof and capable of being oscillated forward and backward horizontally, so as to impart motion to such shaft; also, in the combination of a steering wheel or device having a swivel-connection with the body of the vehicle and a lever connected therewith, and capable of being oscillated upward and downward, to thereby shift the steering wheel or device; also, in the combination, with the parts mentioned, of treadles, whereby additional power may be exerted by the feet; also, in various details and combinations of parts hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a side view of a velocipede embodying my invention, one of the wheels being removed the better to illustrate its construction; and Fig. 2 is a plan or top view.

Similar letters of reference designate corresponding parts in both figures.

A designates a rotary shaft or axle, provided with cranks *a* set on opposite sides of said shaft. This rotary shaft is shown as mounted upon two traction-wheels, B, rigidly affixed to it, and serving by their rotation through the shaft to propel the vehicle of which they form part.

C designates a reach supporting a seat, S, connected with the cranked shaft A at one end, and connected at the other end by a swivel-connection, *b*, with a bifurcate standard, G, supported upon the journals of a leader or steering wheel, W, or device adapted to be turned by the said standard so as to guide the vehicle.

D designates treadles pivoted to a hanger, E, depending from the reach C, and connected by rods F, or their equivalents, to the cranks *a* of the shaft A, so that when oscillated forward and backward rotary motion will be imparted to said shaft.

H designates an upright shaft, supported by the reach C, and adapted to oscillate alternately in different directions. At its lower end it is shown as provided with a cross-piece, I, whose arms are connected by rods J, or their equivalents, to the cranks *a* of the rotary shaft A, so that by oscillating this upright shaft motion will be imparted to the rotary shaft A.

The upper end of the upright shaft H is shown as bifurcated to receive a lever, K, whereby it may be oscillated horizontally by the hands of the occupant of the seat S, so as to rotate the shaft A. The said lever being pivoted to the upright shaft H, is also free to oscillate up and down from the upright shaft as a fulcrum. The arms of this lever are connected by rods L, or their equivalents, with the adjacent arms of the bell-crank or elbow levers M, pivoted to the reach C, and having their other arms connected by rods N, or their equivalents, to the standard G of the steering-wheel W, so that by tilting said lever or oscillating it upward and downward the steering wheel or device may be adjusted at different angles, so as to direct the vehicle as may be desirable.

It is obvious that cords passing over pulleys or through suitable openings in the reach, or some appurtenances of it, and connecting the lever with the steering wheel or device, may be employed with good results.

My improvements might be embodied in a vehicle for sailing on water with advantage.

It will be seen that by my invention I provide a simple and efficient mechanism whereby a vehicle may be propelled and steered or guided without removing either of the hands or feet from the devices on which they act to accomplish their results.

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

1. The combination of a cranked rotary shaft with a lever connected to the cranks thereof, and capable of being oscillated forward and backward horizontally to impart motion to said shaft, substantially as specified.

2. The combination of a cranked rotary shaft and an upright shaft provided near the lower end with a cross-piece, the arms of which are connected by rods to the cranks of the shaft first named, and provided near the upper end with a lever capable of being oscillated forward and backward to oscillate the upright shaft and impart motion to the cranked rotary shaft, substantially as specified.

3. The combination, with a steering wheel or device having a swivel-connection with the body of a vehicle, a lever capable of being oscillated upward and downward to shift or adjust such steering device, and means for connecting the arms of said lever with said steering wheel or device, substantially as specified.

4. The combination of a steering wheel or device having a swivel-connection with the body of a vehicle, a lever pivoted to a support so that it may be swung upward and downward, bell-crank or elbow levers, and means for connecting the same with the said lever and with the steering device, substantially as specified.

5. The combination, with a cranked rotary shaft and a steering wheel or device, of a lever connected to the cranks of said shaft, as also to the steering wheel or device, and capable of

being oscillated forward and backward to impart motion to the said cranked rotary shaft, and upward and downward for adjusting the steering wheel or device, whereby the lever is enabled to impart motion to and steer the vehicle, substantially as specified.

6. The combination, with a cranked rotary shaft and steering wheel or device, of treadles connected to the cranks of the rotary shaft, an upright shaft connected to said cranks by a cross-piece and rods, or their equivalents, and a lever mounted upon said upright shaft, and capable of being moved in a horizontal plane to oscillate the upright shaft, and thus impart motion to the rotary shaft.

7. The combination, with a cranked rotary shaft and a steering wheel or device, of treadles connected to the cranks of the rotary shaft, a lever connected to said cranks, so that by being oscillated forward and backward horizontally it will impart motion to the said shaft, and connected to the said steering wheel or device, so that by being oscillated upward and downward it will effect the adjustment thereof.

JAMES E. BROWNE.

Witnesses :

CHANDLER HALL,  
EDWIN H. BROWN.