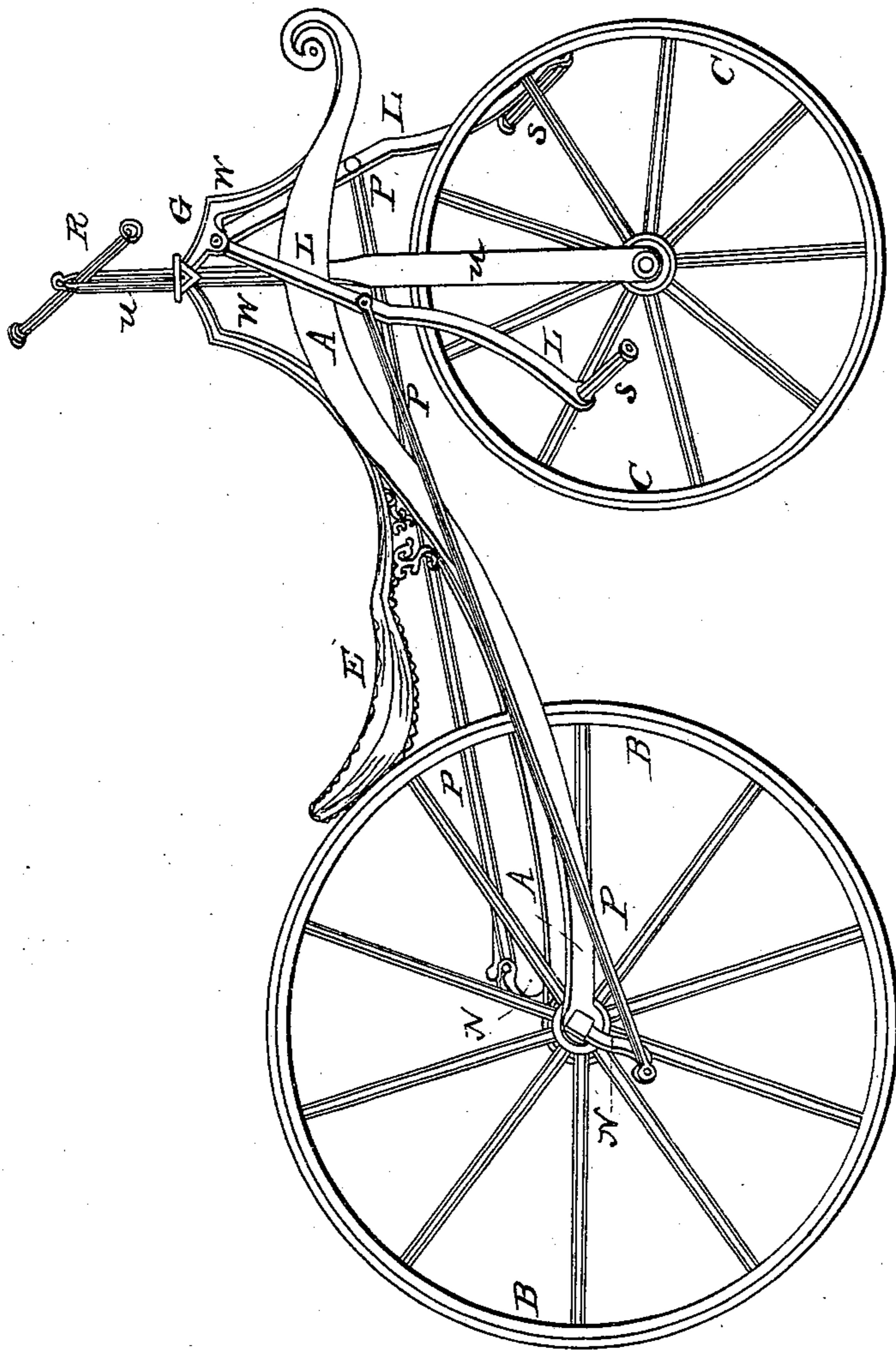


S. F. ESTELL.

Velocipede.

No. 87,033.

Patented Feb. 16, 1869.



WITNESSES  
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W. J. Estell.

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# United States Patent Office.

SAMUEL F. ESTELL, OF RICHMOND, INDIANA.

*Letters Patent No. 87,033, dated February 16, 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, SAMUEL F. ESTELL, of Richmond, in the county of Wayne, and State of Indiana, have invented a new and useful Improvement in Velocipedes; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings, making a part of this specification.

The nature of my invention relates to an improved method of constructing velocipedes, whereby the propelling-power is communicated to the hind wheel by means of cranks and shafts, or pitman-rods, the latter being connected at their forward ends with levers, that are worked with the feet.

To enable others skilled in the art to make and use my invention, I will proceed to describe the same with reference to the drawings.

The coupling-bar A is divided, and embraces the larger wheel, B, either limb of said bar being provided with suitable boxing, in which the axle of the wheel revolves.

The vertical shaft U is in like manner divided, and embraces the forward wheel, C.

The upper end of said shaft passes through the coupling-bar A, and is further stayed by means of the curved brace W, which is firmly riveted to the bar A.

The pendent levers L L are pivoted to the brace W at G, and are provided at their lower ends with the pins or stirrups S S.

Below the points of attachment of the pitman-rods P P, the pendent levers L L are curved outward, to allow greater freedom, in turning, to the front wheel C.

The cranks N N are rigidly attached to the axle of the wheel B, and are pivoted to the pitman-rods P P.

E represents the seat, and R, the tiller; by means of which the vehicle is guided when in operation.

Having thus fully described my said invention,

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

The velocipede, in which the brace W is secured to the front part of the reach forming part of the bearing for the vertical shaft U, and supports for the pendent levers L L, secured to the brace, one on each side, in combination with rods P P, connected with cranks N, and attached to the pendent levers L L, by means of pivots, all combined as herein shown and described.

SAMUEL F. ESTELL.

Witnesses:

ARTEMAS ROBERTS,  
W. P. ESTELL.