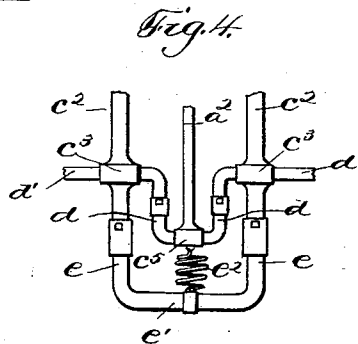
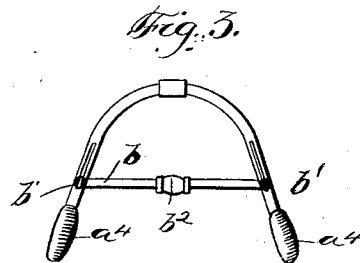
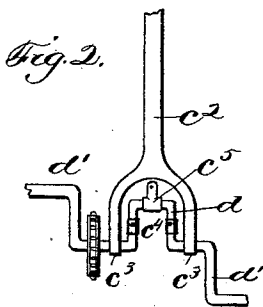
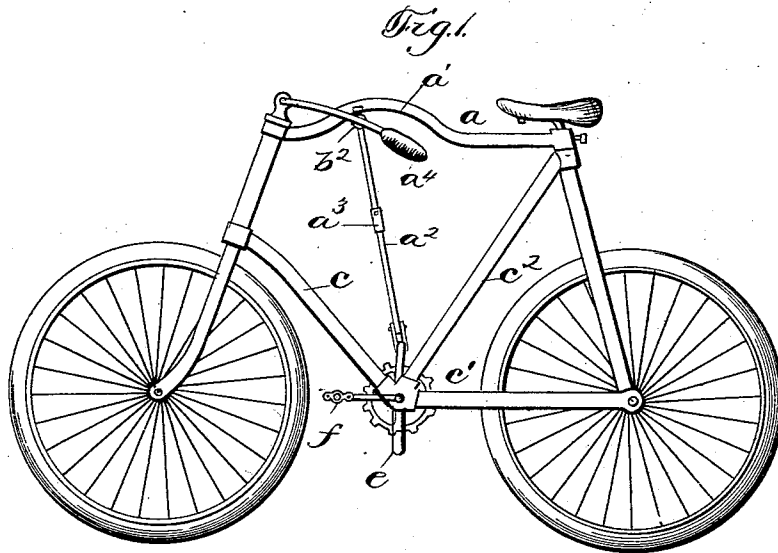


(No Model.)

W. W. SHAW.
BICYCLE.

No. 571,983.

Patented Nov. 24, 1896.



Witnesses:

J. M. Fowler
R. E. Rabbit.

Inventor

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UNITED STATES PATENT OFFICE.

WALTER W. SHAW, OF TEXARKANA, ARKANSAS.

BICYCLE.

SPECIFICATION forming part of Letters Patent No. 571,983, dated November 24, 1896.

Application filed December 3, 1895. Serial No. 570,889. (No model.)

To all whom it may concern:

Be it known that I, WALTER W. SHAW, a citizen of the United States, residing at Texarkana, in the county of Miller and State of Arkansas, have invented certain new and useful Improvements in Bicycles; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention is an improvement in drive-powers for bicycles; and it consists of a crank-shaft driven by an adjustable pitman operated by the guide-arms and a spiral spring secured to the collar of the crank-shaft, a downward extension of the lower reach, and may be designated as a "combination of the foot and hand power."

The object of my invention is to enable the rider to propel himself on muddy roads and on upgrades.

In the accompanying drawings, Figure 1 is a side elevation of my invention. Figs. 2, 3, and 4 are detail views.

My invention is described as follows: The top bar a has an upward curve a' to give room for the play of the pitman-rod a^2 , which is provided with an adjustable joint a^3 , so that the handles a^4 may be adjusted higher or lower to the accommodation of the rider, and in order to lengthen or shorten the stroke of the handles a^4 the cross-rod b of said handles is adjustably secured to the same by thumb-screws b' , working through slots in said handles, or other proper means, so that it may be moved out toward the points a^4 of said handles or in toward the bow part thereof. Said rod b is provided with a ball-and-socket joint, knuckle-joint, or hinge b^2 , to which is secured the upper end of the pitman a^2 .

The inner ends of the reaches c and c' and of the brace c^2 are bifurcated, allowing room for the U-bend d of the pedal-rod d' to rotate in. Said pedal-rod d' is journaled in the bifurcated ends c^3 of the brace c^2 , preferably in ball-bearings.

The U-bend of the pedal-shaft is made adjustable at the point c^4 , so that the stroke of the handles a^4 may be adjusted to greater or less lengths, as may be convenient or desirable for the rider.

The lower and bifurcated end of the brace

c^2 is provided with a lower U-shaped bend e , to the cross-rod e' of which is secured the lower end of a spring e^2 , the upper end being secured to the ball-socket joint, knuckle-joint, or hinge c^5 around the cross-rod of the U-bend d of the pedal-rod d' .

The lift is supposed to be much the strongest, so that the lift will straighten or open the spring, and the down motion will be assisted by the strength of the spring. The frame or U-bend e for the spring is rigid, that is, it is integral with the brace c^2 .

It will be observed that in my bicycle there is no dead-center; but as much power at one point as at another in the revolution of the axle, the pedals f being so arranged on the pedal-shaft in relation to the bend d , Fig. 2, that the dead-center is broken up.

The seat is so adjusted that the rider may support a goodly portion of his weight upon his feet and hands, and, if he desires, he can stand almost erect and apply all his weight and strength directly to the propelling power of the machine.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In combination with a bicycle, substantially as shown and described, the reaches c and c' , provided with inner bifurcated ends; brace c^2 , provided with a bifurcated lower end having bearings c^3 ; crank-shaft d' , having the adjustable U-bend d , journaled in bearings c^3 ; adjustable pitman a^2 , having one end secured to the sleeve c^5 , and the other to the joint b^2 , on the rod b ; and rod b , adjustably secured between the arms a^4 , substantially as shown and described and for the purposes set forth.

2. In a bicycle, substantially as shown and described, the handle-bars a^4 , having adjustably secured between them rod b ; joint b^2 , working on said rod; pitman-rod a^2 , its upper end secured to the joint b^2 , and its lower adapted to operate a crank, substantially as shown and described and for the purposes set forth.

3. In combination with a bicycle, substantially as shown and described, the reaches c and c' , provided with inner bifurcated ends; brace c^2 , provided with a bifurcated lower end terminating in a lower U-bend e ; crank-shaft

d' , having the U-bend d , journaled in the bearing c^3 ; pitman a^2 , its upper end secured to bearing b^2 , and its lower end adapted to operate a crank; spiral spring e^2 , its lower end
5 secured to the bar e' , and its upper end to the sleeve c^5 , substantially as shown and described and for the purposes set forth.

In testimony whereof I affix my signature in presence of two witnesses.

WALTER W. SHAW.

Witnesses:

JAMES M. MONTGOMERY,
JAMES O. REEVES.