(No Model.)

A. BURDESS.

VELOCIPEDE.

No. 364,335. Patented June 7, 1887.

FIG. 1.

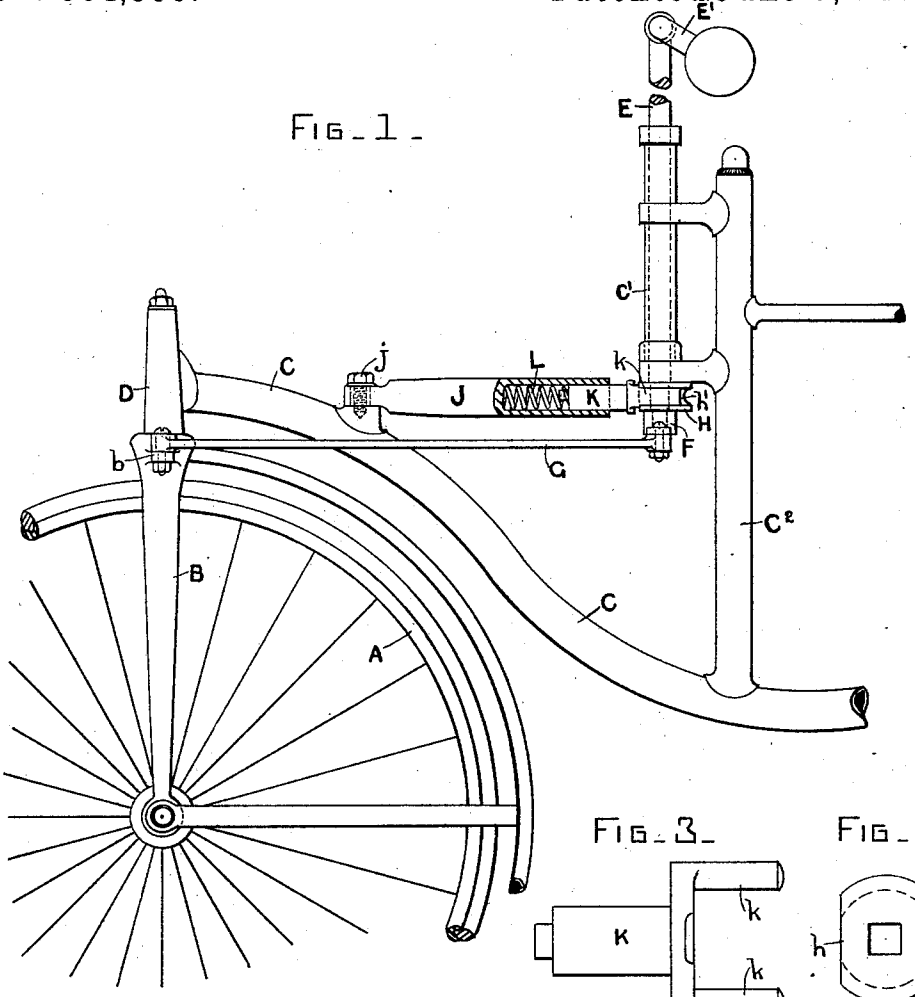
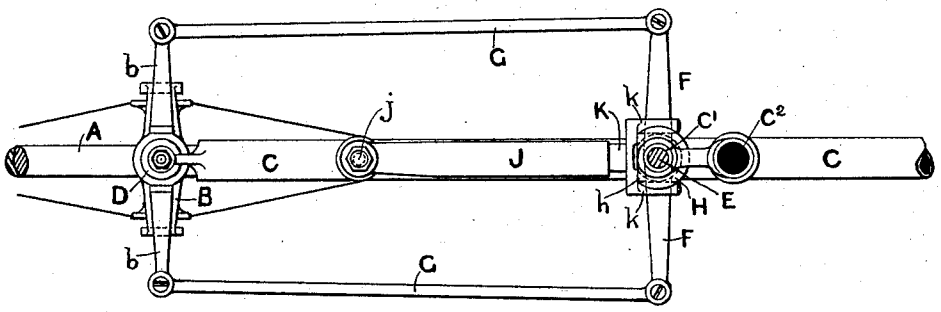


FIG. 3.

FIG. 4.

FIG. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

ADAM BURDESS, OF COVENTRY, COUNTY OF WARWICK, ENGLAND.

VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 364,335, dated June 7, 1887.

Application filed March 8, 1887. Serial No. 230,112. (No model.) Patented in England May 11, 1886, No. 6,355.

To all whom it may concern:

Be it known that I, ADAM BURDESS, a subject of the Queen of Great Britain, residing at Coventry, in the county of Warwick, England, have invented certain new and useful Improvements in and relating to Velocipedes, (for which I have obtained a patent in Great Britain, No. 6,355, bearing date May 11, 1886,) of which the following is a specification.

My invention relates to improvements in the steering-gear of those bicycles, tricycles, and other velocipedes steered by a non-driven front wheel mounted in a fork turning on a vertical axis; and it has for its objects, first, to control the steering-wheel by a transverse handle-bar indirectly connected therewith; secondly, to reduce vibration on the handle-bar by cutting off direct contact with the steering-wheel, and, thirdly, to generally increase the efficiency of the machine. I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a part of a velocipede, showing my improved steering-gear. Fig. 2 is a plan thereof; and Figs. 3 and 4 are views, on an enlarged scale, showing the forked plunger and the circular disk of the controller.

Similar parts are designated by similar letters throughout the several views.

I carry my invention into practical effect in the following manner: I mount the steering-wheel A in a fork, B, turning on a vertical axis by any convenient form of head or socket, D, formed by and between the fork B and the forward end of the main frame C of the machine. In a convenient position in the rear of the head of the fork carrying the steering-wheel I mount in a suitable socket, C′, supported by an upward extension, C^2, of the frame C, a vertical steering-bar, E, provided at its uppermost end with a transverse handle-bar, E′, and on its lower end with a cross-bar, F, forming two short arms at right angles to the center line of the machine. On the head of the fork carrying the steering-wheel A are fixed two arms, *b b*, which are connected to the cross-bar F, fixed to the vertical steering-bar E, by suitable coupling or connecting rods, G, G. On the vertical steering-bar E is fixed a circular disk, H, having a semicircular groove, *h′*, formed on its periphery, and a segmental part, forming a "flat," *h*, cut off its circumference. On the frame C of the machine, between the vertical steering-bar E and the head D of the fork of the steering-wheel, is pivotally fixed a hollow cylinder, J, in which is fitted a plunger, K, carrying at its free end a fork with round prongs *k k*, which engage with the groove *h′* in the periphery of the disk H, fixed to the steering-bar E. A spring, L, made of coiled steel wire or other suitable elastic material, is placed within the hollow cylinder J and bears against the end of the plunger K, and thus keeps the root of the fork on the end of it up to the flat cut on the disk H fixed to the steering-bar E. The fork B, carrying the steering-wheel and the vertical steering-bar E, may be set vertical, or they may be raked backward at any desired angle.

It will be seen that when the transverse handle-bar E is turned for the purpose of steering the machine the motion of it will be communicated to the fork B, carrying the steering-wheel A, through the cross-bar F, the arms *b b*, and coupling-rods G G, and that as the bar is turned the disk H, fixed on the vertical bar E, will force the plunger K into the cylinder J, and so compress the spring L, which, by its reaction, will tend to restore the steering-wheel A, through the vertical steering-bar E and coupling-rods G G, to its normal position for running in a straight line.

By constructing and arranging the steering-gear according as hereinbefore described the steering-wheel may be carried well forward, and so reduce the weight carried by it. The steering may also be geared up or down to suit the tastes of individual riders, and the steering-wheel will always run in a straight line, unless otherwise controlled by the handle-bar, and it will always return to its central position automatically.

I am aware that it is not new to operate the steering-wheel of a velocipede from an independently-mounted steering-bar connected to the fork carrying the steering-wheel by coupling rods and arms, and also that devices for controlling the free action of the steering-wheel have already been used, and therefore I do not claim these devices, broadly; but,

Having now particularly described and as-

certained the nature of my said invention and in what manner the same is to be performed, what I do claim, and desire to secure by Letters Patent, is—

1. In a velocipede steered by a non-driven front wheel controlled by a transverse handle-bar carried by a vertical bar mounted in suitable bearings supported by the frame of the machine and connected to the fork carrying the steering-wheel by suitable coupling rods and arms, the combination of parts consisting, essentially, of the circular disk fixed to the vertical bar and having a flat cut or formed on one side, the hollow cylinder pivotally fixed to the frame of the machine, the forked plunger, and the helical spring, all arranged specifically as hereinbefore set forth.

2. In a velocipede steered by a non-driven front wheel, the combination, with the fork B, carrying the steering-wheel A, of the transverse handle-bar E′, the vertical steering-bar E, the cross-bar F, the arms *b b*, fixed to the fork B, the coupling or connecting rods G G, the hollow cylinder J, pivotally fixed to the frame C of the machine, the helical spring L within the cylinder, the forked plunger K, fitting therein, and the circular disk H, having a flat, *h*, cut on its periphery, all arranged and operating as and for the purpose hereinbefore set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ADAM BURDESS.

Witnesses:
ARTHUR BERNARD COLE,
ARTHUR TOWNSEND.