





# UNITED STATES PATENT OFFICE.

THOMAS HARGREAVES BRIGG, OF BRADFORD, ENGLAND.

## BICYCLE.

SPECIFICATION forming part of Letters Patent No. 609,006, dated August 16, 1898.

Application filed January 6, 1897. Serial No. 618,112. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS HARGREAVES BRIGG, engineer, of Bradford, Yorkshire, England, a subject of the Queen of Great Britain and Ireland, have invented certain new and useful Improvements in Bicycles or Like Vehicles, of which the following is a specification.

This invention relates to an improvement in bicycles and like vehicles having a front steering handle-bar and pedal driving-gear, the improvement being designed to enable the cyclist at will to materially increase either his driving power or his back-pedaling or retarding power beyond that which he normally exerts, due to his weight and normal momentum on the pedals, as occasion may necessitate—as, for instance, when climbing gradients, or when meeting the wind, or when sprinting, or when descending gradients, or when, as on an emergency, he may desire to suddenly stop.

To this end the invention consists in applying to the cycle-frame, intermediate of the handle-bar and the saddle, a handled forearm-bar and supporting-stem, the stem being adjustable in distance from the handle-bar and the saddle, and the forearm-bar being adjustable in height in relation to the handle-bar and the saddle and having facility of turning about the axis of its supporting-stem and being adjustably connected to the handle-bar, whereby it is enabled to accommodate itself to the steering movements of the handle-bar given thereto when the cyclist has hold thereof, and enables such movements to be imparted from it (when the cyclist has hold thereof) to the handle-bar, and is effective in enabling the cyclist to obtain increased power, as above referred to, by taking with the forearms a forward or an upward bearing against it (the forearm-bar) which will enable him, (while manipulating the handle-bar and without interfering with his control of the steering-gear,) in consequence of the leverage he will thus obtain, to bear on the pedals either with a moderately-increased pressure or with a considerably greater pressure than that which is due to his weight and normal momentum, as circumstances may necessitate. The forearm-bar also affords the cyclist when traveling under ordinary circumstances a means of resting his arms by folding the same

and resting thereon, so as to aid in supporting the weight of the body and in relieving the spine and the seat muscles from the burden and fatigue of so doing, and an auxiliary means of steering the cycle when not holding the handle-bar.

On the accompanying drawings, Figure 1 represents an elevation, and Fig. 2 represents a plan, of a bicycle adapted to the improvement.

$a$  is the forearm-bar, which is adjustably applied to the cycle-frame  $b$  intermediate of the normal handle-bar  $c$  and the saddle  $d$  in such a position as will offer an effective resistance to forward or upward pressure exerted by the cyclist's forearms while having hold of the handles  $c'$  or handle-bar  $c$  when he desires to increase his driving power or his retarding power, as aforesaid. The forearm-bar is supported by and is vertically adjustable in a stem or stayed frame  $b'$ , which is adjustably supported, as at  $b^2$ , by the upper backbone  $b^3$ . The forearm-bar has a turning movement about the axis of its supporting-stem  $b'$  as a center, which enables it to accommodate itself to the varying positions given by the cyclist to the handle-bar, to which latter the forearm-bar is connected by a rod  $e'$ , which is telescopically adjustable in length, as at  $e^3$ , and has ball-and-socket connections, as at  $e^2$ , with the bars  $a$   $c$ , so that the cyclist's manipulation of the steering-gear by the normal handle-bar  $c$  will not be interfered with by his forward or upward pressure with his forearms against the forearm-bar. The forearm-bar extends beyond the handle-bar  $c$ , as at  $a'$ , sufficiently to be engaged by the cyclist's forearms, either when bearing forwardly or upwardly thereagainst or when resting thereon, and is formed with handles or may be padded at such parts.

The improvement may be applied to cycles fitted with flat, raised, dropped, forward, or backward handles by correspondingly adjusting the position of the forearm-bar.

As applied to roadster-cycles, I prefer the relative positions of the cycle handle-bar  $c$  and forearm-bar  $a$  represented in full lines on the drawings, as the cyclist when having hold of the handles  $c'$  of the handle-bar  $c$  can then by leaning his forearms forwardly against the forearm-bar obtain a moderately-



increased driving or retarding power, and by slipping his hands along the handle-bar toward the stem thereof and bearing his forearms upwardly against the forearm-bar he  
5 can obtain a considerably-increased driving or retarding power; but for racing-cycles, in which the handles are arranged very low in relation to the saddle, I prefer the relative positions shown in dotted lines in Fig. 1.

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

The combination with a cycle-frame having a front steering handle-bar *c*, and pedal driving-gear, of a handled forearm-bar *a*, and  
15 supporting-stem *b'*, arranged intermediate of the handle-bar *c*, and the cycle-saddle, the stem being adjustable in relation to its distance from the handle-bar and the saddle, and the forearm-bar being adjustable in  
20 height in relation to the handle-bar and sad-

dle, and having facility of turning about the axis of its supporting-stem, and being adjustably connected to the handle-bar in such relation thereto as to enable the cyclist, while having hold of the handle-bar, and without  
25 interfering with his control of the steering-gear, by taking a forward or an upward bearing against the forearm-bar, to increase his normal driving or retarding power as occasion may require, and also as to serve to support  
30 his forearms and rest his body if required while traveling under ordinary circumstances, and as an auxiliary means of steering the cycle, as set forth.

Signed at London, England, this 21st day  
of November, 1896.

THOMAS HARGREAVES BRIGG.

Witnesses:

C. A. DAY,

ARTHUR WILLIAM MORETON.