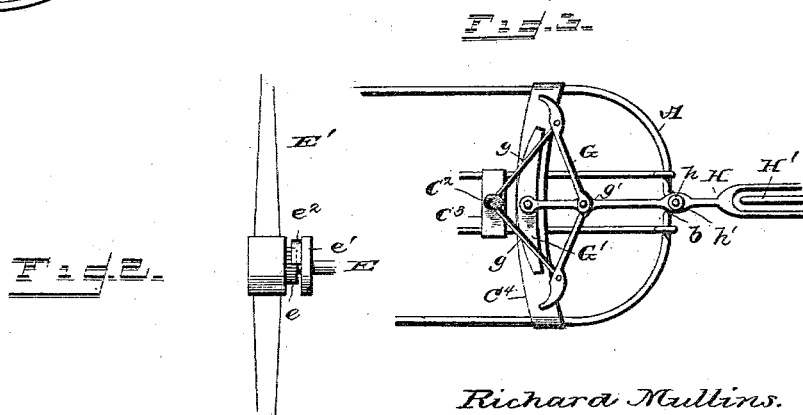
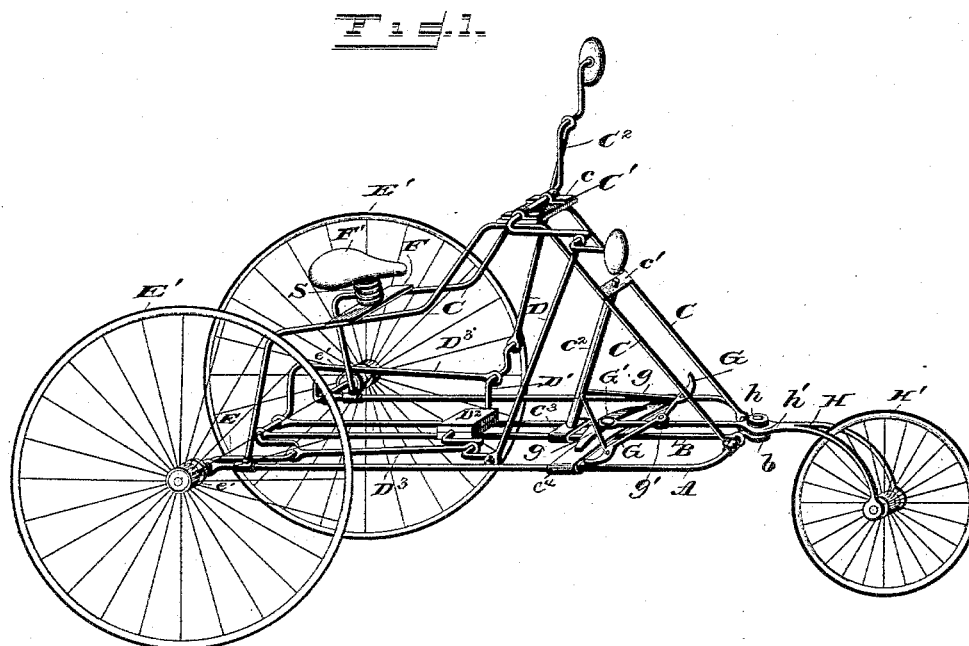


(No Model.)

R. MULLINS.
TRICYCLE.

No. 381,504.

Patented Apr. 17, 1888.



Richard Mullins.

WITNESSES.

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UNITED STATES PATENT OFFICE.

RICHARD MULLINS, OF NEWARK, INDIANA.

TRICYCLE.

SPECIFICATION forming part of Letters Patent No. 381,504, dated April 17, 1888.

Application filed December 2, 1887. Serial No. 256,832. (No model.)

To all whom it may concern:

Be it known that I, RICHARD MULLINS, a citizen of the United States of America, residing at Newark, in the county of Greene and State of Indiana, have invented certain new and useful Improvements in Tricycles; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to certain new and useful improvements in tricycles; and it consists in the novel construction and arrangement of the parts thereof, which will be hereinafter fully described, and particularly pointed out in the claims.

The object of my invention is to provide a tricycle the parts of which are readily actuated by hand-power and the steering mechanism controlled by the feet of the rider, said machine being of light and durable construction, easily handled and readily understood, and comparatively inexpensive in its manufacture. I attain this object by the machine illustrated in the accompanying drawings, wherein like letters of reference indicate similar parts in the several views, and in which—

Figure 1 is a perspective view of my improvement. Fig. 2 is a detail view in elevation of a portion of one of the road-wheels, showing a ratchet mechanism in connection therewith to prevent a back movement. Fig. 3 is a top plan view of the steering mechanism, parts of the frame being broken away to clearly illustrate said construction.

A indicates the main supporting-frame, which is of skeleton form, constructed of metallic rods or piping, having central reaches, B, connected to the forward part thereof and extending to the rear.

To the forward portion of the frame A two upwardly-extending inclined brace-rods, C C, are secured, which are formed with level bearing-surfaces at their upper portion and from thence extend downwardly or incline into an angle of lesser incline to receive a cross-strip, F, upon which the seat or saddle F' is mounted, and from said cross-strip F extends downward

and is again connected to the rear portion of the frame A.

Uniting the inclined braces C is a cross-strip, c', and below said cross-strip c' a metallic clip, c², is mounted upon the reaches B, the said cross-strip c' and clip c² being united by a brace, c³. Upon the upper level portion of the braces C a cross-strip, C', is mounted, which is provided with metallic boxes c, which inclose and give bearing to the crank-handles C². The said crank-handles have connecting-bars D secured thereto, which extend downward and are secured to a crank-shaft, D', which has bearing in a box, D², mounted on the reaches B. The crank-shaft D' is bent into angular form to accommodate the connection of the several parts thereto, and to one set of angular bends thereof connecting-rods D³ are secured and extend to the rear of the machine, where they are connected to the main crank-shaft E, upon the outer projecting ends of which the road-wheels E' are mounted. By this means it will be seen that the said wheels E' are revolved by the action of the crank-handles C², motion being imparted thereto through the connecting-rods D and D³ and the crank-shaft D'.

Connecting the two forward sides of the frame A is a cross-strip or enlarged metallic clip, c', upon which a center piece, G', of the steering mechanism has movement and partial bearing. From the sides of the brace c², and extending forward therefrom, two braces, g, are secured at their rear ends and pivotally attached at their forward ends to a foot-bearing, G, which is formed with end bends to accommodate the reception of the feet of the rider. This foot-bearing G is pivotally connected to the rear extension of the steering-fork H, as shown at g'.

The front portion of the frame A is provided with an eye, b, and the fork H with an eye, h'. The eyes b and h' are mounted relatively to each other, as shown, and united by a coupling stud or pin, h. The forward forked ends of the fork-steering bar or rod H inclose a steering-wheel, H', in the manner which is readily understood by those skilled in the art.

When the operator or rider presses upon one side of the steering-bar G, the center piece,

G', travels on the clip c^4 and turns the steering forked bar H, and consequently the steering-wheel H', upon the fulcrum formed by the eyes b and b' , coupled by the stud or pin h .
 5 Through the medium of the central piece of guide G' bearing upon the clip c^4 the steering action is steady in its movement, as will be readily understood. It will also be understood that the wheels are provided with suitable rubber tires, as is ordinarily the construction.
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In connection with each one of the rear or road wheels, E', a ratchet mechanism is provided, and consists, essentially, of a ratchet-wheel, e , which is secured to each of the wheels E', and of a disk, e' , secured to the shaft E adjacent to the wheels E', the said disks e' carrying spring-actuated pawls e^2 . By this construction a forward movement of the wheels is at all times allowed, while a backward movement thereof is prevented.
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The novelty and utility of my improvement being obviously apparent, it is unnecessary to enlarge upon the same herein.

25 I claim—

1. The combination of the skeleton frame A, the central reach-bars, B, the forwardly-inclined braces C, bent in the shape as shown, carrying a cross-piece at their upper portions, 30 with suitable journal-boxes thereon for the reception of the crank-operating handle, in connection with the crank-shaft of the road-wheels, as set forth, and with a saddle mounted in their rear portion above the mechanism of the machine, a steering mechanism, as set 35 forth, having a rear central guide-piece, G',

moving upon a clip, c^4 , uniting the parts of the frame A, a bifurcated steering-fork fulcrumed in the front end of the frame A and carrying a steering-wheel, H', and the braced steering-bar G, connected to the steering-fork H and to the guide G', substantially as described.
 40

2. The combination, with the main frame A, having the upwardly-extending braces C, provided with the cross-piece c' , of the lower cross-piece or clip, c^3 , on the reaches B, the uniting-brace c^2 , the cross-piece C', carrying journal-boxes c , the crank-handles C', mounted in said journal-boxes c , the saddle F', mounted upon the cross strip on the rear bent portion of the braces C, the connecting-rods D, the crank-shaft D', passing through a journal-box, D', on the reaches B, the connecting-rod D', the rear main crank-shaft, E, the road-wheels E', the ratchet mechanism mounted relatively between said main crank-shaft and the road-wheels, the front clip, c^4 , the foot-piece G, having braces g , the steering-fork H, fulcrumed in the forward part of the main frame A, and carrying a steering-wheel, H', as shown, to the rear central guide or center piece, G', moving on the clip c^4 , substantially as described.
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In testimony whereof I affix my signature in presence of two witnesses.

his
 RICHARD X MULLINS.
 mark.

Witnesses:

BENTON GOODEN,
 LEVI PRYOR.