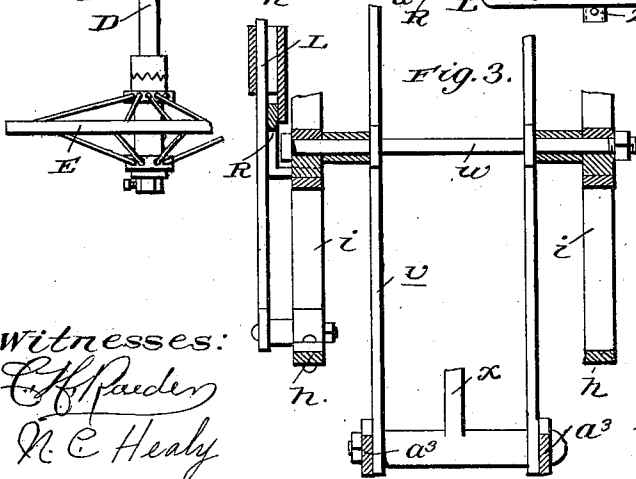
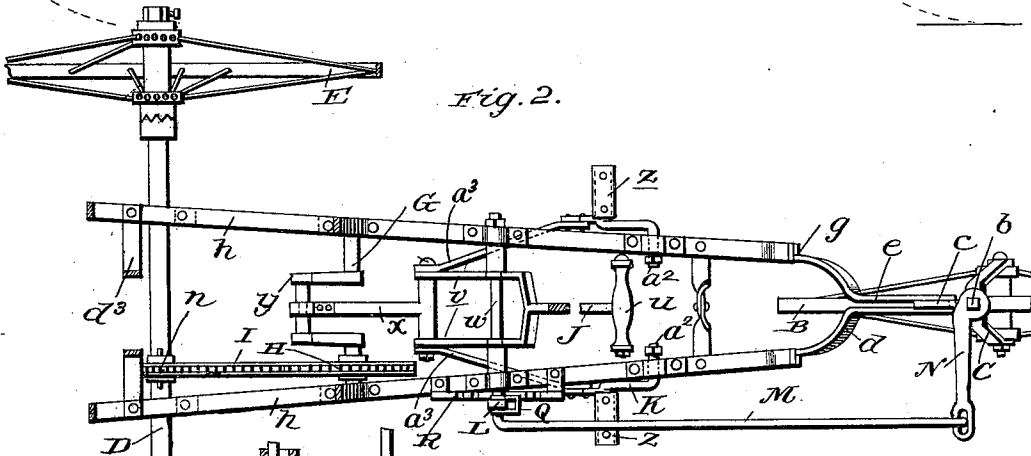
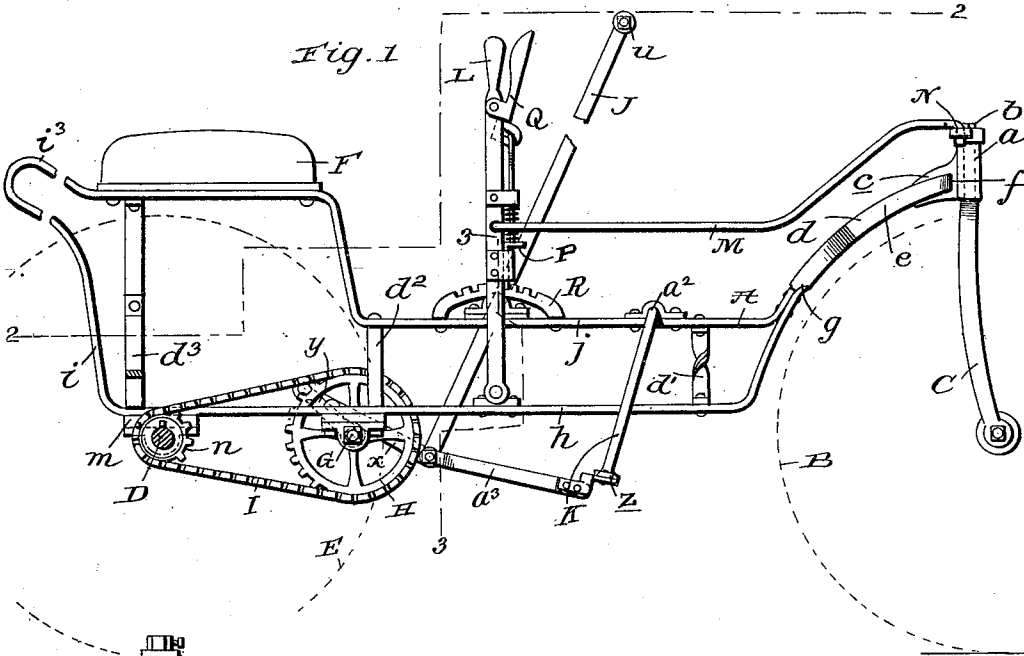


J. T. ANDREEN.
TRICYCLE.

(Application filed June 12, 1900.)

(No Model.)



Witnesses:
C. H. Raeder
N. C. Healy

Inventor
John T. Andreen
 By *James Sheehy*
 Attorney

UNITED STATES PATENT OFFICE.

JOHN T. ANDREEN, OF FLORENCE, KANSAS.

TRICYCLE.

SPECIFICATION forming part of Letters Patent No. 664,231, dated December 18, 1900.

Application filed June 12, 1900. Serial No. 20,056. (No model.)

To all whom it may concern:

Be it known that I, JOHN T. ANDREEN, a citizen of the United States, residing at Florence, in the county of Marion and State of Kansas, have invented new and useful Improvements in Tricycles, of which the following is a specification.

My invention relates to improvements in tricycles; and it consists in the peculiar construction, certain novel combinations, and the adaptation of parts hereinafter described, and particularly pointed out in the claim appended.

In the accompanying drawings, Figure 1 is a side elevation of my improved tricycle with the wheels shown by dotted lines. Fig. 2 is a horizontal section taken on the broken line of Fig. 1. Fig. 3 is an enlarged detail transverse section taken on the broken line 3 3 of Fig. 1.

In the said drawings similar letters of reference designate corresponding parts in all the several views, referring to which—

A is the main frame of my improved tricycle; B, the front or pilot wheel; C, the front fork, in which wheel B is mounted after the usual manner; D, the rear axle or drive-shaft, and E the rear wheels thereon.

The main frame in the preferred embodiment of the invention comprises a head-tube *a*, adapted to receive the stem *b* of fork C and having a rearwardly-extending portion *c*, a metallic strap *d*, and braces *d'*, *d''*, and *d'''*. The strap *d* is looped and curved, as indicated by *e*, and passed through a transverse aperture *f* in the portion *c* of the tube *a*, to which it is preferably connected by brazing or other suitable means. It is also twisted, as indicated by *g*, and in addition to the curved loop *e* comprises the lower longitudinal and horizontal portions *h*, the portions *i*, which extend upwardly from the rear ends of the portions *h* and thence forwardly and downwardly and are designed to support a seat F, and the upper longitudinal and horizontal portions *j*, which are connected at their forward ends by bolts or other means to the main portions of the strap adjacent to the twists *g*, as shown. The portions *i* are provided with upwardly and rearwardly extending loops *i'*, which render them springy

and enable them to comfortably support the rider. The braces *d'* are disposed diagonally and interposed between and connected to the portions *h j* of the strap *d*, while the braces *d''* are upright and stand between and are connected to the portions *h j* of the strap *d* at about the distance shown in rear of the braces *d'*. The braces *d'''* are also disposed diagonally and are interposed between and connected to the portions *h i* of strap *d*, so as to assist in supporting the rider on the seat F. The frame constructed in the manner described is obviously very inexpensive and light, and yet is springy and strong and thoroughly capable of supporting the weight which such frames are expected to carry and of withstanding the shocks and strains to which they are ordinarily subjected.

The axle or drive-shaft D is journaled in suitable bearings *m* on the portions *h* of the frame-strap *d* and is provided adjacent to its middle with a sprocket-wheel *n* and at its ends with traveling wheels E.

G is a transverse crank-shaft journaled in suitable bearings on the lower portions *h* of the frame-strap *d* and carrying a sprocket-wheel H.

I is a sprocket-chain passed around and adapted to transmit motion from the sprocket-wheel H to the sprocket-wheel *n* on the shaft or axle D, and J is a hand-lever for rotating the shafts G and D and propelling the machine. The said hand-lever is preferably provided with a T-handle *u* at its upper end and has its lower portion bifurcated, as indicated by *v*, and fulcrumed on a transverse rod *w*, connected to and extending between the upper portions *j* of the frame-strap *d*. The lower end of its bifurcated portion is connected by a rod *x* with the crank *y* of shaft G, whereby it will be seen that when it is rocked by the rider the said shaft will be rotated and the machine propelled.

In order to enable the rider to use his feet as well as his hands in propelling the machine, the pedal-levers K are provided. These levers have pedals *z* at their lower ends and lateral arms *a'*, which latter are journaled in suitable bearings on the upper portions *j* of the frame-strap *d*. Their lower ends are connected by links *a''* with the lower end of the

hand-lever J, as best shown in Figs. 2 and 3, so as to enable them to work in concert with said hand-lever.

5 It will be readily observed from the foregoing that through the medium of the hand-lever J and pedal-levers K the rider is enabled to propel the machine at a high rate of speed over all kinds of road with but a minimum amount of effort, this latter being due to the
10 leverage afforded.

L is an upright hand-lever pivotally connected to and rising from the lower right-hand portion *h* of the frame-strap *d* and connected by a rod M to a crank N on the stem *b* of the
15 fork C. Said lever L is adapted to be rocked to turn the pilot-wheel B and guide the machine and is provided with a spring-pressed detent P, connected with the usual pivoted handpiece Q and arranged to engage a seg-
20 mental rack R, fixed on the upper right-hand portion *j* of the frame-strap *d*. By virtue of this construction it will be observed that the pilot-wheel may be quickly and easily ad-
25 justed to and secured at various angles according to the course which it is desired to have the machine take, thus leaving both hands of the rider free to drive or operate the upright hand-lever; also, that the pilot-
30 wheel may be readily released and moved by the rider on the seat F.

I have entered into a detail description of the construction and relative arrangements

of the several parts of my improved tricycle in order to impart a full, clear, and exact understanding of the same. I do not desire, 35 however, to be understood as confining myself to such specific construction and arrangement of parts, as such changes or modifications may be made in practice as fairly fall within the scope of my claim. 40

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

In a tricycle, a frame comprising a head-tube, the strap *d* connected to the head-tube, 45 and having the lower longitudinal portions *h*, the portions *i* extending upwardly from the rear ends of the portions *h* and thence forwardly and downwardly, and provided intermediate of their rear upright portions, and 50 horizontal portions with loops *i*³, and the upper longitudinal portions *j* connected at their forward ends to the main portions of the strap, and suitable braces interposed between the lower and upper horizontal portions of 55 the strap, substantially as specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN T. ANDREEN.

Witnesses:

W. R. MUNROE,

J. G. MEIERDIRCKS.