

No. 618,580.

Patented Jan. 31, 1899.

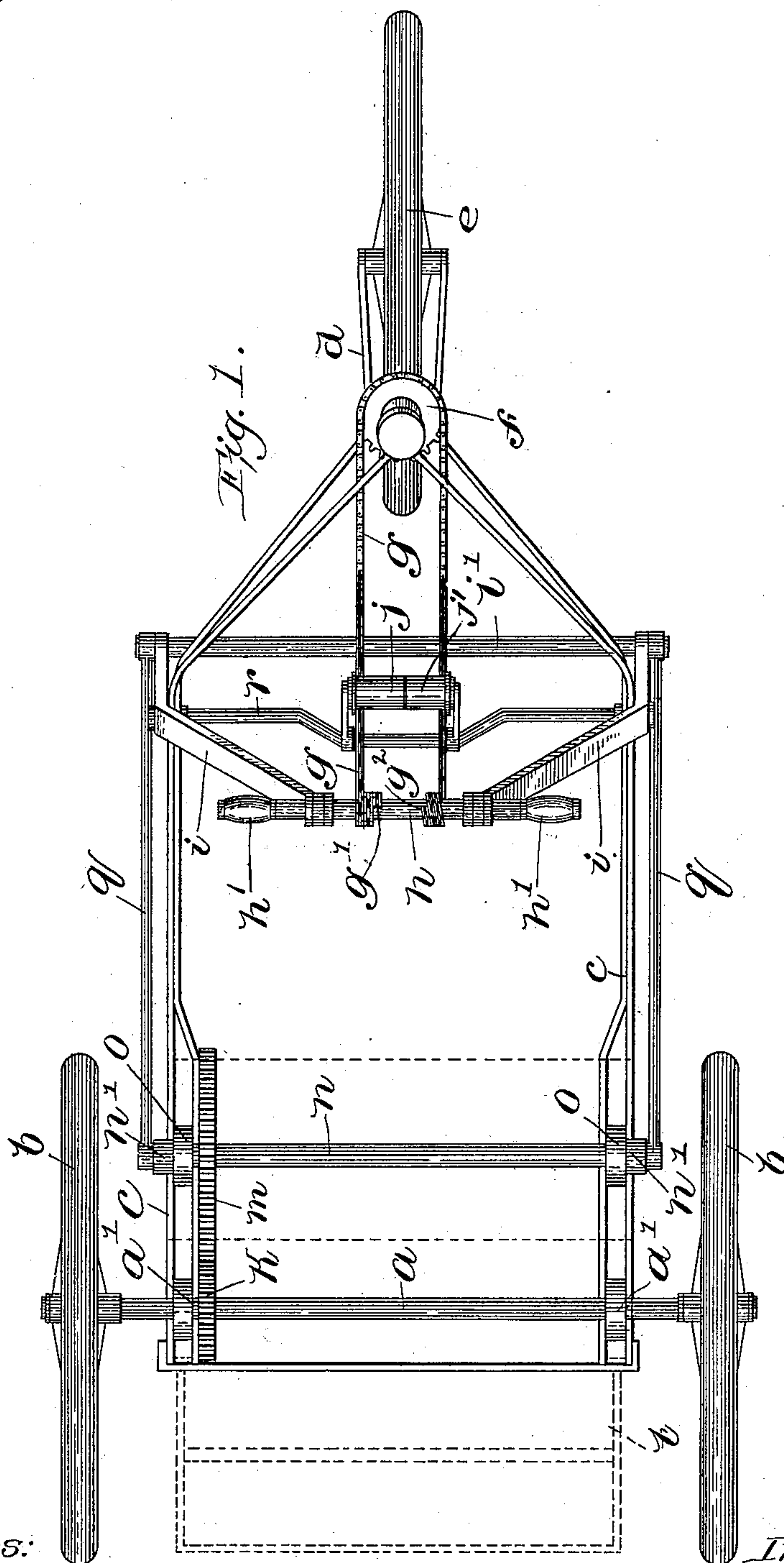
G. R. PAINE.

TRICYCLE.

(Application filed May 9, 1898.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses:

A. D. Harrison

P. W. Pezzetta

Inventor:

George R. Paine

By Knight Brown & Quincy
Attys.

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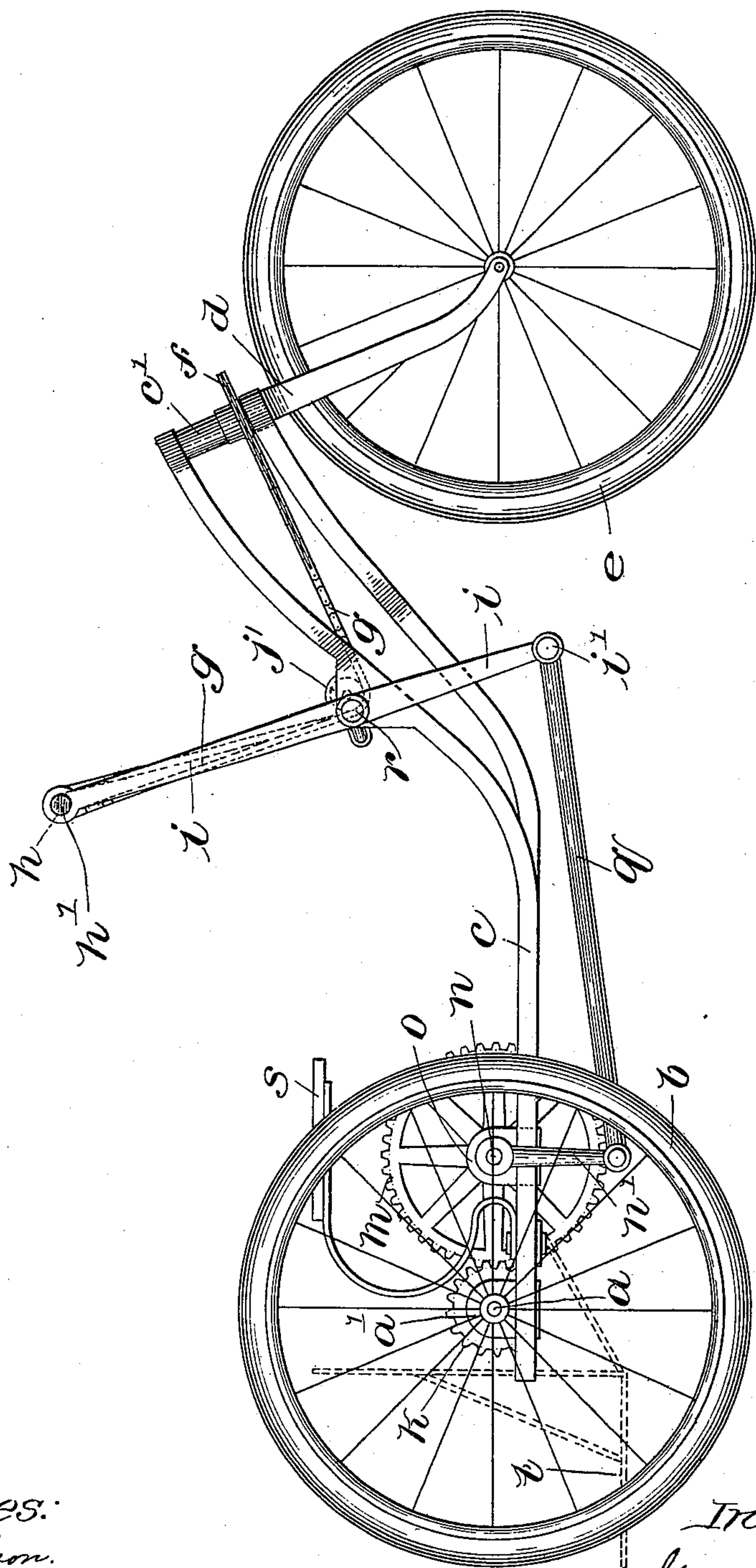


Fig. 2.

Witnesses:

A. D. Harrison.

P. W. Pezzette.

Inventor:

George R. Paine

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UNITED STATES PATENT OFFICE.

GEORGE R. PAINE, OF BRIDGEWATER, MASSACHUSETTS.

TRICYCLE.

SPECIFICATION forming part of Letters Patent No. 618,580, dated January 31, 1899.

Application filed May 9, 1898. Serial No. 680,110. (No model.)

To all whom it may concern:

Be it known that I, GEORGE R. PAINE, of Bridgewater, in the county of Plymouth and State of Massachusetts, have invented certain
5 new and useful Improvements in Tricycles, of which the following is a specification.

This invention relates to vehicles adapted to be propelled by the joint action of the hands and feet of the rider, and has for its
10 object to provide a simple vehicle of this class adapted to be easily and comfortably propelled.

The invention consists in the improvements which I will now proceed to describe and
15 claim.

Of the accompanying drawings, forming a part of this specification, Figure 1 represents a top plan view of a tricycle embodying my improvements. Fig. 2 represents a side ele-
20 vation of the same.

In the drawings, *a* represents the rear axle of my improved vehicle, the same being journaled in suitable bearings *a' a'* on the frame *c* and provided with wheels *b b*, one of which
25 is fastened to the axle, while the other runs loosely thereon. If desired, the wheels may be provided with pneumatic tires.

The frame *c* is provided at its forward end with a head or bearing *c'* for the steering-fork *d*, the latter being provided with the steering-wheel *e*. To the fork *d* is affixed a sprocket-wheel *f*, connected by a chain *g* with a handle-bar *h*, which is mounted to turn in bearings in the operating-levers *i i*, hereinafter
30 described. The ends of the chain *g* are connected at *g' g²*, Fig. 1, with the handle-bar. The chain passes from the point *g'* on the handle-bar under an idle pulley *j*, mounted on the supporting-frame, to the wheel *f*, and
40 from thence back under another idle pulley *j'* to the point *g²*. The portion of the chain extending from the point *g'* is coiled upon the handle-bar in one direction, while the portion of the chain terminating at the point *g²* is
45 coiled upon the handle-bar in the opposite direction, so that a rotation of the handle-bar in its bearings will wind up one end of the chain and unwind the other, thus imparting movement to the chain and to the steering-fork required to steer the machine.

To the driving-axle *a* is affixed a gear-wheel *k*, with which meshes a gear-wheel *m*, affixed

to the shaft *n*, journaled in bearings *o o* on the frame *c*. To the ends of the shaft *n* are affixed cranks *n' n'*, which are connected by
55 rods *q q* with the operating-levers *i* above mentioned. These levers are mounted to oscillate upon a horizontal rod *r*, affixed to the supporting-frame. The handle-bar *h* is journaled in the upper ends of the levers *i i*, and
60 the lower ends of said levers project below the rod or fulcrum *r* and are connected by a horizontal rod *i'*, which serves as a rest for the feet of the rider. The arms of the levers *i i* are so proportioned relatively to the cranks
65 *n'* that when the levers *i* are oscillated on the fulcrum *r* the cranks *n'* will be revolved and will rotate the shaft *n* and gear *m*, the latter imparting a rotary motion to the gear *k* and driving-shaft *a*.
70

s represents a seat which is arranged so that the rider sitting on the seat can conveniently grasp the handles *h' h'* and at the same time rest his feet on the cross-bar *i'*, connecting the lower ends of the levers *i*.
75

The machine is operated by an oscillating movement of the rider's body, power being imparted through both his hands and his feet to the lever *i*. The steering of the vehicle is effected by partially rotating the handle-bar
80 in its bearings, as above set forth.

It will be seen that the described vehicle is simple in construction and that the driving mechanism is arranged so that the muscle power of the rider can be very advantageously
85 exerted, so that the vehicle can be driven with comparatively little fatigue on the part of the rider.

I do not limit myself to the details of construction here shown, and may variously modify the same without departing from the spirit of my invention.

I have shown in dotted lines a detachable luggage-carrier *t* attached to the rear portion of the frame *c*.
95

The two connected levers *i i* may be considered as one operating-lever.

I claim—

1. A vehicle of the character specified, comprising a driving-axle, a seat, two levers fulcrumed side by side on the frame of the vehicle, a handle-bar journaled in bearings in the upper ends of said levers, a foot-supporting cross-bar connecting the lower ends of the
100

levers, driving connections between the le-
vers and the driving-axle, a steering-fork hav-
ing a steering-wheel, and connections between
said fork and the handle-bar whereby rotary
5 movements of the handle-bar are caused to op-
erate the steering-fork.

2. A vehicle of the character specified, com-
prising a driving-axle, a seat, two levers ful-
crumed side by side on the frame of the ve-
10 hicle, a handle-bar journaled in bearings in
the upper ends of said levers, a foot-support-
ing cross-bar connecting the lower ends of the
levers, driving connections between the le-

vers and the driving-axle, a steering-fork hav-
ing a steering-wheel, a sprocket-wheel affixed 15
to the fork, a chain engaged with said sprocket-
wheel, and having its ends engaged with and
reversely wound on the handle-bar, and idle-
pulleys arranged to guide the chain between
the fork and handle-bar. 20

In testimony whereof I have affixed my sig-
nature in presence of two witnesses.

GEORGE R. PAINE.

Witnesses:

HENRY MULLEN,
ALICE M. BOUTELLE.