

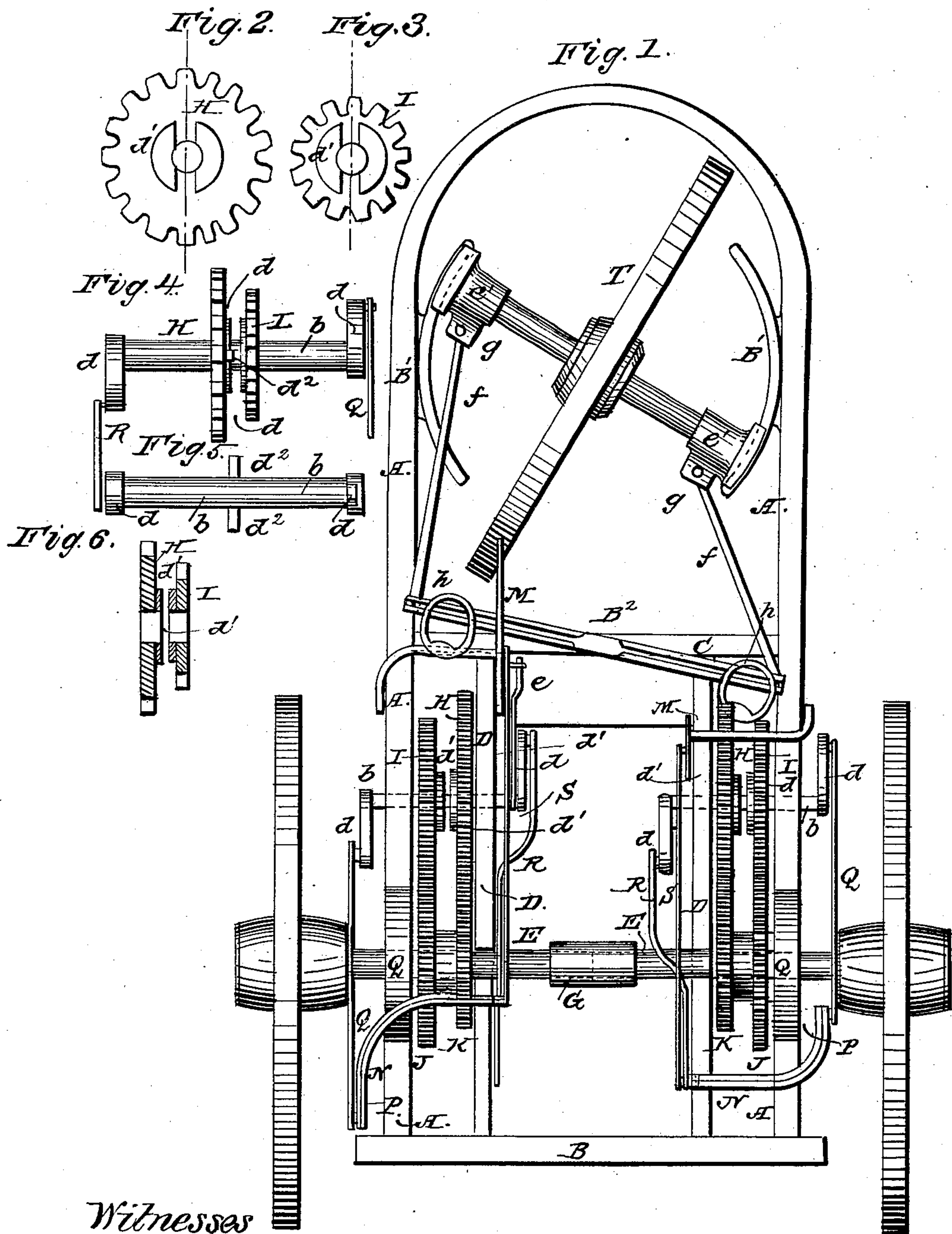
S. NISLOSDUFF.

2 Sheets—Sheet 1.

Velocipede.

No. 102,423.

Patented April 26, 1870.



Witnesses

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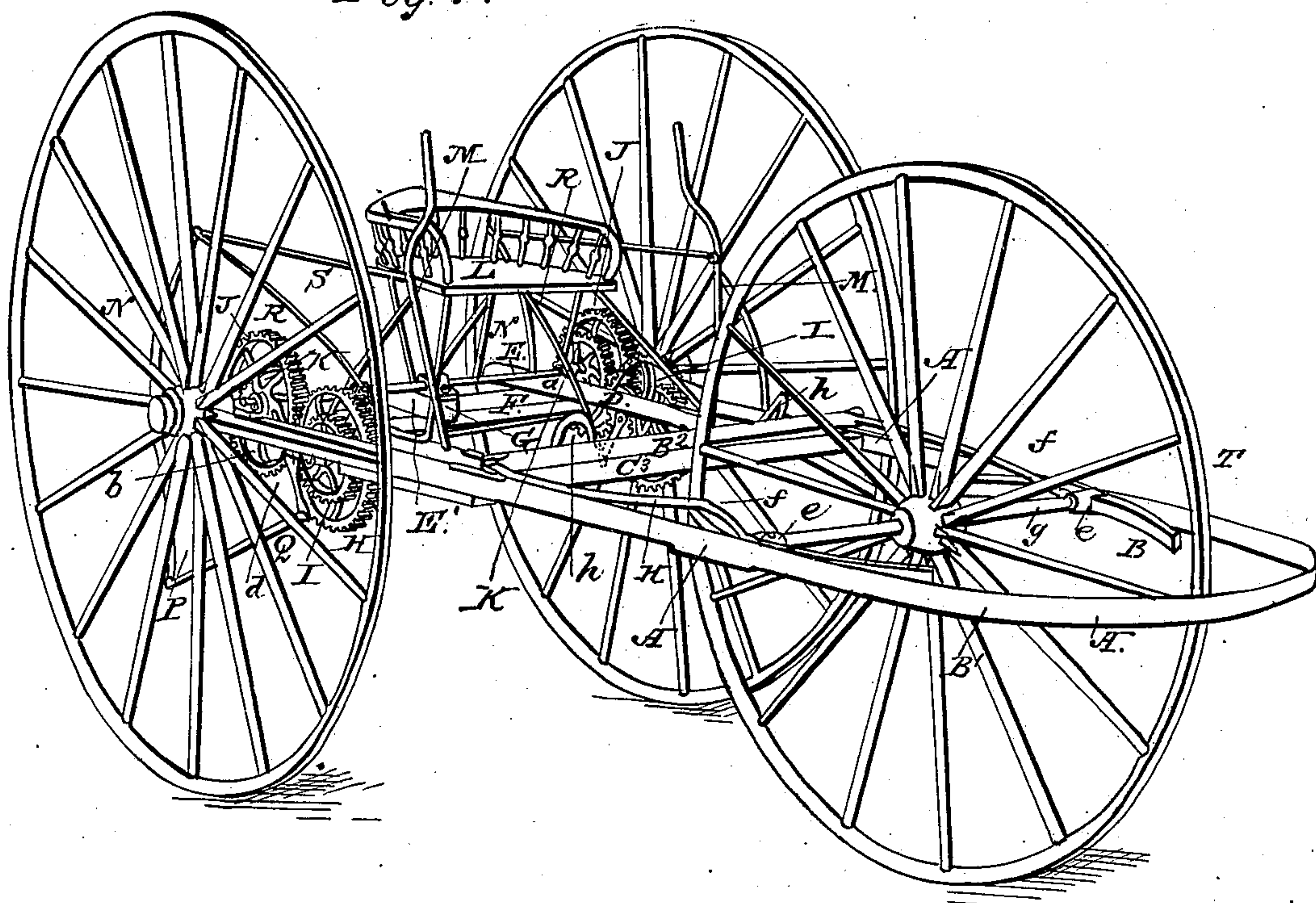
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*Fig. 7.*



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# United States Patent Office.

STAS NISLOSDUFF, OF LOWELL, MASSACHUSETTS.

Letters Patent No. 102,423, dated April 26, 1870.

## IMPROVEMENT IN VELOCIPEDES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, STAS NISLOSDUFF, a native of Canada, at present and for four years last past residing in Lowell, in the county of Middlesex and State of Massachusetts, and having legally declared my intention to become a citizen of the United States, have invented certain new and useful Improvements in "Three-Wheeled Vehicles or Velocipedes", of which the following is a full, clear, and exact description, reference being had to the accompanying drawings making part of this specification, in which—

Figure 1, sheet 1, is a plan or top view after the seat L has been removed.

Figures 2 and 3 represent the inner ends of the clutch-gears H and I, having slotted hubs  $d^1$ .

Figures 4 and 5 are different elevations of one of the crank-shafts  $b$ , the former having the clutch-gears thereon, and the latter showing the stationary transverse key  $d^2$  which connects either of the gears H or I with the shaft  $b$ .

Figure 6 shows a section of the two latter gears.

Figure 7, on sheet 2, represents a perspective elevation of my machine.

In the accompanying drawings—

A A are the sides of a suitable frame-work, to the rear ends of which is applied a cross-bar, B, and between the center portions a similar cross-bar, C. The forward ends may be connected by a bar, or the sides and forward end may be in one continuous piece bent and connected with the cross-bars, as shown in the drawings.

Longitudinal girts D are supported between the cross-bars B and C at each side of the vehicle, and these girts and the sides A form supports for the bearings of the shafts, axles, and most of the connecting and operating devices.

Directly under the hind axles E and E', is a cross-girt, F, which supports a box, G, or central connection of the inner ends of the hind axles, the outer ends or portions running in boxes or bearings  $a$  secured to the top of each of the sides A.

Forward of the axles E, and beneath the sides A and girts, D, and at each side of the vehicle, I arrange a short shaft,  $b$ , to each end of which I affix a crank,  $d$ , and to the central portion a pair of clutch-gears, H and I, one larger in diameter than the other.

The inner hubs  $d^1$  of each of these gears are slotted, as shown in figs. 2 and 3, to receive a transverse key,  $d^2$ , projecting from one or more sides of each crank-shaft  $b$ .

Each of the last-named shafts is movable endwise by a forked lever,  $e$ , pivoted near its center and engaging with the shaft, so as to throw or move it, and disengage the clutch-key from one gear and bring it into the slot of the other, or *vice versa*.

Two gears, J and K, like those on each of the crank-shafts, are arranged on each of the hind axles, and these latter gears engage with the gears first named, the larger gear on each axle with the smaller one on the crank-shaft.

Forward of the seat L, and at each side of the vehicle I employ a single or a forked lever, M, the lower end pivoted to the girt D, or to the latter and the side A. The top end of each of these levers rises above the seat, convenient for the grasp of the hand of the operator or rider.

At a short distance forward of the rear cross-bar B, and pivoted to the frame-work at each side of the vehicle, is a lever, N, having one depending arm P, which is flattened, to form a spring lever.

To the lower end of each of these spring levers, and to each outer crank  $d$ , I apply a connecting-rod, Q, and to the top end of the rear lever N, and extending to the inner crank  $d$  obliquely, a connecting-rod, R.

This forms a suitable operating connection of each rear lever N and the crank-shafts and gears, but, to form an operating connection with the actuating or operating-levers M, I apply a third connecting-rod, S, one end of which is pivoted to the top of the rear lever N, and the other end to about the middle of the operating-lever, thus forming a full and complete connection of all the operating devices by which the motive power is applied, and this is done by simply grasping the top ends of the levers M, and by forcibly moving them forward and back alternately or simultaneously.

The larger and the smaller gears on the crank-shafts and axles are for changing the speed and the power, and this is done by moving or sliding each crank-shaft endwise by means of a pivoted lever,  $e$ , thus disengaging the key  $d^2$  from the slotted hub of one gear, and causing it to engage with that of the other.

Between the frame-sides A, at the forward part of the vehicle, a steering wheel, T, is hung on an axle supported in bearings  $e'$ , and these bearings are slotted and slide on curved segments B<sup>1</sup> secured to the frame-sides A.

Ears  $g$  project from the rear side of each bearing  $e'$ , and a connecting-rod,  $f$ , pivoted at one end to an ear, and at the other end to a cross-bar or whiffletree, B<sup>2</sup>, furnishes requisite means for steering the vehicle, the whiffletree being pivoted at its center to the center of the cross-bar C, and movable by stirrups  $h$  secured to the rear or top side of the last-named cross-bar.

Sitting upon the seat L the rider grasps the handles or top ends of the operating-levers M with the hands, and operates them and the other operating parts as before described, and with his heels or feet on the stirrups  $h$  moves the whiffletree in either direction of its horizontal swing, and, by means of the connecting-rods  $f$ , turns the wheel T in either direc-



tion to guide the vehicle to the right or left, whether running forward or backward.

It will be seen and understood that the vehicle herein shown and described is a double machine, or a machine having two sets of operating mechanisms or devices, except the steering mechanism, each operating, propelling, or actuating mechanism being independent of the other, and each, or either, capable of propelling action while the other is at rest, or, if temporarily disabled, and each capable of adjustment to increase or diminish the speed or the power by sliding the crank-shaft endwise in the bearings and in the loose-fitting gears thereon.

The gears on each axle E are firmly secured thereto, and always rotate with their respective axle, while the clutch-gears on each crank-shaft are the drivers, and are connected with the shaft for action or propulsion by the clutch-key  $d^2$ , as before described.

I contemplate that skillful artizans may modify my invention and improvements in various ways, and adapt them to the circumstances in which they may use them and still retain the merits and principles which I have invented, and that the steering-wheel T may be placed so much nearer to the seat of the rider as to bring the axle-bearings  $e'$  within reach of his feet, so that he may steer the vehicle by placing his feet on said axle-bearings, and dispense with the whiffletree and the connecting-rods  $f$ , if preferred that way.

I also contemplate the application of a second seat, or seats, to the rear or forward of the seat L, and the

extension of the top ends of the rear levers N to form operating-levers for a second or other rider on the rear seat, and that a seat or seats arranged at the sides and partly or wholly over the steering-wheel may be occupied by a rider or riders, who may aid in driving the vehicle by grasping the top ends of the levers M, and exerting strength or power thereon in connection with the rider on the seat L.

I believe I have described and represented the improvements which I have invented, so as to enable any person skilled in the art to make and use them without further invention or experiment.

I will now state what I desire to secure by Letters Patent, viz:

1. The combination of the levers M and N, the spring lever P, connecting-rods Q, R, and S, crank-shaft  $b$ , cranks  $d$ , clutch-gears H and I, key  $d^2$  and gears J and K, with the axles E, all combined and arranged to operate substantially in the manner and for the purpose specified.

2. The lever  $e$ , in combination with the crank-shaft  $b$ , and with the clutch-gears, in the manner and for the purpose set forth.

3. A three-wheeled vehicle or velocipede as described, all the parts of which are constructed, combined, and arranged to operate substantially as and for the purpose specified.

STAS NISLOSDUFF.

Witnesses:

JOHN E. CRANE,  
J. L. WHITNEY.