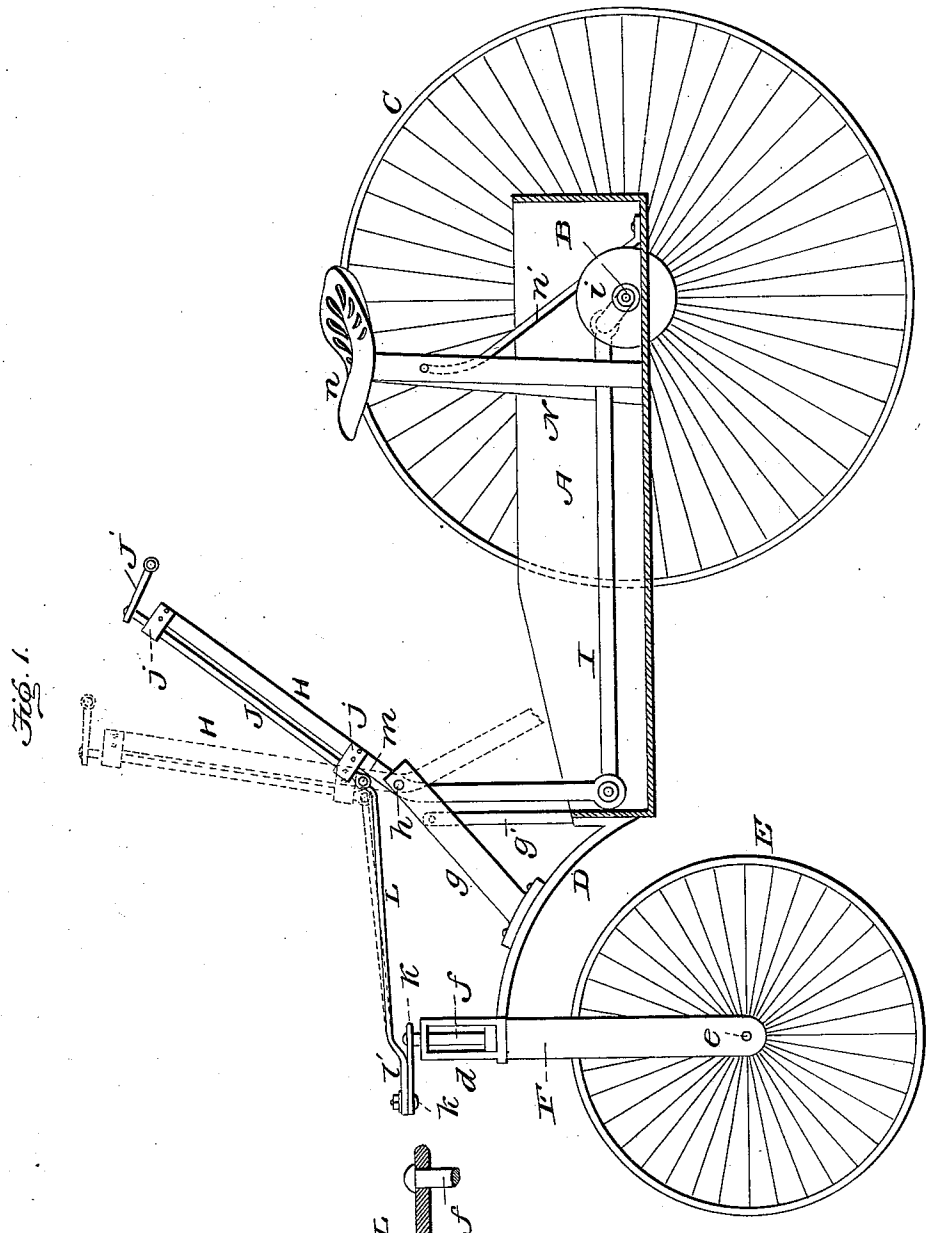
(No Model.)

N. NEWMAN.

VELOCIPEDE.

No. 561,270. Patented June 2, 1896.



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UNITED STATES PATENT OFFICE.

NELSON NEWMAN, OF SPRINGFIELD, ILLINOIS, ASSIGNOR OF TWO-THIRDS TO SAMUEL J. WILLETT AND GEORGE A. SANDERS, OF SAME PLACE.

VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 561,270, dated June 2, 1896.

Application filed July 25, 1894. Serial No. 518,533. (No model.)

To all whom it may concern:

Be it known that I, NELSON NEWMAN, a citizen of the United States, residing at Springfield, in the county of Sangamon and State of Illinois, have invented certain new and useful Improvements in Velocipedes; and I do hereby declare that the following is a full, clear, and exact specification, 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, forming a part hereof, and in which—

Figure 1 is a side elevation, partly in section, of my invention. Fig. 2 is a detail sectional view through the arm on the head of the steering-fork and the link between the steering-fork and the rock-shaft of the handle-bar.

The nature of this invention is a velocipede designed to be propelled in the style of the "rowing motion," in which the power is exerted by the arms of the rider and to be applied to a rocking lever which is connected with the rear driving-axle of the machine, and with this rocking lever is combined a rock-shaft provided at its upper end with a handle-bar, said rock-shaft being journaled on the rocking power-lever to play back and forth therewith when the machine is propelled; but said shaft is capable of being turned in its bearings in either direction to steer the machine. To control the position of the steering-fork and front wheel of the velocipede, a link is provided between the handle-bar shaft and the stem of the steering-fork, the hind end of the link being pivoted on a horizontal bolt to the lower end of the handle-bar shaft and the front end of this link being provided with a slot in which plays a vertical stud, pin, or bolt attached to an apron which is fixed to the spindle or stem of the steering-fork, said arm projecting forward beyond the steering-fork.

My machine is especially intended as a three-wheel velocipede and to carry or transport packages and general merchandise, for which purposes the frame of the machine is constructed with a box or receptacle which is hung at its rear end on the rear axle and its front end fixed to a bracket which extends forward to the steering-fork, the spindle of the latter being journaled in a head formed in the said bracket.

Referring to the drawings, A designates the box or receptacle of my improved velocipede, which is preferably made of the oblong form shown by Fig. 1 and which lies between the two rear wheels and extends from the rear axle to a point in rear of the front wheel. The rear portion of this receptacle is furnished with bearings (not shown) in which is journaled the rear axle B, on the end of which are provided the rear wheels C, only one of which is shown in Fig. 1. To the front end of this receptacle is fastened a bracket D, which extends forward and upward over the front wheel E, and this bracket D terminates in or is provided with a head *d*, in which head is journaled the stem or spindle *f* of the vertical steering-fork F, the latter being provided with an axle *e*, on which is fitted the front wheel E.

The bracket D is furnished with a fixed arm or support *g*, which preferably inclines backward over the front end of the receptacle A, and to the upper free end of this support is fulcrumed a rocking power-lever H. This power-lever is preferably bent at an intermediate point of its length, and through the angular part of the said upright lever is passed a horizontal bolt or shaft *h*, which serves as the fulcrum of the power-lever and connects said lever and support *g* together.

The lower end of the power-lever extends into the receptacle A; but sufficient play is provided for the lower end of the lever to prevent it from striking the front wall of the receptacle, and to said lower end of the power-lever is pivoted the front end of a horizontal pitman I, which extends longitudinally within the receptacle A, the rear end of this pitman being connected to a wrist-pin on the crank-disk *i* or to any other suitable mechanical contrivance for converting the reciprocating motion of the pitman into rotary motion and applying the same to the rear axle B in order to effect the propulsion of the machine. The upper part of the upright power-lever is furnished with the bearings *j j*, in which is journaled the rock-shaft J, and to the upper end of this rock-shaft is

secured the handle-bars J', by which the lever H can be rocked and the shaft J turned in its bearings.

The stem or spindle *f* of the steering-fork is provided with a horizontal arm K, which extends forwardly beyond the head *d* and spindle *f*, and which arm has its rear end rigidly fastened to the spindle, and this arm K is provided with a stud, pin, or bolt *k*, that fits in and plays in a slot *l* at the front flat part *l'* of the link L, said front flat end *l'* of the link lying upon the arm K. The rear end of this link L is connected to the lower end of the rock-shaft J by a horizontal pivot or bolt *m*, and when the lever H is pushed forward by the power of the rider's arms applied to the handle-bar this end of the link turns on the pivot *m* and the link is slightly lifted, as shown by dotted lines in Fig. 1, the connection afforded by the bolt or slot *k l* between the arm K and link L permitting this slight elevation of the link on the forward thrust of the power-lever.

The rock-shaft J can be turned in its bearings on the power-lever by moving the handle-bar J' in the proper direction, and as this shaft J is turned either to the right or left the link L, which is rigidly connected to the shaft by the bolt *m* as respects movement in a horizontal plane, will be swung or turned around to cause its slotted end *l'* to impinge or bear against the stud or bolt *k*, and thus turn the arm K in the reverse inclined direction to the inclination of the link. As the velocipede is in motion and the lever H is rocked back and forth the link L must play or reciprocate, because it is attached to the rock-shaft on the lever, and this play is provided for by the slot in the link L and the pin or bolt *k*; but in this connection I would state that I have demonstrated by a full-sized actual working velocipede that the play of the link L on the crank-arm K does not exceed more than one-half ($\frac{1}{2}$) of an inch. By constructing the sliding joint *k l* between the steering-spindle and link some distance in advance of the power-lever and in front of the steering-fork and making said joint in such proportions that the play of the link does not exceed one-half of an inch I am able to produce a three-wheel velocipede which cannot be tilted or turned over when the front wheel E is turned at an angle to the line of movement of the machine, and at the same time the machine can be propelled by a lever operated by the arms of the rider and steered by devices connected to the lever and which have a sliding-joint connection with the spindle of the steering-fork.

It is of course to be understood that the slotted end of the link which is connected to the handle-bar shaft plays freely back and forth over the pin or stud *k* on the arm K of the steering-fork, the parts being so proportioned that they can move easily and freely on each other; but as the play of the link is so short the position of the arm K and the steering-fork will not be affected to any appreciable extent by the reciprocation of the link when the arm K and link are turned at an angle to each other, and hence the machine can be easily steered out of a straight line while the lever H is being rocked.

A standard N is fastened in the receptacle A, and it sustains a seat *n* for the accommodation of the rider. The standard is braced by the rod *n'*. The support or arm *g* is braced by the rod *g'*, attached thereto and to the front end of the receptacle A.

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

A velocipede comprising a frame having the arch D and a fixed arm, *g*, a steering-fork journaled in the arch, D, and provided at its upper end with the forwardly-extending arm, K, fixed to said fork and adapted to swing horizontally, a power-lever, H, fulcrumed at an intermediate point of its length on the arm, *g*, a pitman connected to the lower end of said power-lever and operating the driving-wheels, a rocking steering-bar J journaled in bearings externally on the upper part of said lever, H, and a link, L, connected to the lower end of the steering-bar and actuated thereby horizontally, its other end being adjustably attached by a pin-and-slot connection to the free end of the arm K, substantially as set forth.

In testimony whereof I affix my signature in the presence of two witnesses.

NELSON NEWMAN.

Witnesses:
WM. R. BOWERS,
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