(No Model.)

C. H. CANDLER & J. WHITEHEAD.

VELOCIPEDE.

No. 260,840. Patented July 11, 1882.

Fig. 1.

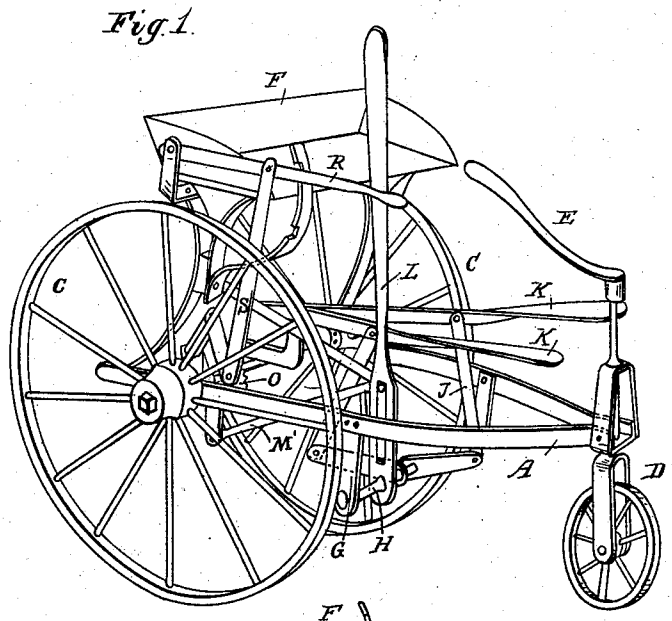
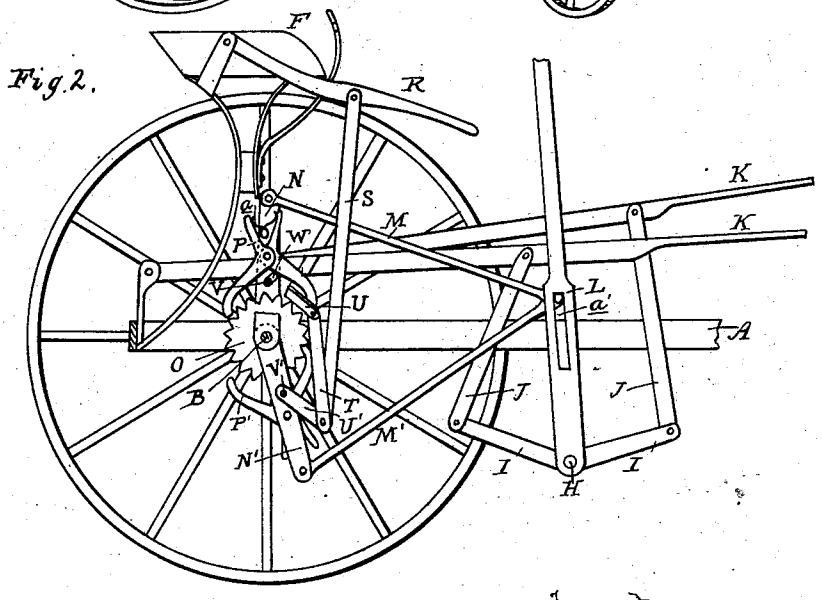


Fig. 2.



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UNITED STATES PATENT OFFICE.

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VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 260,840, dated July 11, 1882.

Application filed May 24, 1882. (No model.)

To all whom it may concern:

Be it known that we, CLAUDE H. CANDLER and JAMES WHITEHEAD, of Detroit, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Tricycles; and we do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

The nature of this invention relates to certain new and useful improvements in the construction of that class of road-wagons ordinarily denominated "tricycles."

The invention consists in the peculiar construction and application of quadruple pawls actuated by suitable treadles or levers and arranged to engage with a suitable ratchet-wheel upon the shaft, and so adapted that a forward or backward motion can be imparted to the vehicle at the will of the operator, and in the peculiar construction, arrangement, and various combinations of the parts, all as more fully hereinafter set forth.

Figure 1 is a perspective view of our improved tricycle, and Fig. 2 is a diagram showing the pawls reversed so as to produce a continuous rearward movement.

In the accompanying drawings, A represents a suitable frame, mounted upon the axle B, which carries the traction-wheels C and are secured rigidly thereto, the said axle having proper bearings in the frame A. At the front end of the frame A there is arranged a caster or guide wheel, D, provided with a hand-lever, E, which projects back to within easy reach of the operator when seated upon the seat F, which is supported upon the frame above the axle B. Pendent from the frame A are suitable hangers, G, in the lower ends of which is properly journaled the rock-shaft H, to which are secured the crank-arms I, projecting in opposite directions and upon nearly the same plane. The outer ends of these arms I are connected by suitable rods, J, to the treadle-levers K, the rear ends of which are properly and pivotally secured to the frame A.

L is a hand-lever, the lower end of which is rigidly secured to the rock-shaft H, the upper end coming within easy reach of the operator.

M M′ represent two vibrating arms, one end of each of which is pivotally secured to the lever L, while the opposite ends are similarly secured to the outer ends of the vibrating frames N N′, the inner ends of each of which are properly sleeved upon the shaft B, and between these inner ends of the frames N N′ a star-ratchet, O, is rigidly secured, by keying or otherwise, upon the shaft B. Properly secured in each of the frames N N′ are the double pawls P P′, between the outer ends of each of which is secured the proper spring, *a*, for the purpose of compelling an engagement between the pawls and the ratchet, as hereinafter set forth.

R represents a lever within easy reach from the seat F, and is connected by means of the bar S and the link T, the ends of which are pivotally secured to the links U U′, the inner ends of which are rigidly secured to short rock-shafts V V′, properly journaled in the frames N N′, respectively, and each of these rock-shafts is provided with a cam, W.

In practice, when it is desired to drive the device forward the lever R is elevated, as shown in Fig. 1, which, through the connections herein described, acts upon the cams W so as to allow the front dog of the upper pair and the rear dog of the lower pair to engage with the star-wheel, while they also prevent any engagement of the opposite pawls or dogs. By the operating the treadle-levers K K or the lever L, or both, a continuous forward rotary movement is communicated to the shaft B, which causes the vehicle to move forward, its direction being determined by the guide-wheel D, as may be desired by the operator. When a rearward or backing movement is desired the lever R is depressed, which causes the pawls or dogs to assume the positions shown in Fig. 2, and which are directly the reverse of those above described for imparting a forward movement. The operating of the treadle-levers will now cause the device to move backward.

By this construction and arrangement of parts it will be seen that we provide a means for imparting a forward or backward movement of the device through the medium of quadruple pawls, operating upon the same shaft, and actuated by treadles and levers common to both movements.

If desired, the axle may be constructed in two sections, so that the wheels can move independently of each other.

A slot, *a*, in the hand-lever L allows of an adjustability of the links or vibrating arms M M′ upon said lever, by means of which its throw may be lengthened or shortened, as desired.

What we claim as our invention is—

1. In a tricycle, the combination, with the shaft H, the arms I I, the rods J J, the treadles K K, and the lever L, having a slot, *a*, of the rods M M′, the pivoted frames N N′, the double pawls P P′, the ratchet O, and the axle B, substantially as and for the purpose specified.

2. In a tricyle, the combination, with the axle B and the ratchet O thereon, of the pivoted frames N N′, the double pawls P P′, and mechanism, substantially as described, for alternately throwing opposite members of the pawls P P′ into and out of engagement with the ratchet O, substantially as described.

3. In a tricycle, the combination of the following elements for the purpose of reversing the motion of the driving-axle, to wit: lever R, pitman S, links T U U′, rock-shafts V V′, pawl-carriers, and cams, the parts being constructed, arranged, and operating substantially as and for the purposes described.

CLAUDE H. CANDLER.

JAMES $\overset{\text{his}}{\underset{\text{mark}}{\times}}$ WHITEHEAD.

Witnesses:
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