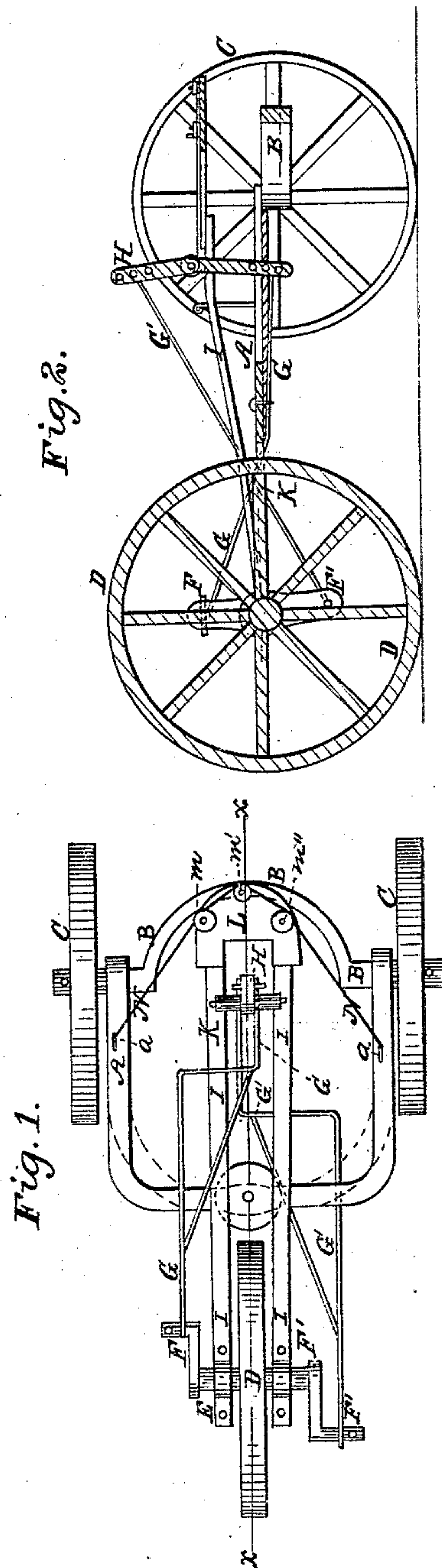


DOTY & DICKINSON.
Velocipede.

No. 89,977.

Patented May 11, 1869.



Witnesses:
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United States Patent Office.

C. J. DOTY AND ALFRED S. DICKINSON, OF WASHINGTON, DISTRICT OF COLUMBIA.

Letters Patent No. 89,977, dated May 11, 1869.

IMPROVED VELOCIPEDE.

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

To all whom it may concern:

Be it known that we, C. J. DOTY and ALFRED S. DICKINSON, of Washington, in the county of Washington, and District of Columbia, have invented a new and useful Improvement in Velocipedes; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, in which—

Figure 1 is a top or plan view of our velocipede, and

Figure 2 is a longitudinal vertical section on line *x* of fig. 1.

Corresponding letters refer to corresponding parts in both figures.

This invention relates to an improvement in that class of devices denominated "three-wheeled velocipedes;" and

It consists in the combination and arrangement of the parts of which it is composed, as will be more fully described hereafter.

A, in the drawings, represents a portion of the framework of the machine, the rear ends of which are attached to the rear axles B, from which part it extends forward for any required distance, when it is so bent as to extend transversely across the machine.

B represents the rear axle, which is of the curved form shown in fig. 1.

To this axle the two rear wheels of the machine are fitted.

C C represent the wheels above alluded to, and

D represents the forward and guide or steering-wheel.

E represents an axle, which has its bearings in the front ends of the frame K, and to which the guide-wheel is attached.

F F' represent cranks, which are secured to the ends of shaft, or axle E, as clearly shown in fig. 1.

G G represent connecting-rods, which extend from cranks F F' to the upper and lower ends of lever H, and are for the purpose of communicating the motion of such lever to the cranks, for propelling the device.

H represents a jointed lever, which is pivoted to the spring-bars I I, at a point just above the joint in the same. The upper end is provided with handles on either side thereof, and also with the means of attaching to the same, the connecting-rod G, which extends from thence to crank F'.

The lower arm of this lever is jointed to the arm above described, its lower end being provided with projections, upon which the operator can place his feet when operating the machine, and it is also provided with the means of attaching thereto the connecting-rod G, which leads therefrom to crank F' of the driving-shaft E.

I I represent spring-bars, which are attached to the end of frame K, in front of the bearing of shaft E, in

order that as much as possible of the weight of the operator may be thrown upon the driving-wheel of the machine. From the point of junction with the frame K, these bars extend, in an inclined direction, to a point in the rear of the jointed lever, sufficiently great to secure the semicircular plate L, which joins their rear ends together.

K represents a frame, or yoke, which is pivoted centrally to the front end of frame A, so that as the guide-wheel is turned, to give direction to the machine, this frame may turn with it. In the forward ends of this frame are secured the boxes which hold the journals of the driving and guide-wheel.

L represents a plate, of metal, which is secured to the rear end of the spring-bars, and which unites them together. This plate also serves as a seat for the operator, or as a device to which such seat may be attached, and also as a support for the series of sheaves, or wheels around which the guiding or steering-rope passes.

M M' M'' represent wheels, or sheaves, around which the rope, or chain which controls the direction of the machine passes. These sheaves are provided with a groove in their peripheries, for the rope, or chain to lie in.

It will be observed that the wheel M'' is larger in diameter than the remaining ones, and that it is provided with a handle, and also that the rope, or chain passes entirely around it.

This arrangement is for the purpose of causing it to be used as the means of giving direction to the machine by being manipulated by the operator, as he sits upon his seat, he using one of his hands for that purpose, while aiding in propelling the machine with the other; and at the same time he is enabled to apply a considerable amount of power by means of the lower arms of lever H and rod G, which may be operated with his feet.

N represents a rope, or chain, which is to be secured to the staples *a a*, fixed in the frame A, it passing entirely around wheel M'', and behind or outside of wheels M and M', as clearly shown in fig. 1.

Having thus described our invention,

What we claim, and desire to secure by Letters Patent, is—

The arrangement of the cranks F F', connecting-rods G G', and jointed lever H, with reference to the steering-apparatus, substantially as and for the purpose specified.

In testimony whereof, we have signed our names to this specification, in the presence of two subscribing witnesses.

C. J. DOTY.
ALFRED S. DICKINSON.

Witnesses:

J. F. CALLAN,
JAMES N. CALLAN.