

(No Model.)

O. J. McGANN.
Velocipede.

No. 230,428.

Patented July 27, 1880.

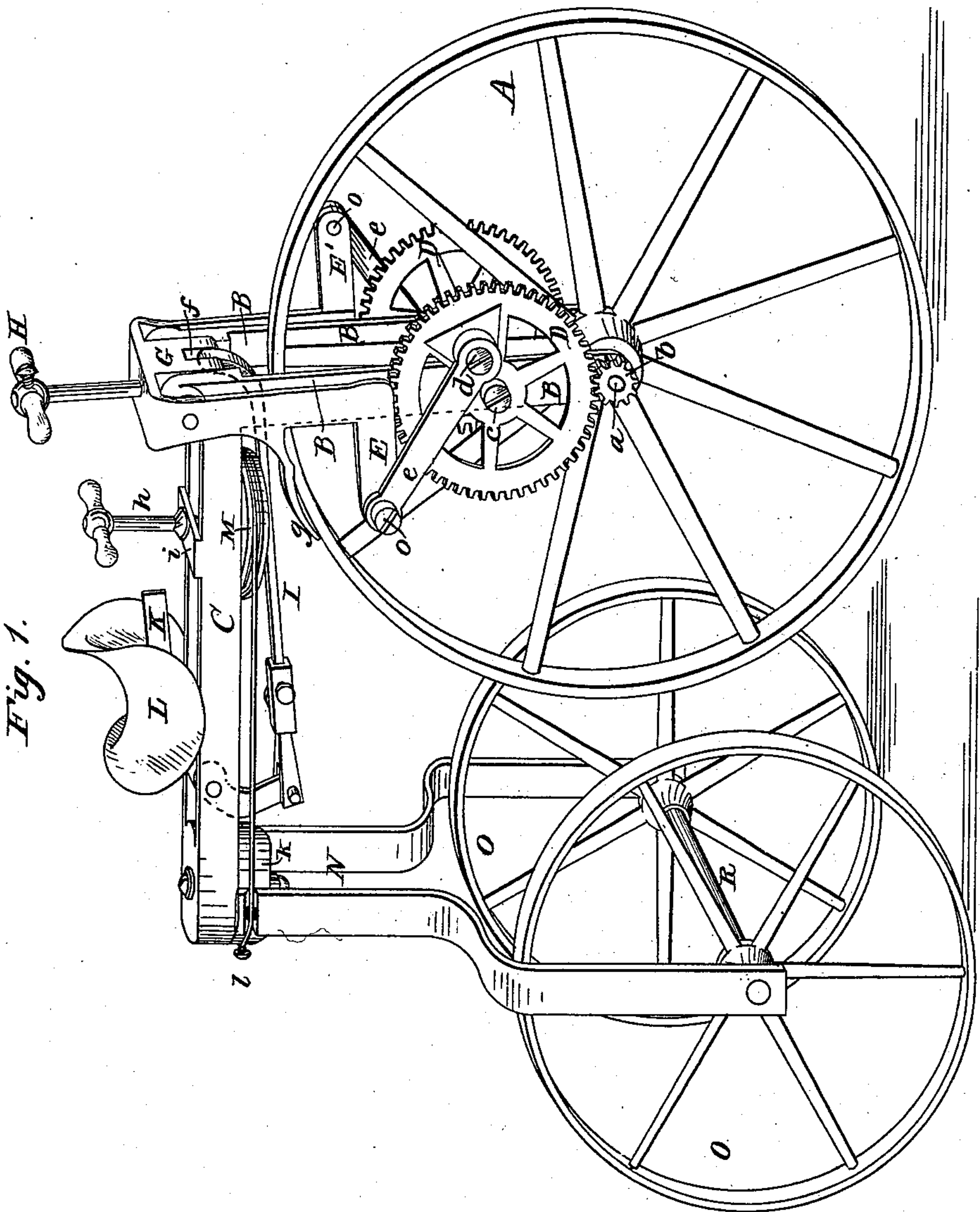
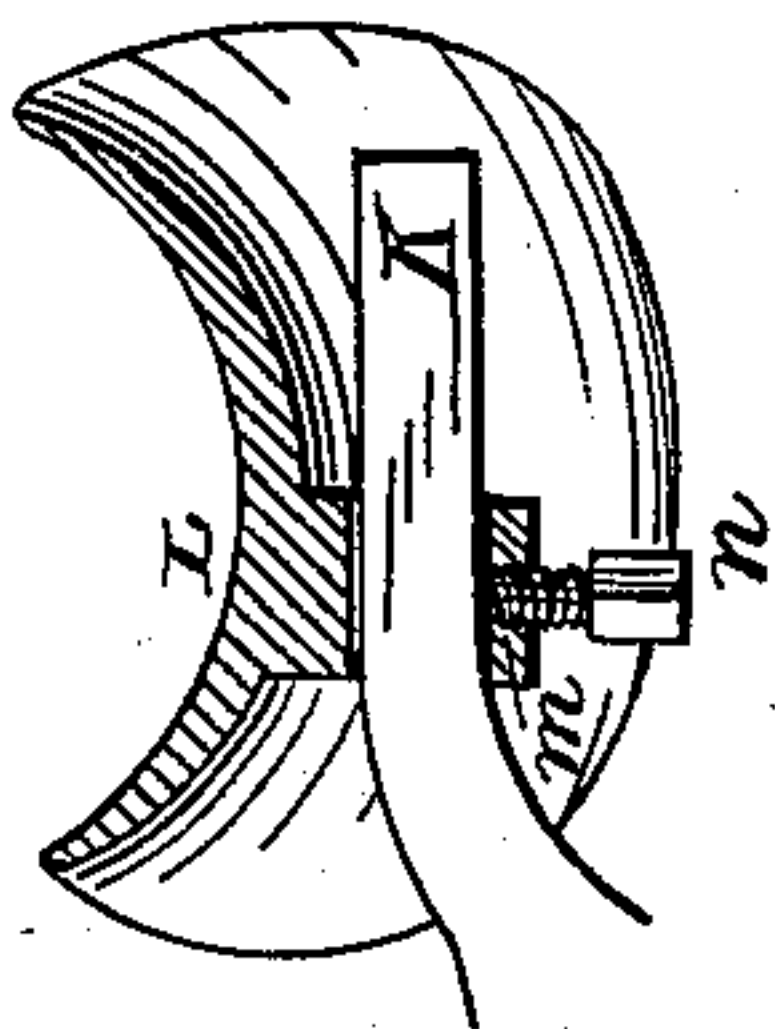


Fig. 1.

Witnesses:

N. H. Low
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Fig. 2.



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UNITED STATES PATENT OFFICE.

OWEN J. MCGANN, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF OF HIS
RIGHT TO DAVID A. STRONG, OF SAME PLACE.

VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 230,428, dated July 27, 1880.

Application filed May 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, OWEN J. MCGANN, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Velocipedes or Health-Motors, of which the following is a specification.

The invention relates to the propulsion of velocipedes or health-motors by the combined action of the arms and feet with the weight of the body when being operated.

The object of my invention is to provide a system by which the weight of the body, in combination with the feet and arms, can be utilized for the propulsion of the person or the carrying of substances and the healthful exercise of the operator of the machine; and, finally, it consists in the particular construction and arrangement of the lever and gearing mechanism.

In the accompanying drawings, in which similar letters of reference indicate like parts, Figure 1 is a perspective of a device embodying my invention. Fig. 2 is a vertical longitudinal section of the adjustable saddle.

The invention will first be described in connection with the drawings, and then pointed out in the claims.

A represents the driving-wheel, which is secured tight on the axle *a* and journaled in the lower end of the prongs B B, which are a part of the frame or reach C, the wheel A being placed between the prongs B B. On each end of the axle *a* are pinions *b*, that gear with the external-toothed wheels D D, revolving loosely on the pins or studs *c*, attached to the sides of the prongs B B, to communicate motion to the pinions *b*. The toothed wheels D D are also provided with pins or studs *d*. These pins or studs are set at quarter-circles or right angles to each other, nearly, on the toothed wheels D D, and are connected by oscillating rods *ee* to pins or studs *o o*, attached to the right and left angular reversed double bell-cranks E and E'. The purpose of thus connecting the several devices, as stated, is to avoid dead-centers of the cranks when they are directly opposite each other, whereby an easy and regular motion of the wheels is maintained and transmitted to the propelling or driving wheel A.

G represents a vibrating cross-head, being formed solid with the right and left angular reversed double bell-cranks E and E', fixed treadles *g*, and T-handle extension-lever H, by which the rider may operate the gear-wheels D D, pinions *b*, and the wheel A. The vibrating cross-head is attached to and held in place between the frame C by an iron pin passing through the upper part of the bell-cranks E and E', frame C, and cross-head G, in such manner as to permit the bell-cranks and cross-head to vibrate freely. The vibrating cross-head G is also provided with a suitable recess, *f*, made in its lower part, for the insertion and attachment of the forward end of the adjustable saddle-pitman I, which is attached and held in place by a suitable pin passing through the vibrating cross-head G and pitman I, the other end of which is adjustably connected to the curved saddle-lever K, and held in place by a screw-bolt and nut passing through it and the adjustable pitman I.

K represents a curved saddle-lever carrying the adjustable saddle L, provided with a sliding socket, *m*, on its under side, having a set-screw, *n*, for the adjustment of the saddle to the lever. The saddle-lever K is pivoted to and between the inside of the frame C, and is held in position by a pin, which passes through the frame C and curved lever K in such manner as will allow easy vibration of the lever K.

M represents a grooved wheel placed directly under the frame C, in front of the rider, and attached to the guiding-rod *h*, which is arranged to freely turn in and on the frame-bearing *i*, it being solid on the frame C, in such manner as will permit the rider to turn the rod *h* right and left, for the purpose of guiding the machine through the action of a chain or rope over the grooved wheel M and yoke-boss *k*.

N represents a yoke to which the rear wheels, O O, and axle R are attached in the usual manner. The yoke N is provided with a circular boss or bearing, *k*, forming a connection to the extreme end of the rear part of the frame C. Holes of suitable size are made through both, into which a close-fitting bolt, with a nut and washer, is inserted and ar-

ranged so that the yoke, with the wheels, may turn in either direction, as desired. The external diameter of the boss *k* is provided with a groove corresponding to the groove on the wheel *M*, over both of which a wire rope or chain passes and is fastened with the screw *l*, so that when the wheel *M* is turned by the operator the rear wheels will follow the line of direction required for the guidance of the forward wheel, *A*.

Having described the construction of the device, I will now proceed to describe how the same may be operated.

The saddle being adjusted on the curved lever by the rider, at a proper distance from the treadles to allow a free and easy action of the feet and the extension-lever with the arms, a unison of the motion of the machine is secured with the rise and fall of the saddle. The rider mounts the saddle or seat and with his hands grasps the extension-lever, and with his feet placed on the treadles, the force exerted by the pull or push of the extension-lever and motion of the feet pressing upon the treadles, together with the weight of the rider on the saddle, transmits force and motion to the gear-wheels and to the driving-wheel *A* with a propelling power and onward motion, also giving an easy and graceful rise and fall to the operator on the saddle.

In guiding, the T-shaped rod, made fast to the grooved wheel carrying the wire rope or chain, may be turned in a direction to impart a pull on either side of the yoke, thereby turning the rear wheels in the direction required to guide the front or driving wheel at the will of the rider.

The utilization of the weight of the rider tends materially to assist in the propulsion of the machine, and the peculiar construction and consequent movement of the various devices obviates the objection to positions of dead-centers, thereby giving to the vehicle a regular and easy motion.

I do not wish to be understood as confining myself, in construction, to a three-wheeled device, as with slight modifications (not essential to this invention) it can be adapted to a two-wheeled motor as well; but as such slight modifications as may be suggested and applied would not vary the working or operation of the machine, a detailed description of such modifications is not deemed necessary.

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

1. In combination with the driving-wheel *A*, pinions *b*, gear-wheels *D D*, oscillating rods *e e*, the right and left angular reversed double bell-cranks *E* and *E'*, fixed treadles *g*, vibrating cross-head *G*, and extension-lever *H*, arranged, constructed, and operated in the manner substantially as described.

2. The combination of the frame *C*, vibrating cross-head *G*, having the recess *f*, adjustable pitman *I*, curved saddle-lever *K*, and adjustable saddle *L*, provided with the sliding socket *m* and set-screw *n*, arranged and constructed in the manner substantially as described.

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Witnesses:

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