

(No Model.)

F. J. ARNEY.
VELOCIPED SLED.

No. 459,850.

Patented Sept. 22, 1891.

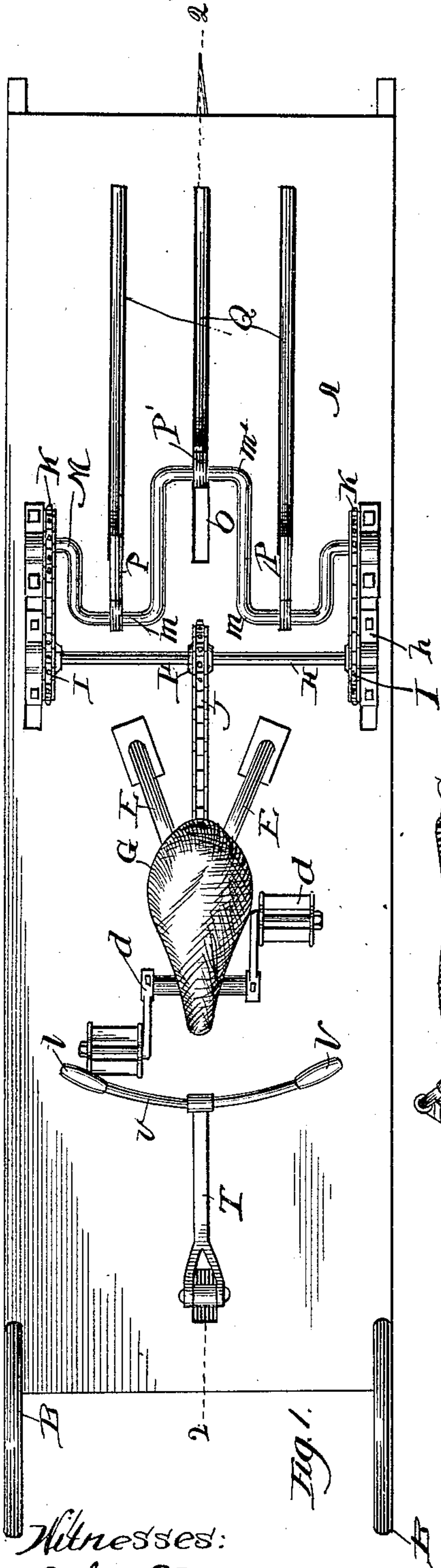


Fig. 1.

Witnesses:

John L. Jackson
Robert A. Millar.

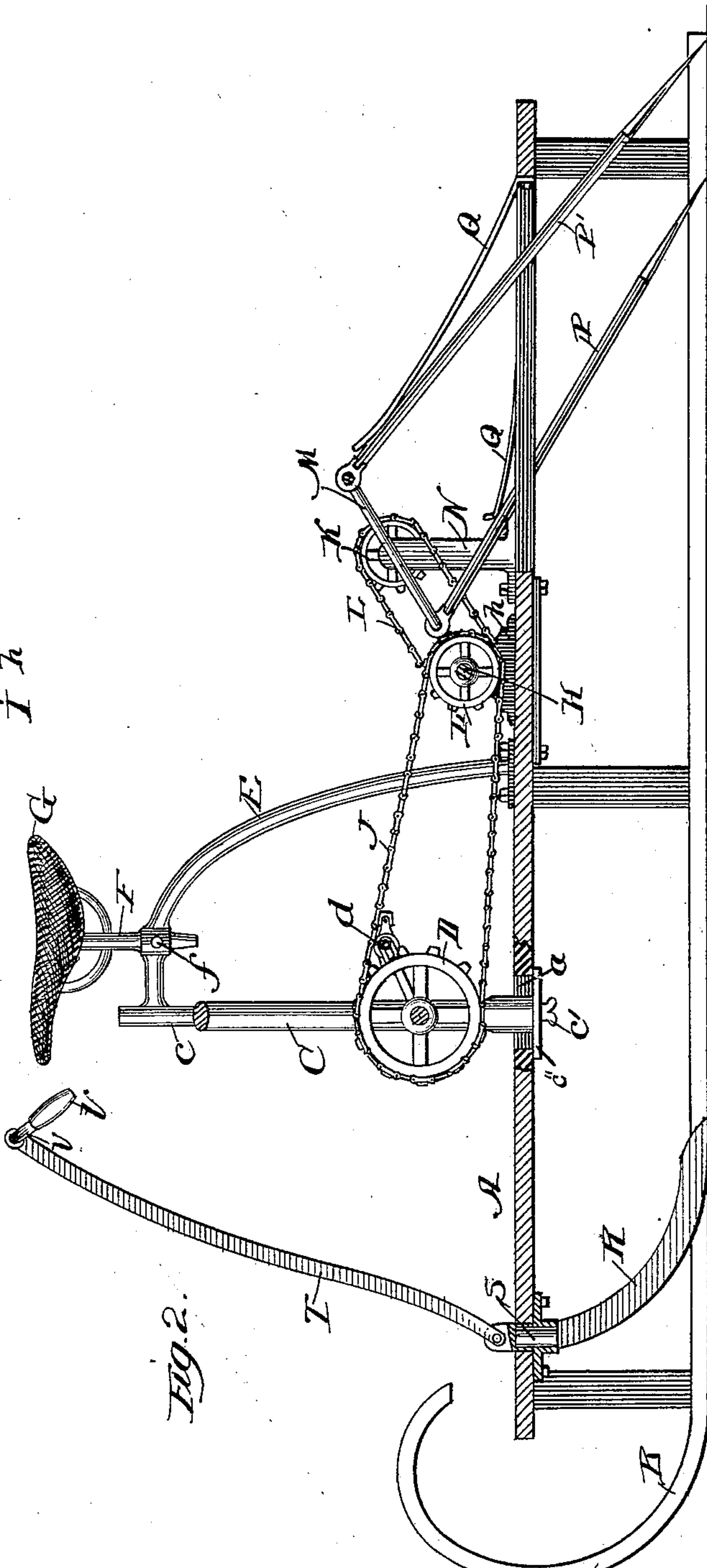


Fig. 2.

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UNITED STATES PATENT OFFICE.

FRANK. J. ARNEY, OF CHICAGO, ILLINOIS, ASSIGNOR TO HIMSELF AND
HENRY T. BUIE, OF SAME PLACE.

VELOCIPEDE-SLED.

SPECIFICATION forming part of Letters Patent No. 459,850, dated September 22, 1891.

Application filed January 23, 1891. Serial No. 378,851. (No model.)

To all whom it may concern:

Be it known that I, FRANK. J. ARNEY, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Velocipede-Sleds, of which the following is a specification, reference being had to the accompanying drawings, in which—

Figure 1 is a top or plan view, and Fig. 2 is a section on line 2 2 of Fig. 1.

My invention relates to sleds, and more particularly to sleds adapted to be mechanically propelled.

The object of my invention is to provide a sled which may be propelled by the operator on a level surface and in any desired direction. I accomplish this object as hereinafter specified, and as illustrated in the drawings.

That which I regard as new will be set forth in the claims.

In the drawings, A indicates a sled-body which is mounted on runners B in any suitable manner. Upon the sled-body, and preferably near its forward end, are secured two upright supporting columns or posts C C, which are firmly secured in the body of the sled at equal distances from the front of the sled and are adapted to receive between them a sprocket-wheel D, the axles of which are journaled in suitable bearings in the supports C C. The rods C C are arched toward each other at their upper ends and unite to form a single rod c, thus forming a firm support for the wheel D. The lower ends of the supports C C are mounted in longitudinal slots a a in the sled-body; the supports being secured in their vertical position by plates c'', secured on the under side of the sledbody, to which plates the supports C C are secured by screws c', as best shown in Fig. 2, which screws are adapted to be moved in slots in the plates c''. By this construction the supports C C may be moved lengthwise of the sled to tighten or loosen the belt J by simply loosening the screw c'.

E E indicate curved rods, which are made of steel or othersuitable material and are adjustably secured at their lower ends to the sled-body at some distance back of the supports C C, and at their upper ends are united

together and connected to the rod c above the supports C C, as best shown in Fig. 2. The adjustment of the rods E at their connection with the sled-body A is effected by slots and clamp-bolts in a manner similar to that described with reference to the supports C.

The rods E E are provided, near the point of their junction with the rod c, with a vertical slot or hole adapted to receive a rod F, on which is carried a seat G. The rod F is secured in the slot, in which it fits, by a pin f, which passes through an eye in the rods E E, or it may be secured in any other suitable manner. The seat G may be made of leather or other suitable material and is similar to the bicycle-seat in common use. The axles of the sprocket-wheel D project through the supporting-rods C and are provided with treadles d, by means of which the wheel D may be rotated, which treadles d may be of any approved construction.

H indicates a horizontal shaft the ends of which are mounted in adjustable bearings h on opposite sides of the sled, which shaft is located a short distance in rear of the supports C C of the wheel D.

Mounted upon the shaft H and firmly secured thereto near its ends are sprocket-wheels I, and at the center of the shaft H is mounted another sprocket-wheel I', which is in line with the wheel D and is geared thereto by a link-belt J, the office of the wheel I' being to communicate the motion of the wheel D to the wheels I I. The wheels I I are geared in turn to corresponding sprocket-wheels K K by link-belts L L, which wheels are mounted upon a triple crank-shaft M, having arms m m' on opposite sides of the shaft, which shaft is mounted in suitable bearings N N on opposite sides of the sled-body and a short distance back of the bearings h. The shaft M is mounted at such a height above the top of the sled as to permit of the rotation of the arms m m' of the shaft.

P P' indicate rods, preferably of iron or steel, which are journaled on the arms m m'. The rods P P' extend downward and backward through longitudinal slots O in the body of the sled to the ground, their lower ends being pointed or otherwise adapted to engage

the ground to propel the sled. By rotating the wheel D by means of the foot-pedals or otherwise the rotary motion is communicated through wheel I' to the shaft H and wheels I
 5 I and thence through the wheels K K to the crank-shaft M. The rods P P' are thereby alternately drawn forward and forced backward, the ends of the rod being prevented
 10 from slipping back without entering the ground by means of springs Q Q, attached to the sled-body, which are so adjusted on each rod P P' as to keep the ends of the rod constantly in contact with the ground.

The relative proportions of the several
 15 wheels may be arranged to give any desired number of rotations of the crank-shaft to each rotation of the driving-wheel D to regulate the speed at which the sled may be moved.

20 R indicates the rudder or guiding device, which is arranged at the front of the sled and consists of a backwardly-curved blade, made of any suitable material, which is pivoted at its upper end in a box fitted in the sled-body
 25 on the central line. The rear end of the rudder R is adapted to move to one side or the other to guide the sled and is operated by a rod T, which is connected to the rudder at its pivotal point, and which extends upward to
 30 a point near the seat G.

V V indicate handles for moving the rod T, which are fitted on a cross-bar v at the top of the rod T in the usual manner. By moving the handles either to the right or to the
 35 left the rudder R will swing in a like direction and the sled will be directed accordingly.

With my improved velocipede-sled the rider is enabled to propel the sled in any desired direction and at any rate of speed, and may
 40 run on level ground with great facility.

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

1. The combination, with a sled-body A, having runners B, of uprights C, rising from the sled-body and connected at their upper ends
 45 with a seat G, a sprocket-wheel D, having axles journaled in the uprights and provided with treadles d, a transverse shaft H, provided with a sprocket-wheel I at each end and
 50 with a central sprocket-wheel I', a chain J,

connecting the sprocket-wheels on the uprights with the center sprocket-wheel on the transverse shaft, the crank-shaft M, having a sprocket-wheel K at each end connected by
 55 chains L with the end sprocket-wheels of the transverse shaft, and the propelling-rods P P', carried by the crank-shaft, substantially as described.

2. The combination, with a sled-body A, having runners B and a longitudinal slot a, of
 60 uprights C, adjustable backward and forward in the slot of the body and connected with the seat G, the sprocket-wheel D, having its axles journaled in the uprights and provided with treadles d, the transverse shaft H, having a
 65 sprocket-wheel I at each end and a center sprocket-wheel I', a chain J, connecting the sprocket-wheel on the uprights with the center sprocket-wheel on the transverse shaft, the crank-shaft M, provided at each end with
 70 a sprocket-wheel K, the chains L, connecting the sprocket-wheels at the ends of the crank-shaft with the sprocket-wheels at the ends of the transverse shaft, and the propelling-rods P P', carried by the crank-shaft, substantially
 75 as described.

3. The combination, with the sled-body A, having runners B and a longitudinal slot a, of uprights C, provided with screws c for adjusting the uprights along the slot, the seat-
 80 carrying rods E, secured to the sled-body and connected to the upper end of the uprights, the sprocket-wheel D, having its axles journaled in the uprights and provided with treadles d, the transverse shaft H, having a
 85 sprocket-wheel I at each end and a center sprocket-wheel I', connected by a chain J with the sprocket-wheel on the uprights, the bearings N, rising from the sled-body and supporting a crank-shaft M, having at each end
 90 a sprocket-wheel K, the chains L, connecting the sprocket-wheels at the ends of the crank-shaft with the sprocket-wheels at the ends of the transverse shaft, and the propelling-rods P P', secured to the crank-shaft, substantially
 95 as described.

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Witnesses:

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 ROBERT A. MILLAR.