

UNITED STATES PATENT OFFICE.

GEORGE B. M. RIBBLE AND CHARLES C. SPENCER, OF CORTLAND, NEW YORK.

ICE-VELOCIPEDE.

SPECIFICATION forming part of Letters Patent No. 387,814, dated August 14, 1888.

Application filed November 12, 1887. Serial No. 254,976. (No model.)

To all whom it may concern:

Be it known that we, GEORGE B. M. RIBBLE and CHARLES C. SPENCER, of Cortland, in the county of Cortland and State of New York, have invented a new and Improved Ice-Velocipede, of which the following is a full, clear, and exact description.

The object of our invention is to provide a practical ice velocipede or sled provided with propelling mechanism to be operated by the feet of the rider; and the invention consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of our invention. Fig. 2 is a side elevation of the same, and Fig. 3 is a detail sectional view on line $x-x$ of Fig. 2.

The main frame A is made triangular in form, and at its front end is formed a vertical bearing, B, in which is journaled the front post, C, to which the front runner, D, is secured. The rear ends of the said main frame A are pivoted at $a-a$ to the raves E' of the two rear runners, E, so that the front runner and main frame may have free up-and-down movement independently of the rear runners. The two raves E' are rigidly connected by the firm cross-piece or board F, and the members of the main frame A are united near their rear ends by the cross-piece G, to which the seat H is secured, and from which the rider revolves the propelling-wheels J by foot-power, consisting of the double-crank shaft K, treadle bars L L, pulleys M M', secured, respectively, upon the crank-shaft K and shaft J' of the wheels J, and the belt N passed over said pulleys. The front ends of the treadle-bars L are each connected to a pivoted link, I, attached to the main frame A to permit free longitudinal movement, and the front ends of the rear runners, E, are held in elevated position, each by a spring, m , attached to the runner and to the main frame, as shown clearly in Fig. 2. The shaft J' is journaled at each end in a sliding block, d , held in ways d' , attached to the posts O of the rear runners. The sliding blocks d are each acted upon by a coiled spring, g , so that the wheel J is at all times held in sufficiently firm contact with the

ice, but will yield in case the runners pass over irregular surfaces, so the wheel will at no time support the weight.

The velocipede is guided by the front runner, D, which may be turned in the bearing by the lever P, attached to the upper end or journal, c . The lever P may also be turned over, so as to form a handle by which the sled may be drawn, if required.

The wheels J are formed with projections j around their peripheries, which are sharpened at the outer edge to engage with the snow or ice, so that when the wheels are revolved they will not slip, but will force the sled forward. The said wheels may be lifted out of contact with the ground, when desired, by the lever R and shaft R', which latter is connected to the shaft J' by small ropes or straps s , so that by turning the lever R and shaft R' the ropes or straps s will be wound upon the shaft R and thus effect the elevation of the shaft J' and the wheels J therein, so that the sled may be drawn or run by gravity without turning the wheels or pedal mechanism.

Having thus fully described our invention, we claim as new and desire to secure by Letters Patent—

1. In an ice-velocipede, the main frame A, pivoted to the raves of the rear runner and formed with a bearing, B, at its forward end, in combination, with the front runner, D, and rear runners E E, substantially as described.

2. The combination of shaft J' and wheels J with means for elevating the same, as described.

3. In an ice-velocipede, the rear runners, E, and main frame A, pivoted together, in combination with the springs m , connecting the upper ends of the runners to the main frame A, substantially as described.

4. The runners E, connected together and pivoted to the main frame A, the posts O, and ways d' , secured thereto, in combination with the blocks d , held in said ways, the shaft J', journaled in said blocks, the springs g , acting on the blocks, and the wheels J, secured upon the shaft, substantially as described.

GEORGE B. M. RIBBLE.
CHARLES C. SPENCER.

Witnesses:

C. EVAN BROCKLIN,
H. H. PUDNEY.