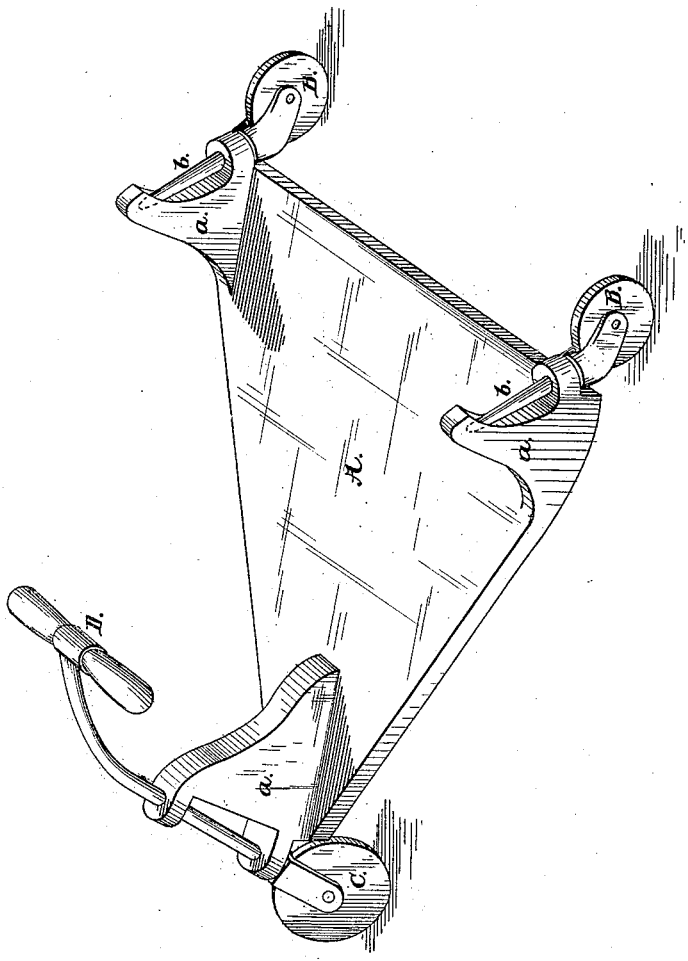
J. B. ROOT.
Velocipede.

No. 210,435. Patented Dec. 3, 1878.



Attest;
Benj. A. Smith
Robt. H. Duncan

Inventor;
John B. Root

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHN B. ROOT, OF NEW YORK, N. Y.

IMPROVEMENT IN VELOCIPEDES.

Specification forming part of Letters Patent No. **210,435**, dated December 3, 1878; application filed May 8, 1878.

To all whom it may concern:

Be it known that I, JOHN B. ROOT, of the city of New York, in the county and State of New York, have invented a new and useful Improvement in Vehicles or Traveling Machines, of which the following is a specification:

In my application for Letters Patent for improvement in road-locomotives, filed October 27, 1877, the driving-wheels were so mounted and operated that their paths of travel were diagonal to the direction in which the machine was moving, the caster-wheels, which acted as drivers, being so arranged that those of each pair constantly receded from and approached each other in their movements. The same principle—driving-wheels tracking diagonally to the general direction of the vehicle—is applied to the construction which forms the subject of this patent, but with this modification, that the driving-wheels vibrate simultaneously in the same direction, so that they remain substantially the same distance apart.

The invention consists of a platform, in combination with rearwardly-inclined caster-wheels, so attached to the platform as to vibrate laterally with the lateral movement of the platform, the whole being so constructed and arranged that it can be driven by changing the center of gravity from side to side of the platform.

This construction is illustrated in the accompanying drawing, in which A represents the platform; B B, the driving-wheels; *b b*, spindles of the wheels B B; C, guide-wheel; D, handle of guide-wheel; *d*, connecting-rod, and *a a a* frames attached to platform for supporting the wheels. The platform may be of any desired shape, that shown in the drawing being triangular.

The driving-wheels B B, constructed upon the principle of caster-wheels, are mounted in the frames *a a*, located at the rear angles of the platform, so that their spindles *b b* will turn freely in the frames *a a* to permit the wheels to take any direction in which they may be impelled by the force exerted upon the platform. The spindles of the caster-wheels B B are so mounted in the frames *a a* as to be inclined to the platform in a rearward direction.

The guide-wheel C is located at the remaining angle of the platform, and the rod on which the handle D is mounted is inclined or bent backward, so as to bring the handle within easy reach of the operator, who stands or sits near the center of the platform. The weight of the platform and its load rest upon shoulders on the stocks of the caster-wheels.

The vehicle is actuated and controlled as follows: The operator stands upon the central part of the platform, facing the guide-wheel, and sways his body from side to side, or throws his weight suddenly from one foot to the other, thus changing the center of gravity from one side to the other of the platform. This change of weight upon the platform gives to it a lateral movement, and this lateral movement of the platform causes the spindles *b b* to turn in their bearings in their frames *a a*, and changes the direction of the caster-wheels B B, causing them to run alternately to the right and left of a line representing the general line of progression of the vehicle. Thus the action of these driving-wheels becomes very like that of an oar in sculling through the water, or a skater when he propels himself by the swaying of the body, with both feet side by side on the ice.

The machine can be guided by simply turning the guide-wheel from right to left, or vice versa, by means of the handle D.

What is claimed as new is—

1. A vehicle or traveling machine propelled by means of inclined caster-wheels, substantially as described.

2. A vehicle or traveling machine consisting of a platform mounted upon rearwardly-inclined caster-wheels and a guide-wheel, constructed and operating substantially as set forth.

JOHN B. ROOT.

Witnesses:
BENJ. A. SMITH,
ROBT. H. DUNCAN.