

No. 732,120.

PATENTED JUNE 30, 1903.

J. D. SCHMIDT.
PEDOCYCLE.

APPLICATION FILED FEB. 7, 1903.

NO MODEL.

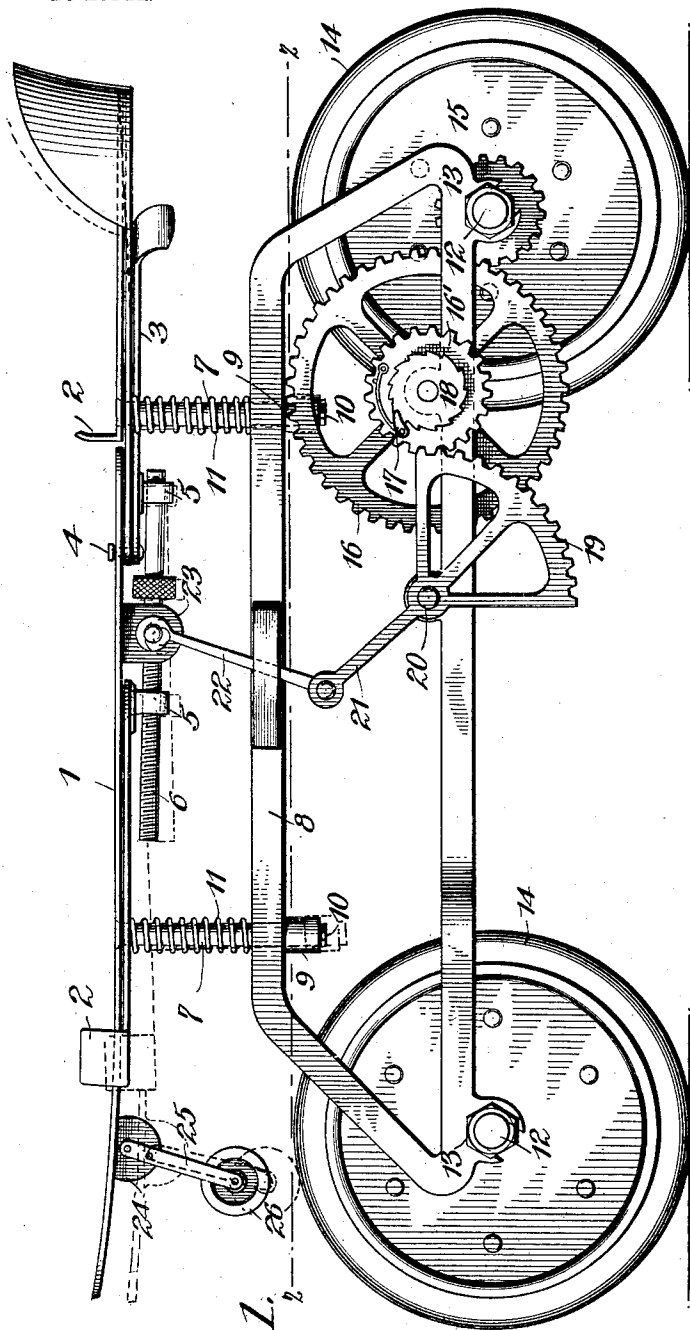
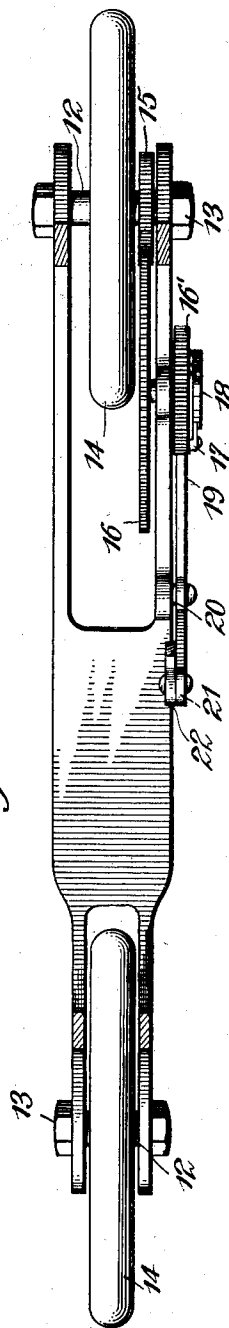


Fig. 1.

Witnesses
E. H. Stewart
Robert Morton

Fig. 2.



J. D. Schmidt, Inventor:
by *Cashnow & Co*
Attorneys

UNITED STATES PATENT OFFICE.

JOHN D. SCHMIDT, OF DAVENPORT, IOWA.

PEDOCYCLE.

SPECIFICATION forming part of Letters Patent No. 732,120, dated June 30, 1903.

Application filed February 7, 1903. Serial No. 142,351. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. SCHMIDT, a citizen of the United States, residing at Davenport, in the county of Scott and State of Iowa, have invented a new and useful Pedocycle, of which the following is a specification.

My invention relates to pedocycles, especially to that form of pedocycles in which the weight of the user serves as a source of power for propelling the pedocycle.

The object of my invention is to produce an apparatus of the class described in which the number of parts shall be reduced to a minimum, in which the operation shall be positive and without lost motion, and which shall be always under perfect control.

In attaining the object above stated I make use of the construction and combination of parts of a pedocycle hereinafter fully described and claimed, and shown in the accompanying drawings, in which—

Figure 1 is a view in side elevation, and Fig. 2 is a view from above with the upper part of the pedocycle removed along the line 2 2 in Fig. 1.

In all of the above-mentioned figures corresponding parts are indicated by the same characters of reference throughout.

Referring to the drawings by the reference characters, 1 represents a foot-plate provided with suitable clamping members 2 2 and an operating-lever 3, by means of which said clamping members are actuated. The foot-plate 1 is made in two sections connected by a pivot 4, and the clamping members are provided on their under side with lugs 5 5, through which passes a screw 6 for adjusting the clamping members to correspond to shoes of different sizes.

Extending downward from the foot-plate 1 are two standards 7 7, which pass through ways 9 9, provided in the upper portion of a frame 8. At the lower end of the standards are provided nuts 10 10, suitably threaded thereon, and surrounding the standards between the foot-plate 1 and the frame 8 are provided spiral springs 11 11, whose tension is adjusted by means of the nuts 10 10, above mentioned.

Mounted at either end of the the frame 8 are axles 12 12, held in position by means of nuts 13 13. Mounted upon the axles are wheels

or rollers 14 14, which are to be provided with ball-bearings and with yielding tires of rubber or other suitable material. Rigidly connected with the hub of the rear wheel is a small spur-gear 15, which is in mesh with a larger gear 16, whose axle is supported in bearings on the frame 8. Mounted on the same axle with the gear 16 is a smaller gear 16', which is freely rotatable on said axle and is provided with a pawl 17, adapted to engage with a ratchet 18, which is rigidly secured to the gear 16. In mesh with the gear 16' is a toothed segment 19, rigidly mounted upon the short shaft 20, journaled in the bearings of the frame 8 about the middle thereof. Opposite the toothed portion of the segment 19 is an arm or projection 21 integral therewith and adapted to form an operating-lever therefor. The arm 21 is pivotally connected with a link 22, which is pivotally mounted at its other end upon a lug 23, projecting downward from the foot-plate 1. For controlling and limiting the movement of the link 22 a guideway is provided in the upper portion of the frame 8, as shown.

The mechanism above described comprises the supporting structure and driving means for my improved pedocycle, and the operation thereof is as follows: The clamping members 2 2 having been adjusted to the proper degree and clamped upon the foot, the user of the pedocycle rises upon his feet and transfers his weight to the foot-plate. As soon as the weight is applied to the foot-plate it is forced downward against the resistance of the springs 11 11, and motion is transmitted through the link 22 and the projection 21 of the toothed segment 19 to that segment which is swung upwardly on its shaft 20. The motion of the segment is transmitted to the small spur-gear 16', causing it to rotate in the direction of the hands of a clock. This movement of the gear 16' is in a direction to cause the pawl 17, carried thereby, to interlock with the adjacent tooth of the ratchet 18 and to impart movement thereto in the direction of the rotation of the gear 16'. The ratchet 18 being rigidly secured to the gear 16, motion is imparted to the gear 16 and from it to the smaller gear 15, which is rigidly secured to the rear wheel of the pedocycle, and the pedocycle is consequently driven forward with suffi-

cient momentum to carry the user at a suitable speed. Motion having been once established, the user of the pedocycle by alternately lifting the feet and bringing them in contact with the ground, it being of course understood that pedocycles are to be used in pairs as ordinary roller-skates are, may propel himself forward at a rapid rate without other muscular effort than that required in alternately lifting and lowering the feet.

At the forward portion of the foot-plate 1 there is provided at the under side thereof a lug 24, upon which is rigidly mounted a depending bracket 25, which carries in its bifurcated lower end a small roller 26, which is adapted to serve as a brake when brought in contact with the front wheel of the pedocycle. The height of the roller above the front wheel is such that with the weight of user resting for the most part on the rear portion of the foot-plate, as it normally does, the roller will not come into contact with the front wheel; but by transferring a portion of the weight to the front end of the foot-plate 1 the user may apply the roller and check the motion of the front wheel whenever he desires. I provide a roller instead of a stationary brake-shoe, for the reason that owing to the small diameter of the wheels of the pedocycle their peripheral velocity is often quite high, and the application of a stationary brake-shoe thereto while the wheels are moving rapidly would soon cause a considerable degree of wear, and, furthermore, such rapid arrest of movement as would result from the use of a stationary brake-shoe is both unnecessary and undesirable. The roller distributes what little wear there is over the entire surface of the front wheel and brings the pedocycle to a stop as soon as is necessary.

In the explanation of the operation of the pedocycle given in a preceding paragraph it has been assumed that no more effort will be employed in propelling the device than is necessary in alternately raising the feet; but if higher speed is desired than can be acquired in this way additional speed may be attained by using the pedocycle in the same way that ordinary roller-skates are used. When used in this way, the brake-roll is of considerable help in making the forward stroke. As the user pushes backward on

one foot to enable him to make a vigorous forward stroke with the other the weight of the rearmost foot is of course applied in great measure to the front end of the foot-plate, and the brake-roll is brought into forcible contact with the forward wheel, holding it approximately stationary, and so giving a firm resistance to the backward impulse on that foot. This action of the brake-roll is useful in obviating the necessity found in using ordinary roller-skates for setting the rearmost foot at a considerable angle to the direction of movement in order to prevent backward movement of the rearmost foot when making a forward stroke.

Having now fully described the construction and operation of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination in a device of the class described, of a frame, wheels rotatably mounted within said frame, a foot-plate mounted for vertical reciprocation on said frame and extending over said wheels, driving mechanism for one of said wheels operated by downward pressure at the rear of the foot-plate, and a brake rigidly attached to the under surface of said foot-plate near its forward end and above the front wheel, said brake being operated by downward pressure on the forward portion of the foot-plate.

2. The combination in a device of the class described of a foot-plate mounted for reciprocation upon a suitable frame, wheels carried by said frame, driving mechanism for the rear wheel mounted on said frame and connected with said foot-plate, said driving mechanism being operated by downward pressure upon the rear portion of said foot-plate, a bracket rigidly attached to the under surface of said foot-plate at its forward end and a brake-roll mounted in said bracket, said brake-roll being applied to the forward wheel by downward pressure of said foot-plate.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

J. D. SCHMIDT.

Witnesses:

WALTER M. BALLUFF,
FRANK L. DRUEY.