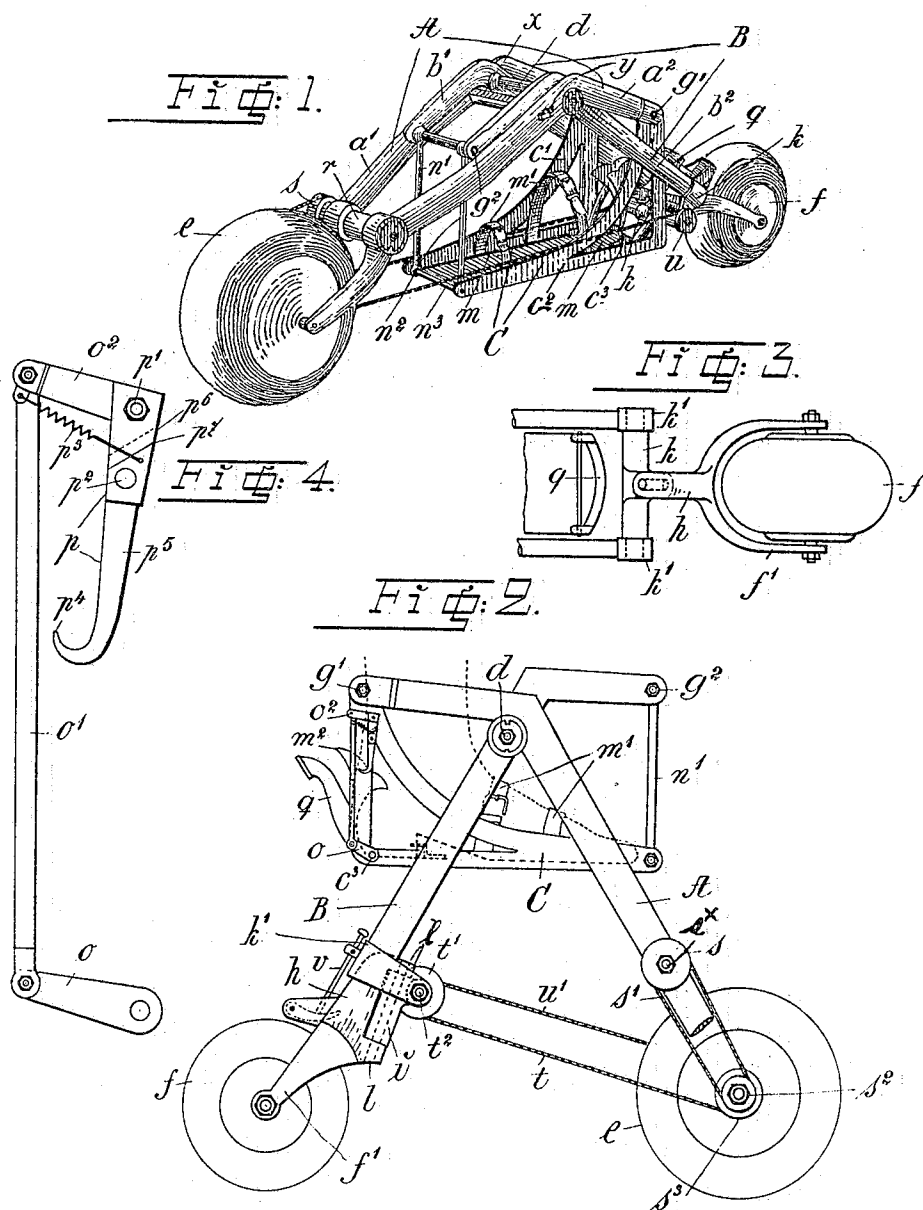


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PATENTED JAN. 16, 1906.

E. PETRINI.
ROLLER SKATE.
APPLICATION FILED OCT. 25, 1905.



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EDVARD PETRINI, OF UPPSALA, SWEDEN.

ROLLER-SKATE.

No. 809,980.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDVARD PETRINI, a subject of the King of Sweden, and a resident of Uppsala, in the Kingdom of Sweden, have
5 invented certain new and useful Improvements in Roller-Skates, of which the following is a full, clear, and exact description.

The object of the invention is to provide a roller-skate with means whereby power may
10 be applied to rotate one of the wheels of each skate to carry the skate forward, the power being derived from the weight of the skater and rendered effective by the alternate lifting of one foot and the transferring of the
15 weight of the body to the other.

The invention comprises the construction and arrangement of parts hereinafter described, and particularly pointed out in the claims.

20 It is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view showing the parts in position assumed when the weight is resting on the skate. Fig. 2 is an elevation
25 of the opposite side from that seen in Fig. 1 in position assumed when weight is removed. Fig. 3 is a detail plan view of one of the wheels, and Fig. 4 is a detail view.

Referring by reference characters to the
30 drawings, it will be seen that I provide a frame comprising two elements A and B, pivotally connected together. The front element is composed of two angular-shaped bars a' and a'' , arranged parallel to each other and
35 rigidly connected together by cross rods or members, as will hereinafter more fully appear. The other element B is likewise composed of two rigidly-connected bars of similar shape. These two elements, which I may
40 conveniently designate as "arms," are pivotally connected at the angle or bend by a cross-rod d . Between the lower extremities of the members of the element or arm A is journaled the driving-wheel e , to which the
45 power is applied. The lower extremities of the members of the element or arm B are provided with lugs or brackets k' , which are connected by a tubular rod k . This carries a bearing-bracket i , to which is pivoted a head
50 h of carrying-arms f' , between which the rear wheel f is journaled. The pivotal connection is effected by providing lugs l on the head h , overlapping the bracket i at top and bottom and passing a hinge-pin through alin-
55 ing openings in said parts.

The free angular ends or portions of the

arms or elements A and B are turned in opposite directions and are connected by the rods g' and g'' , from which is suspended a foot rest or support adapted to receive and
60 hold the foot in the position shown in Fig. 2 in dotted lines. This foot-rest c is composed of side frames c' , suspended at the rear from the rod g' and at the front from the rod g'' by
65 links $n' n''$, connecting at their lower ends to the cross-rod n^3 , which supports the soleplate. Straps m' and a heel-spring m'' are provided for holding the foot in place.

With the parts in the position shown in Fig. 2 it will be readily seen that when the
70 weight of the skater is thrown on the foot-rest the downward pull through the uprights upon the ends of the elements or arms A and B will tend to spread the lower or wheel-carrying ends apart. This spreading of the
75 arms I use to impart rotary motion to the drive-wheel e through the mechanism which will now be described.

A drive-drum (preferably with sprocket-teeth) s^3 is connected to the hub of the drive-
80 wheel by a suitable clutch, (not shown,) so that the wheel e will be rotated forwardly when the drive-drum s^3 is rotated in this direction, but is free to rotate forwardly inde-
85 pendent of the drive-drum if the latter is stopped or reversed. A chain t , having its front end secured to this drum, is carried back and secured to a drum t' , fast on a shaft
90 t^2 , journaled in the tubular connecting-rod k . The shaft t^2 carries at its opposite end a similar drum or wheel u , to which is secured one end of a chain u' , the opposite end of which is secured to one of the forks in which wheel e is journaled. Thus as the elements or arms
95 A and B are spread apart the pull upon chain u' will cause it to unwind from drum u , rotating the latter and shaft t^2 and drum t' . This will tend to wind up chain t on drum t , and as the chain-wheel t' is being carried bodily
100 to the rear by the separation of the arms a double pull or speed will be imparted to chain t , which will be unwound from drum or wheel s^3 at a corresponding speed, and by reason of the clutch mechanism before referred to wheel e will be driven and the skater's foot
105 carried forward. In order that the arms may be drawn together again when the weight of the operator is removed, I provide the following mechanism: A sprocket-wheel s^2 is rigidly connected to the wheel s^3 , and a
110 similar sprocket-wheel is fixed on a shaft s^x , journaled in the tubular member r , which

connects the members a' and a^2 . A spring (not shown) encircles the shaft in a space between it and the tubular member and has one end connected to the shaft and the other to a stationary part. An endless sprocket-chain s' passes around wheels s and s^2 . Thus as the arms are separated shaft s^x will be rotated to wind up the spring, and when the weight of the skater is removed the spring will through wheels s and s^2 and chain s' rotate drum s^3 and through the chain and drum connections above described wind up the drums and draw the arms together. The downward or separating movement is limited by a cross-bar x , extending between the members a' and a^2 and in the path of the free ends of members b' and b^2 .

It is desirable that means be provided for locking the treadle in a depressed position. This may be accomplished by a hook p^4 , adapted to engage a pin (not shown) on the inside of the member b^2 . In order that this hook may be operated automatically, I provide the construction shown more in detail in Fig. 4. In this it will be seen that the hook is pivotally connected by a pin p^2 to one arm of a bell-crank lever pivoted at p' to the side frame of the treadle. The shank of the hook has an inclined end cooperating with a corresponding incline on the bell-crank lever and is normally held in the position shown in Fig. 4 by a spring p^3 . The arm o^2 of the bell-crank lever is connected by a rod o' with an arm o , secured to shaft c^3 , which is designed to be rocked by raising the toe and depressing the heel, thus raising the front end of the treadle in its frame and rocking the shaft, or by backward pressure of the ankle or calf against an arm carried by the shaft c^3 the same result may be secured.

An ordinary brake device may be provided, as indicated at v .

It will be readily understood from the foregoing description that the mere raising and lowering of the feet, as in the act of walking, or, in fact, the alternate shifting of the weight from one foot to the other, will propel the skater steadily forward. If it is desired to turn either to the right or to the left, this may be accomplished by a simple inclination of the ankles, which, owing to the manner in

which the rear wheel is mounted, will cause it to be deflected and to turn the skater in a direction opposite to that toward which the ankles are inclined.

Having thus described my invention, what I claim is—

1. In a device of the character described, a pair of crossed arms pivotally connected together, wheels journaled on the lower ends of said arms, a treadle or foot-plate located below the point of pivotal connection of the arms and suspended from the upper ends of the arms, and means whereby the separation of the lower ends of the arms imparts rotary motion to one of the wheels, substantially as described.

2. In a device of the character described, a pair of crossed arms pivotally connected together and each consisting of two members, cross-rods connecting said members, wheels carried at the lower ends of said arms, a foot-piece or treadle suspended from the cross-rods, and driving connections to one of the wheels operated by the spreading of the arms, substantially as described.

3. In a device of the character described, a pair of pivoted arms, a foot-piece supported by said arms, a driving-wheel carried at the lower end of one arm, driving connections to said wheel operated by the spreading of the arms and a steering-wheel pivotally carried by the other arm, substantially as described.

4. In a device of the class described, a pair of arms pivotally connected together, wheels at the lower ends of said arms, driving connections to one of said wheels for rotating it when the arms are separated, means for normally keeping said arms pressed toward each other, a foot-piece carried by said arms adapted to receive the pressure of the foot to separate said arms, and locking means for holding said foot-piece depressed and the arms separated, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDVARD PETRINI.

Witnesses:

J. A. MARKMAN,
CARL FRIBERG.