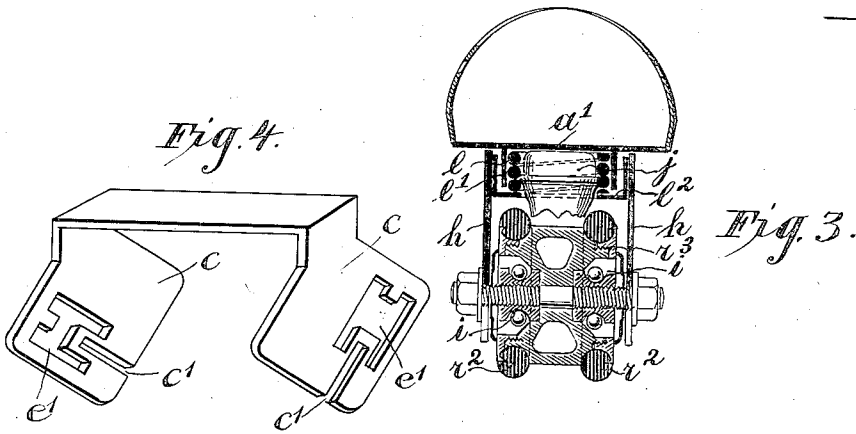
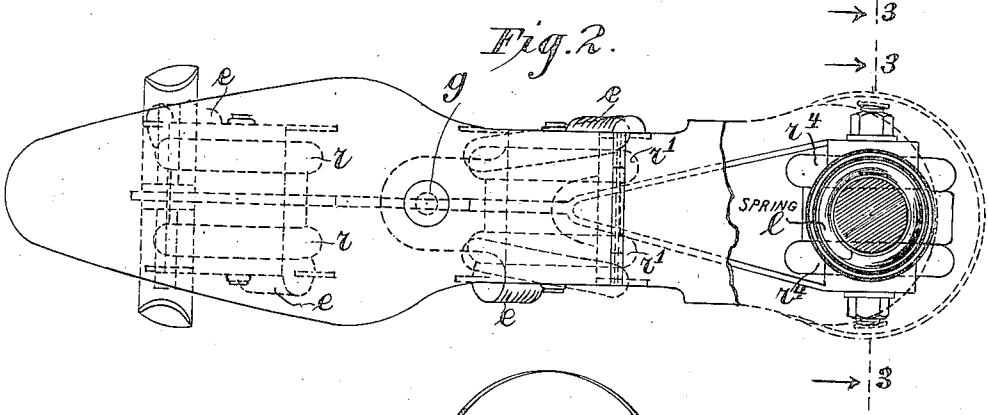
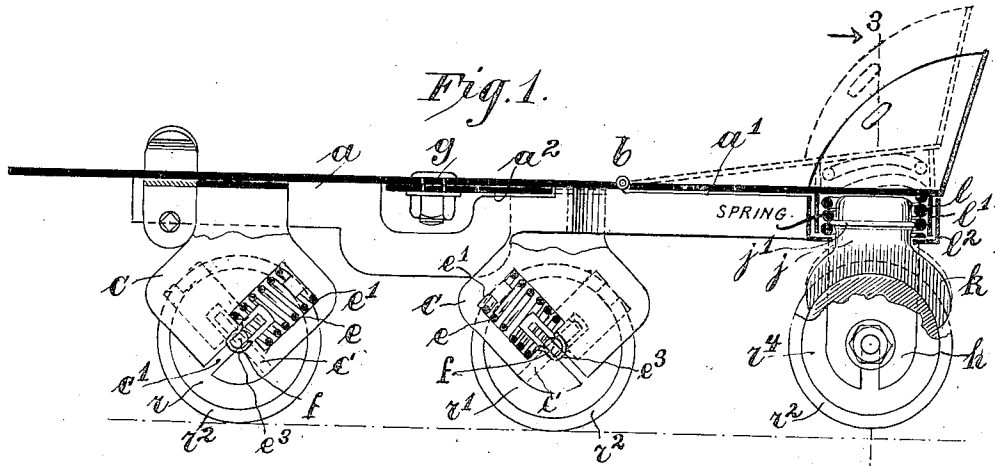


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 ROLLER SKATE.
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1,050,490.

Patented Jan. 14, 1913.



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UNITED STATES PATENT OFFICE.

REINHOLD SCHWARZ, OF NEW YORK, N. Y.

ROLLER-SKATE.

1,050,490.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, REINHOLD SCHWARZ, a citizen of the United States, and a resident of New York, in the county and State of New York, have invented certain new and useful Improvements in Roller-Skates, of which the following is a specification.

This invention has reference to improvements in roller-skates such as are used on the ground or a floor or a prepared surface.

The roller-skates heretofore employed have usually two pairs of rollers and accordingly four contact points on the ground.

It is the purpose of the present invention to produce novel roller-skates presenting various advantages. By the use of my novel roller-skates slipping during skating is avoided. This has been accomplished by devising the skates after carefully studying all possible movements of the foot of the skater when starting, moving and stopping. The fore part of the foot rests on the skate above two pairs of rollers of which the first pair is stationarily mounted while the second pair is movable to the right and left on a turning point located in the front part of the skate so that by a slight motion of the fore foot small and large curves may be made. There is provided a third pair of rollers which however are normally slightly above the ground so that same are inoperative when a curve is made. As far as described the skates act as common skates with two pairs of rollers but without steering mechanism and brake. A brake is provided in the rear part of the skate above the third or rear pair of rollers and is actuated by the skater by allowing the full weight of the body to press down on the rear rollers by straightening the knees. When the skater wants to go forward he will involuntarily raise the heels whereby the brake is released. By straightening the knees again and allowing the weight of the body to rest on the rear parts of the skate the brake is again actuated. Thus the action of the brake is automatic and when actuated there are six contact points on the ground. Means are provided on the two front pairs of rollers to retain their shafts

always parallel to the ground whereby the largest contact surfaces with the ground are obtained.

In addition to these main objects it has been sought to reduce the cost of production by simplicity in construction and care has been taken to produce a neat and desirable article, all as will be fully described hereinafter with reference to the accompanying drawing in which—

Figure 1 represents in side elevation, partly in section a roller skate embodying in desirable form the present improvements. Fig. 2 is a top view with part of the rear portion broken away. Fig. 3 is a vertical section on line 3 3 of Figs. 1 and 2. Fig. 4 represents a perspective view on an enlarged scale a bracket for springs and axle shafts supported thereby.

Similar characters of reference denote like parts in all figures.

Referring to the drawing *a* represents the foot plate to which the front rollers are secured. The heel plate *a'* is connected to the foot plate by means of a hinge *b* and therefore is movable. Leather straps or clamps are provided on the skate for securing same to the foot in the usual manner which may be of any approved construction. The foot plate *a* is strengthened at the bottom by a rib *a''* which extends rearwardly and gradually diverges from above the axis of the middle wheel bracket and forms a spring seating *b'* for a spring, to be described farther down. The front pair of rollers *r* is mounted in a bearing or bracket *c* which is secured to the foot plate *a*. The middle pair of rollers is secured to a plate *a''* below the foot plate *a* and hinged thereto by a hinge *g*. Each of the brackets of the rollers is provided with two springs *e* arranged as shown in Figs. 1 and 2. The springs are on the outside of the rollers and they are set under an angle of 45° to the ground line in an opposite direction and rectangular to each other. Each spring is located in a housing *e'* into a bracket *c*. The shafts *f* of the rollers are introduced through a slot *c'* of the bracket *c*. The slot in each bracket extends in the same direction as its accom-

panying spring; and the end of each spring forms a hook c^3 which surrounds the shaft so that it can not drop out. By the use of these springs c mounted angularly as above described I attain that the shafts of the rollers are always parallel to the ground and the largest contact surfaces of the rollers with the ground are obtained. If one spring is pressed down during skating the other presses upwardly. Thus the springs are held in position and the shafts of the rollers supported. Each roller is surrounded by a rubber ring r^2 . These rubber rings or tires aid in preventing slipping during skating. By means of the threaded tire supports r^3 , shown in Fig. 3 said tires are exchangeable.

The middle pair of rollers is movable to the right and left on the turning point g located in the front part of the skate whereby steering is rendered possible and curves may be made. Any approved construction of such turning mechanism may be applied.

As above mentioned there is a third pair of rollers in the rear so arranged that they are normally slightly above the ground. There is a spring mechanism in connection with the rear portion of the foot plate which is movable on the hinge b . The rear rollers r^4 are mounted in brackets h and the shaft for same runs in ball bearings i . At the rear portion of the heel plate a^1 there is downwardly a device j supporting a brake k . Around the top portion of the support j there is provided a strong spiral spring l located in a housing l^1 which is secured to the heel plate a^1 and rests on the horizontal portion of the adjoining casing l^2 previously mentioned. A rim j^1 extends into the windings of the spring whereby a tendency to raise said support is imparted.

The operation of the roller-skate is substantially as follows: When the skates have been applied to the foot and the skater attempts to move he bends the knees slightly and moves forward in the usual manner. The heel of the skater then is slightly lifted and therefore the rear rollers r^4 are somewhat above the ground. When attempting to make a curve a little movement with the foot to the right or left will bring the middle pair of rollers in the desired position by virtue of its turning mechanism. When trying to stop the skater simply straightens the knee whereby the heel portion of the foot with the entire weight of the body will rest on the heel plate part a^1 and press same downwardly; the brake is thus actuated and the rear rollers are on the ground whereby the skater stops. Upon release of the heel portion of the foot from the heel plate a^1 of the truck the brake is released and the skater is at liberty to move again. It is self evident from the above descrip-

tion that skating in a backward direction is carried out with the present roller-skates the same way as in former constructions.

I claim as my invention:

1. A roller skate comprising a foot plate, a U-shaped bracket fixed to the foot plate, a similar bracket pivotally attached to the foot plate back of the front bracket, the downward legs of both brackets being provided with slots inclined at an angle to the foot plate, the slots in the opposite legs of each bracket being at right angles to each other, an axle provided with rollers for each bracket, springs attached to the ends of each axle and to the adjacent legs of the bracket, each spring extending in the same direction as the slot in the adjacent leg.

2. A roller skate comprising a foot plate and a heel plate pivoted thereto, supporting rollers for the foot plate, a forked rib attached to the underside of the foot plate and extending rearwardly beneath the heel plate, rollers supported by the forked rib and normally slightly above the ground, a brake located below the pivoted heel plate adapted to engage the rollers, and spring means tending to disengage the brake from the rollers.

3. A roller skate comprising a foot plate, a U-shaped front bracket fixed to the foot plate having a straight top plate and two enlarged downward side plates, having each a narrow slot inclined at an angle to the foot plate and at right angles to each other, a spring seating within each side plate of the bracket, a coiled spring in each spring seating in line with the adjoining slot having a bottom hook extending into the latter, and a pair of rollers with an axle resting in the bottom hooks of the springs.

4. A roller skate comprising a foot plate, a U-shaped front bracket fixed to the foot plate having a straight top plate and two enlarged downward side plates, having each a narrow slot inclined at an angle to the foot plate and at right angles to each other, a spring seating within each side plate of the bracket, a coiled spring in each housing in line with the adjoining slot having a bottom hook extending into the latter, a pair of rollers with an axle resting in the bottom hooks of the springs, a similar bracket pivotally attached to the foot plate in about the middle of the skate with rollers mounted therein acting as steering rollers.

5. A roller skate comprising a foot plate and a heel plate pivotally attached thereto, supporting rollers for the foot plate, a forked rib attached to the underside of said foot plate and extending rearwardly beneath the heel plate forming a casing, a spring casing within the first casing attached to the rear portion of the heel plate, a strong coiled spring within the spring casing, brackets secured to the casing formed on the forked

rib, a pair of rear rollers supported in the brackets, and a brake located below the pivoted heel plate adapted to be operated by the heel of the skater to engage the rollers, 5 said brake being disengaged normally from the rollers by the spring in the spring casing.

Signed at New York, N. Y., this 21st day of December, 1909.

REINHOLD SCHWARZ.

Witnesses:

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