Feb. 9, 1926. 1,572,567

M. SKORKA

ROLLER SKATE

Filed Oct. 10, 1925

Fig. 1

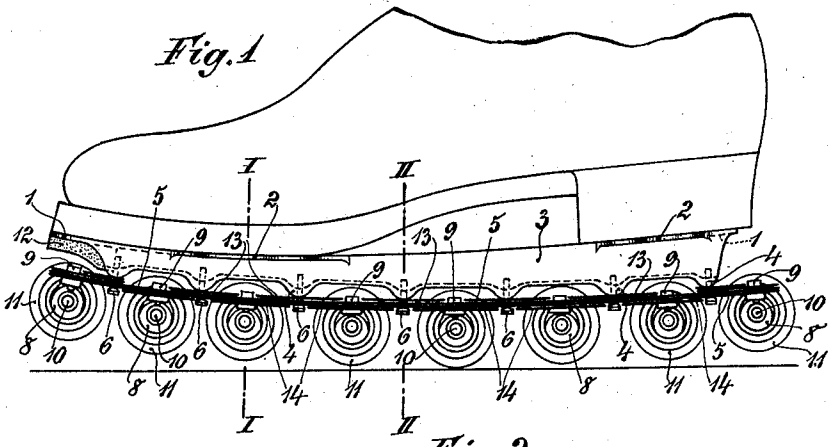

Fig. 2

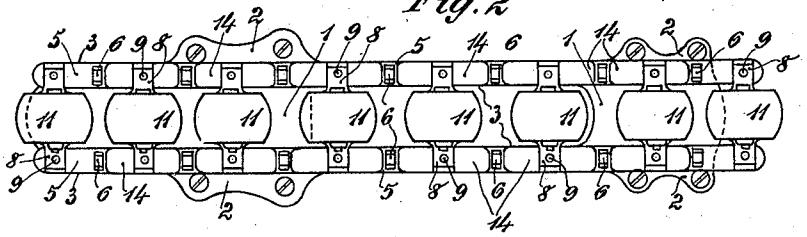

Fig. 3

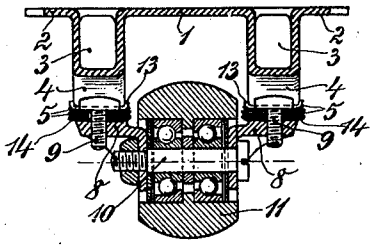

Fig. 4

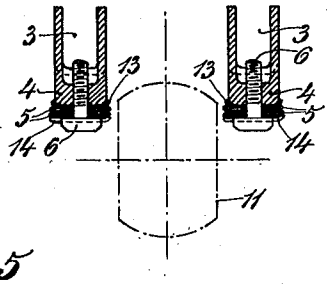

Fig. 5

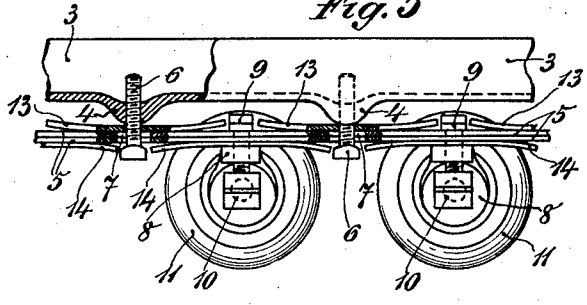

Fig. 6

M. Skorka
Inventor
By: Marks and Clerk
Attys

Patented Feb. 9, 1926. 1,572,567

UNITED STATES PATENT OFFICE.

MICHAEL SKORKA, OF BUDAPEST, HUNGARY.

ROLLER SKATE.

Application filed October 10, 1925. Serial No. 61,757.

To all whom it may concern:

Be it known that I, MICHAEL SKORKA, a subject of the Kingdom of Hungary, residing at X Apaffy-utca 22, Budapest, Hungary, have invented certain new and useful Improvements in Roller Skates, of which the following is a specification.

This invention relates to roller skates of the kind, in which the rollers are arranged in a single row one behind the other, and has for its object to provide such a roller skate with a peculiar elastic supporting means for the rollers, of the total number of which only one group of adjacent rollers is operative at a time, according to the position of the body or foot of the skater, whereby the roller skate is given a quick, smooth and yet sure action, similar to that of an ordinary skate for use on the ice and the transition from roller to roller takes place without any jerk, the front and back roller being provided with automatically acting brakes, so that all movements and exercises that are possible with ordinary skates can be performed with the new roller skate.

For this purpose the roller axles are not journalled as heretofore rigidly in two parallel rigid longitudinal members on the frame of the skate, but in separate bearings which are fixed to the under side of each of two flat longitudinal springs which are located on either side of the rollers, are freely supported between each two bearings and are capable of moving in their longitudinal direction. The ends of these longitudinal springs supporting the front and rear rollers are unsupported and when pressure is brought to bear on the front or the rear roller, for the purpose of reducing speed or coming to a standstill, bend so far upward that the roller comes in contact with a brake plate fixed to the sole plate of the roller skate frame or to the sole of the boot itself and is thereby subjected to a braking action.

In the accompanying drawing a constructional example of the roller skate forming the subject of the present invention is shown,

Fig. 1 being a side elevation, and

Fig. 2 a view from below.

Figs. 3 and 4 are sections on lines I—I and II—II of Fig. 1 but drawn to full scale.

Fig. 5 shows a portion of Fig. 1 to full scale, partly in longitudinal section.

Fig. 6 is a cross-section through one of the longitudinal springs for supporting the roller bearings to an enlarged scale.

The roller skate frame consisting substantially of two parallel longitudinal girders 3 of U-shaped profile open to the top, which are connected together at the front and at the rear ends by means of the sole plates 1 (Figs. 2 and 3) and have lateral flanges 2, by means of which they can be screwed to the sole and heel of the boot, is in the example shown stamped out of sheet metal, but may be made in any other suitable manner. The bottom sides of the two longitudinal girders 3 have corresponding transverse arched projections 4, to which the two flat longitudinal springs 5 supporting the roller bearings are attached parallel to one another in such a manner by means of screws 6 having heads that at the places of attachment they are free to bend and are capable of moving in the longitudinal direction in accordance with their bending movements. For this purpose the springs 5 are each rigidly fixed against longitudinal movement only at one point of attachment, while at all the other points of attachment they have slots 7 (Fig. 5) through which the screws 6 are screwed. In the middle between each two points of attachment and at the ends of the unsupported ends of the springs 5 extending beyond the foremost and backmost points of attachment the roller bearings 8 are rigidly fixed to the under side of the springs 5 by means of bolts 9 passed through the springs from above. Each two bearings 8 lying next to one another in the transverse direction are rigidly connected together by a horizontal axle 10, on which a roller 11 is journalled on a ball bearing (Fig. 3) Each roller 11, when loaded by its bearings 8, bends the springs 5 upwards not only between the adjacent points of attachment, but transmits this bending beyond the said points of attachment to the adjacent sections of the springs, but in the opposite direction and thus acts on the adjacent rollers. The springs 5 are so designed that two to three adjacent sections of the same and consequently two to three rollers will suffice for supporting the weight of the skater without any undue bending of the springs. As a result, of all the rollers of the skate only a single group of two to three rollers lying

immediately one behind the other is stressed corresponding to the position at any time of the body or foot of the skater. This has the advantage that, with the rollers arranged along a curve as shown in the drawing, the roller skate is adapted for performing even the smallest curves, hence for figure skating, while, with the rollers arranged along a straight line, it is suitable for racing.

For reducing the speed at which the skater is moving or for suddenly checking the movement or for executing certain figures a simple means of braking is provided consisting of a braking plate 12 of leather or some other material suitable for coacting with the material of the roller, which is fixed over the front roller 11 to the sole plate of the roller skate or to the sole of the boot itself (Fig. 1). When the skater throws his weight on the front end of the skate, the unsupporting front end portion of the springs 5 will be bent upwards and the roller 11 journalled on its extreme end will be pressed against the plate 12, which will effectively brake the roller. A similar braking arrangement may of course be provided above the similarly journalled rearmost roller 11 on the suitably extended frame of the skate or on the heel of the boot itself, whereby the same effect may be obtained on the heel of the foot being depressed.

The springs 5 may each be formed of one flat spring of suitable thickness extending the entire length of the skate, but preferably of two or more superposed thinner flat springs. In either case the unsupported end portions of the springs must be suitably reinforced, as is indicated in Fig. 1. For the better transmission of the weight of the body and its reactions to the springs 5 and for securing the screws for fixing the springs 5 to the frame of the skate and the roller bearings 8 to the springs, short pieces 13 and 14 of flat spring are interposed above the springs 5 between them and projections 4 of the skate frame and below the springs 5 between them and the roller bearings 8. The ends of the upper short springs 13 extend almost to the heads of adjacent bearing fixing screws 9 and the ends of the lower short springs 14 extend almost to the heads of the attaching screws 6 for the springs 6 (Fig. 5), so that all the screw heads lie each between two spring ends, whereby the screws, the heads of which are made square for this purpose, are prevented by the ends of the short springs from turning unintentionally and are thus secured effectively. It will be seen that the upper inserted springs 13 help to transmit the weight of the skater's body from each spring abutment 4 to the adjacent roller bearings 8 and lower spring insertions 14 the reactions of the weight of the body from the roller bearings 8 to the spring abutments 4. Through use the ends of these short inserted springs 13 and 14 become somewhat bent up in the way shown in Fig. 5 in an exaggerated manner, whereby they still more efficiently secure the screws. In order to prevent a relative turning or lateral displacement of the separate springs forming the springs 5 and for guiding them with respect to one another in the longitudinal direction, the lateral edges of all the springs are bent up in the manner shown in Fig. 6.

What I claim is:

1. A roller skate comprising in combination a frame, two rows of downwardly extending projections on the frame, two parallel longitudinal flat springs attached to the said two rows of projections so as to be capable of moving freely and to extend at the front and back ends of the skate beyond the foremost and backmost projections, roller bearings fixed rigidly to the said springs between the points of attachment of each spring and so as to project downwards and skate rollers on the said roller bearings, the foremost and backmost skate roller bearings being fixed on the unsupported forward and backward extensions of the longitudinal springs, as and for the purpose set forth.

2. A roller skate as claimed in claim 1, and having braking plates mounted above the foremost and backmost unsupported skate rollers, so as to be capable of coacting with the said rollers to produce a braking action, as set forth.

3. A roller skate as claimed in claim 1, and having the attachment of the longitudinal springs to the projections effected by square-headed screws and the fixing of the bearings to the longitudinal springs by square-headed bolts and having short pieces of flat spring inserted at the points of attachment of the longitudinal springs between the latter and the frame and extending almost to the square heads of the screws and other short pieces of flat spring inserted between the longitudinal springs and the roller bearings and extending almost to the square heads of the bolts, whereby the screws and bolts are secured from turning and the effect of the longitudinal springs is enhanced, as set forth.

4. A roller skate as claimed in claim 1, and having the attachment of the longitudinal springs to the projections effected by square-headed screws and the fixing of the bearings to the longitudinal springs by square-headed bolts and having short pieces of flat spring inserted at the points of attachment of the longitudinal springs between the latter and the frame and extending almost to the square heads of the screws and other short pieces of flat spring inserted

between the longitudinal springs and the roller bearings, and extending almost to the square heads of the bolts, the edges of all the springs being bent upwards, whereby the screws and bolts are secured from turning and the effect of the longitudinal springs is enhanced and the springs are guided with respect to one another and secured from relative lateral displacement and turning, as set forth.

In testimony whereof I have signed my name to this specification.

MICHAEL SKORKA.