

UNITED STATES PATENT OFFICE.

FRIEDRICH FRANKENBERG, OF BERLIN, GERMANY.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 503,233, dated August 15, 1893.

Application filed April 30, 1892. Renewed May 24, 1893. Serial No. 475,384. (No model.) Patented in Germany February 10, 1892, No. 66,893, and in England March 26, 1892, No. 5,965.

To all whom it may concern:

Be it known that I, FRIEDRICH FRANKENBERG, a subject of the King of Prussia, German Emperor, and a resident of Berlin, in the Kingdom of Prussia, German Empire, have invented certain new and useful Improvements in Roller-Skates, (for which I have obtained Letters Patent in England, No. 5,965, dated March 26, 1892, and in Germany, No. 66,893, dated February 10, 1892,) of which the following is a full and exact specification.

My invention relates to a roller-skate having four wheels placed in a longitudinal plane, in contradistinction to the usual construction of roller-skates, where two wheels are placed beside each other.

My invention also consists in providing a lubricating device of such construction, that the lubricating material is kept within the frame of the skate, thus avoiding any possibility of occasioning spots on the clothing by contact with the drops of outflowing oil or other lubricating material.

My invention will be more readily understood by reference to the accompanying sheet of drawings, on which—

Figure 1 is a side-elevation of my improved roller-skate. Fig. 2 is an under side view of the same, and Fig. 3 is a partial sectional elevation, showing one of the wheels with the bearing of its axle and box for lubricating the same.

Similar letters denote similar parts throughout the different views.

My improved roller-skate consists first of two parts A A forming the frame, in which the bearings for the wheels are provided. The parts A are secured one to another by means of screw-bolts B and corresponding nuts C. At three places the parts A are bent outwardly, as will be seen at *a* in Fig. 2, whereby a space is provided in which the wheels D may rotate and said parts A have the portions *a'* which lie against each other as shown. These wheels have their edges rounded as shown on Fig. 2, and are also bored at several places E in order to reduce their weight. The axles F of these wheels are supported in bearings G provided in the parts A, but the ends of the axles F do not protrude

exteriorly, but are inclosed within the box H. This box is filled with wad or any other material capable of soaking oil, &c., and provided (in its upper part) with a small hole I, preferably of conical shape, said hole being made for the application of oil or any other lubricating material. The wheels D may be all of equal diameter, but the two inner wheels, which are placed rather close to each other, have their bearings provided in a lower plane than the two outer wheels. Thus when both inner wheels touch the ground, the outer wheels are not in contact with the same.

To the parts A of the frame I secure in usual manner uprights J and to these I secure the plates K and L respectively, for supporting the foot of the skater, a screw M being provided at the rear end of the skate in order to move the clamp grasping the heel. This part of the device is however not different from the usual construction of skates and I do not claim the same as my invention.

The novel features of my roller skate are: First, the arrangement of the wheels D in the longitudinal axis of the skate, the inner wheels being placed close to each other and their axles in a plane below that in which the axles of two outer wheels are placed. By this construction and by making the edge of the wheels rounded, the turning of curves is greatly facilitated. Secondly, the arrangement of the ends of the axles F within a closed box H; I thereby prevent completely any escape of the lubricating material from the skate, which escape is very annoying in the usual construction of roller-skates by often occasioning spots on the clothes of the skaters. I may also mention that the skate may be easily taken to pieces in order to clean or to repair the same, as the parts of the frame are only connected by means of screw-bolts and nuts.

Having thus fully described the nature of my invention, what I desire to secure by Letters Patent of the United States is—

1. In a roller skate, the combination with the frame consisting of the parts A, said parts being provided with the outwardly-bent portions *a*, forming spaces for the rollers, and the portions *a'* lying against each other, screw-

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bolts passing through said portions *a'* and provided with nuts whereby the parts A may be readily detached from each other, a series of bearings provided in the portions *a*, the inner bearings being in a lower horizontal plane than the outer ones, of the rollers provided with axles journaled in the said bearings, the inner rollers thereby occupying a position in a lower horizontal plane than the outer rollers, and all of said rollers being arranged in the same vertical plane and longitudinally of the skate, as and for the purpose specified.

2. In a roller skate, the combination with the frame consisting of the two parts A said parts being provided with the outwardly-bent portions *a*, whereby to form spaces for the rollers, and the portions *a'* lying against each other, the screw-bolts B passing through the portions *a'*, the nuts C on said bolts B, the

boxes H carried by said parts A on their outer sides and filled with absorbent material, and the bearings G formed in said parts A, the inner ones of which are in a lower horizontal plane than the outer ones, as described, of the rollers D having rounded edges and provided with axles F journaled in the bearings G and extending within the boxes H, the two inner rollers being arranged in close proximity to each other and somewhat removed from the outer rollers, and in a lower horizontal plane than said outer rollers.

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

FRIEDRICH FRANKENBERG.

Witnesses:

W. HAUPT,

L. A. EDWARDS.