

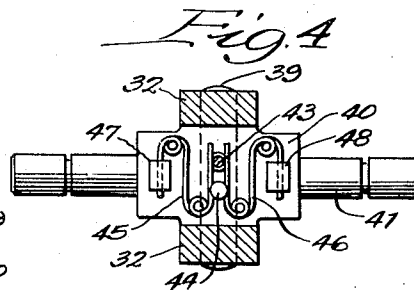
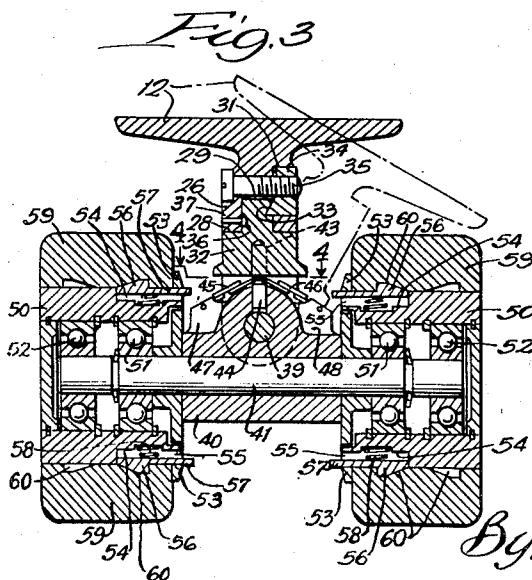
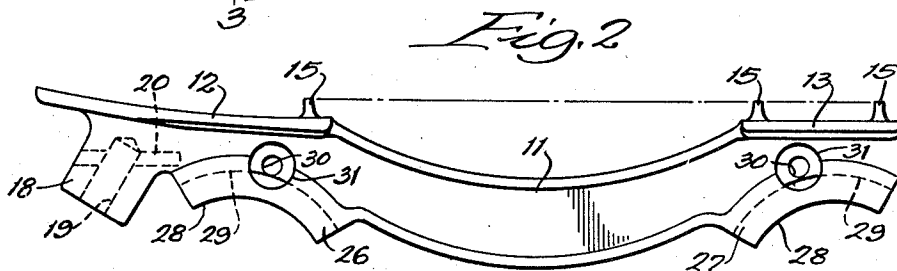
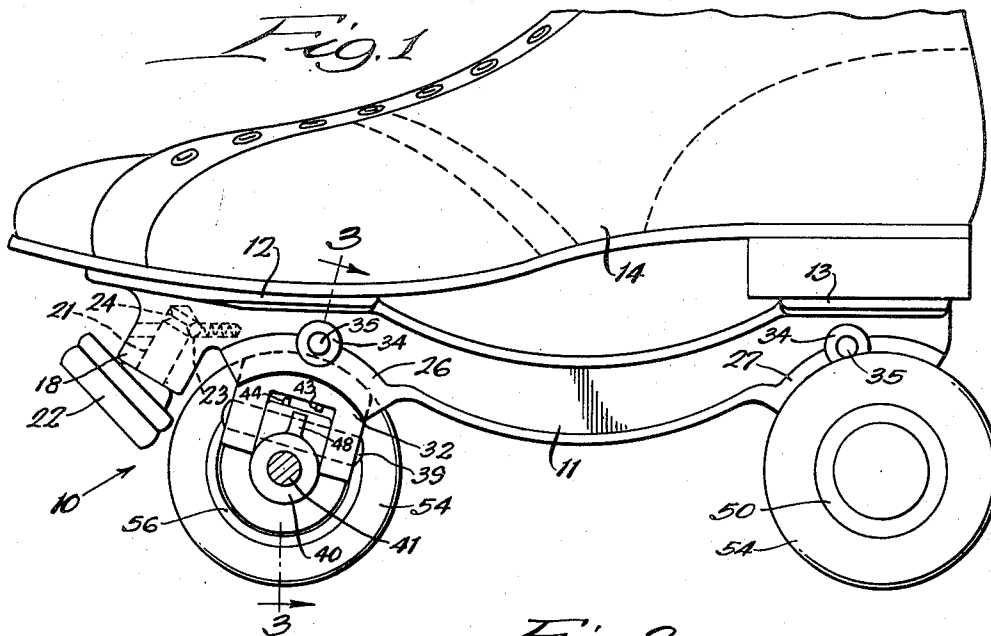
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ROLLER SKATE

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ROLLER SKATE

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6 Claims. (Cl. 280—11.28)

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This invention relates to roller skates.

An object of this invention is to provide an improved roller skate whereby the angular displacement of the roller axes may be predetermined for predetermined lateral tilting of the frame of the roller skate to provide an adjustable turning radius for the roller skate. In this way, the roller skate may be adjusted to correspond to the desire of the skater and to adapt the roller skate for different skating styles. Also, the roller skate may be adjusted for speed skating where the turning radius would be relatively large or for figure skating where the turning radius would be relatively small.

In carrying out this object of the invention, the roller skate frame carries front and rear shafts which in turn carry the roller axes, and means are provided for angularly positioning the shafts about the axes of the roller axes to predetermine the angular displacement of the axes for predetermined lateral tilting of the frame.

Another object of this invention is to provide an improved roller assembly for a roller skate wherein a demountable tire may be readily secured to or detached from the hub.

Further objects of this invention reside in the details of construction of the roller skate and in the cooperative relation between the component parts thereof.

Other objects and advantages will become apparent to those skilled in the art upon reference to the accompanying specification, claims, and drawing in which—

Figure 1 is a side elevational view of the roller skate with one of the rollers removed;

Figure 2 is a side elevational view of the frame of the roller skate;

Figure 3 is a vertical sectional view taken substantially along the line 3—3 of Fig. 1; and

Figure 4 is a partial sectional view taken substantially along the line 4—4 of Fig. 3.

The roller skate is generally designated at 10 and it includes a frame 11 having platforms 12 and 13 for supporting a shoe 14. The frame 11 preferably is cast from a light metal such as magnesium and in the casting operation, nibs 15 are provided on the platforms 12 and 13. The nibs 15 are utilized as supports for the frame 11 during the machining of the frame. After the frame is completely machined, the nibs 15 are removed.

The forward end of the frame 11 is provided with an extension 18 provided with a bore 19 and a cross bore 20. A pin 21 carried by a snubber 22 is received in the bore 19 and is held in place

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therein by a spring-pressed ball 23 in the bore 20 engaging a groove 24 in the pin 21.

The frame 11 is provided with front and rear bolsters 26 and 27 and each bolster is provided with arcuate guide surfaces 28 and 29, the guide surface 29 being located in an arcuate groove. These arcuate guide surfaces are preferably coaxial with the roller axes. The bolsters are also provided with transverse holes 30 and enlarged transverse bores 31. The bores 19 and 20, the arcuate guides 28 and 29, the holes 30, and the bores 31 are preferably machined in the casting 11.

For each bolster 26 and 27 there is provided a yoke 32 having arcuate guide surfaces cooperating with the guide surfaces 28 and 29 of the bolsters. The yokes 32 are also provided with a groove 33 for receiving a clamp 34 having a tongue fitting the groove 33, and with the clamp 34 fitting in the transverse bore 31. The clamps 34 have tapped holes for receiving screws 35 extending through the holes 30 in the bolsters. The sides of the yokes 32 opposite the grooves 33 are also provided with grooves 36 for receiving pins 37 carried by the bolsters.

The pins 37 and the clamps 34 maintain the cooperating arcuate guide surfaces of the yokes and bolsters in engagement and permit angular adjustment of the yokes with respect to the bolsters. When the yokes are adjusted to the desired positions with respect to the bolsters, they are clamped in place by tightening the screws 35. The adjustments of the yokes 32 are angular adjustments about the axes of the roller axes.

The lower ends of the yokes 32 are bifurcated and longitudinally carry shafts 39. The shafts 39 between the bifurcations carry axle housings 40 which in turn carry roller axes 41. The axle housings 40 and hence the axes 41 are pivotally mounted on the shafts 39.

The under side of each yoke 32 is provided with a downwardly extending pin 43 and the upper side of each axle housing is provided with an upwardly extending pin 44. These pins 43 and 44 are offset with respect to each other, as indicated in Fig. 4, and are provided with grooves for receiving springs 45 and 46 carried by pads 47 and 48 formed on the axle housings 40. The springs 45 and 46, in engaging the pins 43 and 44, resiliently maintain the axle housings 40 vertical with respect to the frame 11 and prevent wobbling thereof when the skate is raised from the skating surface. The springs permit the frame 11 to be freely tilted laterally from the ver-

tical position against the action of the springs, as indicated in broken lines in Fig. 3.

When the frame 11 is laterally tilted and the shafts 39 are horizontal, no angular displacement is given to the axle housings 40 and the axles 41. If, however, the shafts 39 are positioned out of the horizontal, as is illustrated in Fig. 1, lateral tilting of the frame 11 causes an angular displacement of the axle housings 40 and hence the axles 41. This angular displacement of the axle housings 40 provides for turning movement of the roller skate. The amount of angular positioning of the shafts 39 determines the amount of angular displacement of the axle housings 40 upon a predetermined amount of lateral tilting of the frame 11 and hence determines the turning radius of the roller skate. By adjustably positioning the yokes 32 angularly with respect to the bolsters 26 and 27, the angular positions of the shafts 39 about the axes of the axles 41 may be adjusted and hence the turning radius of the roller skate may be adjusted.

Suitable indications may be provided on the bolsters and yokes for indicating the angular positions of the yokes with respect to the bolsters whereby adjustment of the turning radius of the roller skate may be readily determined.

In this way, the roller skate may be adjusted to correspond to the desire of the skater and to adapt the roller skate to different skating styles. Also, in this way, the roller skate may be adjusted for speed skating where the turning radius would be relatively large or for figure skating where the turning radius would be relatively small.

The axles 41 rotatably carry hubs 50 by means of ball bearings 51 and 52. Each hub 50 is provided with a flange 53 and an annular groove 54 adjacent the flange. Diametrically opposed slots 55 are provided in the flange 53 and enter into the annular groove 54. A pair of semi-circular rings 56 are located in the annular groove 54 and have projections 57 extending through the slots 55 in the flange 53. Springs 58 urge the semi-circular rings outwardly but the rings may be compressed against the action of the springs. A demountable tire 59 is received on the hub 50 and when so received, it abuts the flange 53. The demountable tire is provided with a pair of grooves 60 adapted to receive engaging surfaces of the semi-circular rings 56.

In placing the tire on the hub, it is slid over the hub and, in so doing, the semi-circular rings 56 are forced inwardly against the action of the springs 58. When the tire abuts the flange 53, the springs 58 snap the semi-circular rings outwardly so that they engage in the groove 60 of the tire. Thus the tire is securely mounted on the hub. In order to remove the tire, the projections 57 are pushed inwardly to collapse the springs 58 whereby the semi-circular rings are moved inwardly to permit removal of the tire. As will be noted, the tire is provided with a pair of grooves 60 so that the tire may be reversely mounted on the hub. By reversing the tire from time to time, the wear of the tire may be maintained substantially uniform.

In this way, an improved assembly for a roller skate is provided wherein a demountable tire may be readily secured to or detached from the hub. This permits ready changing of the tires to adapt the roller skate for various styles of skating and it also permits reversing of the tires to permit for even wear.

While for purposes of illustration, one form of this invention has been disclosed, other forms

thereof will become apparent to those skilled in the art upon reference to this disclosure, and, therefore, this invention is to be limited only by the scope of the appended claims and prior art.

We claim:

1. A roller skate comprising a frame, front and rear shafts carried longitudinally by the frame, an axle provided with rollers carried laterally by each shaft to be angularly displaced upon lateral tilting of the frame, and means for adjustably angularly positioning the shafts about the axes of the axles without displacing the axles with respect to the frame to predetermine the angular displacement of the axles for predetermined lateral tilting of the frame.

2. A roller skate comprising a frame, front and rear shafts carried longitudinally by the frame, an axle provided with rollers carried laterally by each shaft to be angularly displaced upon lateral tilting of the frame, means for adjustably angularly positioning the shafts about the axes of the axles without displacing the axles with respect to the frame to predetermine the angular displacement of the axles for predetermined lateral tilting of the frame, and spring means for resiliently preventing wobbling of the axles about the shafts.

3. A roller skate comprising a frame having front and rear bolsters, a yoke adapted to be carried by each bolster, a shaft carried longitudinally of the frame by each yoke, an axle housing carried by each shaft, an axle carried laterally by each axle housing, said axles being angularly displaced upon lateral tilting of the frame, and an adjustable connection between each yoke and bolster for angularly positioning the shafts about the axes of the axles to predetermine the angular displacement of the axles for predetermined lateral tilting of the frame.

4. A roller skate comprising a frame having front and rear bolsters, a yoke adapted to be carried by each bolster, a shaft carried longitudinally of the frame by each yoke, an axle housing carried by each shaft, an axle carried laterally by each axle housing, a pair of rollers carried by each axle, said axles being angularly displaced upon lateral tilting of the frame, an adjustable connection between each yoke and bolster for angularly positioning the shafts about the axes of the axles to predetermine the angular displacement of the axles for predetermined lateral tilting of the frame, and spring means between the yokes and axle housings for resiliently preventing wobbling of the axle housings.

5. A roller skate comprising a frame, front and rear bolsters on the frame and each provided with an arcuate guide, a yoke for each bolster provided with corresponding arcuate guides, means for clamping the yokes to the bolsters with the arcuate guides in engagement, a shaft carried longitudinally of the frame by each yoke, an axle housing carried by each shaft, an axle carried laterally by each housing at the axes of the arcuate guides, a pair of rollers carried by each axle, said axles being angularly displaced upon lateral tilting of the frame, and the clamping means for the yokes and bolsters providing for angular positioning of the shafts about the axes of the axles to predetermine the angular displacement of the axles for predetermined lateral tilting of the frame.

6. A roller skate comprising a frame, front and rear bolsters on the frame and each provided with an arcuate guide, a yoke for each bolster provided with corresponding arcuate guides, means for clamping the yokes to the bolsters

with the arcuate guides in engagement, a shaft carried longitudinally of the frame by each yoke, an axle housing carried by each shaft, an axle carried laterally by each housing at the axes of the arcuate guides, a pair of rollers carried by each axle, said axles being angularly displaced upon lateral tilting of the frame, the clamping means for the yokes and bolsters providing for angular positioning of the shafts about the axes of the axles to predetermine the angular displacement of the axles for predetermined lateral tilting of the frame, and spring means between the yokes and axle housings for resiliently preventing wobbling of the axle housings.

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