Dec. 11, 1928. 1,694,374

B. E. COLWELL

ROLLER SKATE

Filed March 2, 1926 2 Sheets-Sheet 1

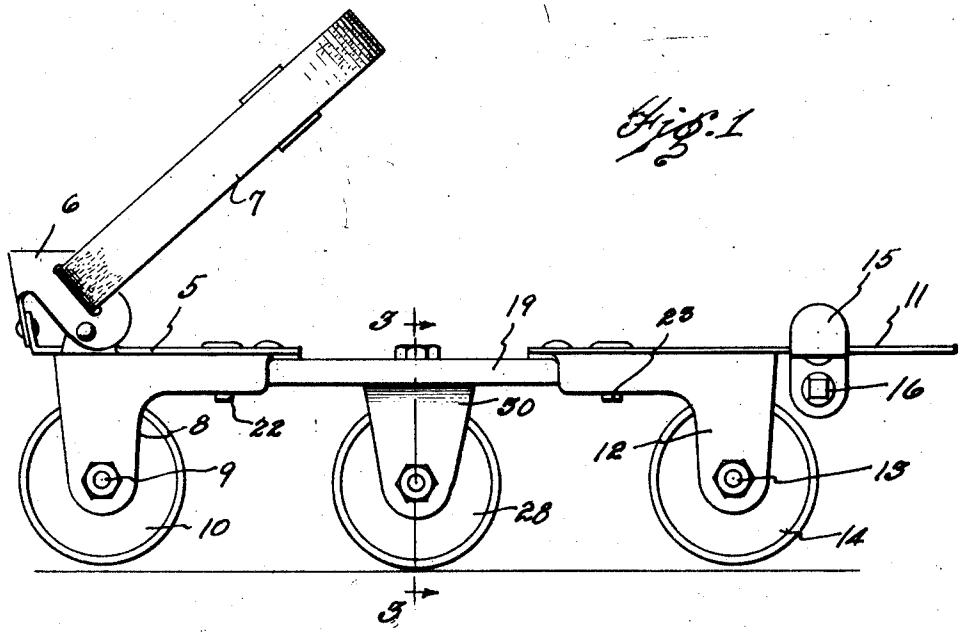


Fig. 1

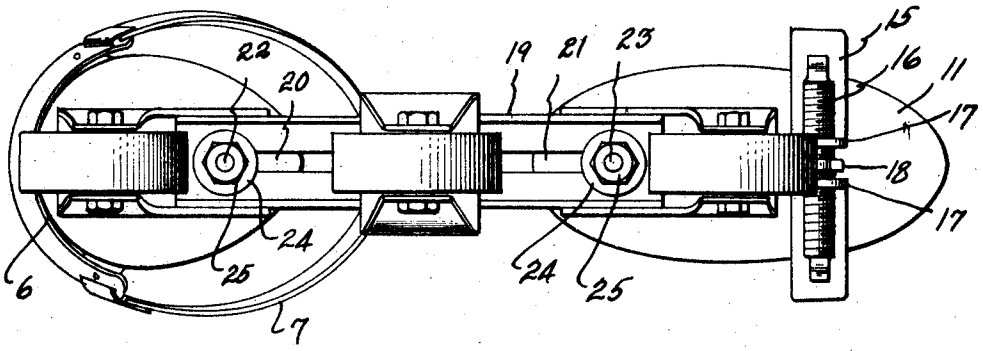


Fig. 2

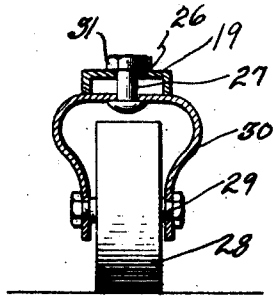


Fig. 3

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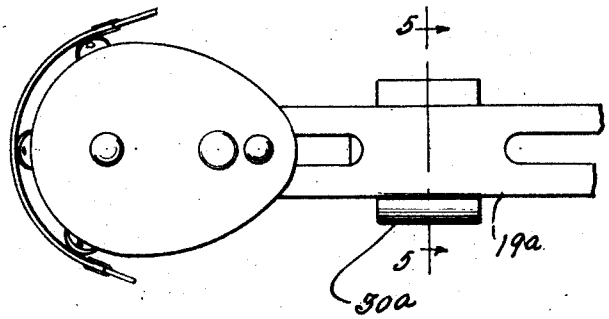


Fig. 4

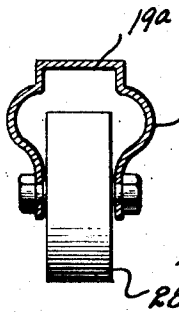


Fig. 5

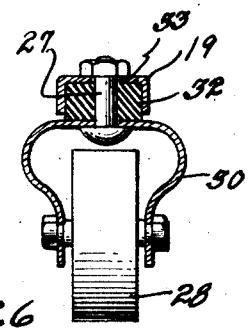


Fig. 6

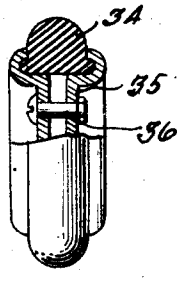


Fig. 8

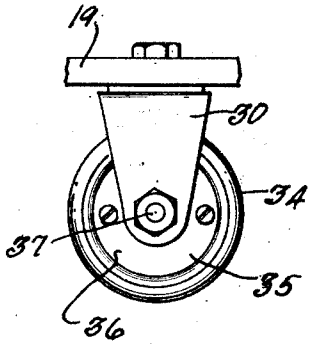


Fig. 7

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Patented Dec. 11, 1928. 1,694,374

UNITED STATES PATENT OFFICE.

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ROLLER SKATE.

Application filed March 2, 1926. Serial No. 91,799.

This invention relates to roller skates, and has for its principal object the provision of a roller skate upon which the skater can more easily make turns than upon the four wheel roller skates now in general use.

Another object of my invention is the provision of a roller skate having three rollers, only two of which are in use at the same time.

A further object of my invention is the arrangement of a three wheeled roller skate with the wheels in line and with the tread of the center wheel terminating in a plane below the lowermost planes of the other wheels.

A further object of my invention is the provision of a three wheeled roller skate having means for adjusting the effective length of the skate while maintaining the center wheel at substantially equal distances from the end wheels.

Other objects and advantages will be apparent from the following description, wherein reference is made to the accompanying drawings illustrating preferred embodiments of my invention and wherein similar reference numerals designate similar parts throughout the several views.

In the drawings:

Fig. 1 is a side elevation of a roller skate constructed in accordance with my invention.

Fig. 2 is a bottom plan view thereof.

Fig. 3 is a detail cross section taken substantially on the line 3—3 of Fig. 1.

Fig. 4 is a detail plan view showing a slightly modified form of central member on which the center or control wheel is mounted.

Fig. 5 is a detail cross section taken substantially on the line 5—5 of Fig. 4.

Fig. 6 is a view similar to Fig. 3 but showing the arrangement of a rubber cushion to enable slight lateral tipping of the center wheel.

Fig. 7 is a side elevation of a center wheel equipped with a rubber tire, and

Fig. 8 is an enlarged detail view of such rubber tired wheel, parts being broken away and shown in section.

Referring now to the drawings, the numeral 5 designates the heel portion of a skate, of any desired size and contour, and preferably formed of sheet metal with a back plate 6 adapted to carry the opposite extremities of a strap 7 and with spaced depending bracket members 8 in which the axle 9 of the rear wheel or roller 10 is mounted. Obviously the heel portion 5 may be variously formed, and its several sections secured to each other in various ways, of which the riveted construction herein shown is an example.

The toe portion 11 of the skate is preferably formed with a sole-engaging plate from which depend spaced bracket portions 12 for the reception of the axle 13 of the front wheel or roller 14. Various means may be employed for securing the toe portion to the foot of the skater, as for example, a pair of laterally adjustable clamps 15 simultaneously moved toward or away from the plate 11 upon the rotation of the shaft 16, which has oppositely threaded portions engaging depending lugs 17 on the clamps and a grooved central portion fulcruming in the depending lug 18 carried by the plate 11. The opposite ends of the shaft 16 are preferably squared for engagement by the usual skate key.

The central portion of the skate preferably comprises a channel bar 19 with spaced downturned sides adapted to fit between the spaced bracket members 8 and 12 of the heel and toe portions respectively of the skate, substantially as shown in Figs. 1 and 2. Elongated slots 20 and 21 are arranged in the upper portion of the channel member 19 substantially as shown in Fig. 2 and a pair of clamping bolts 22 and 23 are carried by the heel and toe portions respectively of the skate with their shank portions passing through the adjacent slots in the central portion 19. Washers 24 and nuts 25 are arranged to bind against the lower face of the central portion 19 to secure the heel and toe portions of the skate in any adjusted position upon the central member 19. Intermediate the ends of the central member 19 is arranged an aperture 26 through which is adapted to pass a securing bolt 27 for the convenient positioning of the bracket member 30 carrying the central roller 28 of the skate, substantially as shown in Figs. 1–3, the headed portion of the bolt 27 passing through an aperture in the upper portion of the bracket 30 whereby the tightening of the nut 31 upon the threaded extremity of the bolt will serve to bind the upper portion of the bracket 30 firmly against the edges of the side portions of the central member 19. The central roller 28 is arranged with the lowermost portion of its tread slightly be-

low the lowermost portions of the treads of the end wheels 10 and 14 (note Fig. 1), and this result can be accomplished either by using a slightly larger roller 28 and securing the axles of all three wheels in substantially the same horizontal plane, or by using wheels of the same diameter and arranging the axle 29 of the central wheel 28 in a horizontal plane below that in which the axles of the end wheels are mounted.

The central wheel 28 may be arranged equidistant from the end wheels 10 and 14 or nearer to either wheel according to the desire of the particular skater using the skate. By means of the double slots it is possible to lengthen or shorten the distance between the end wheels of the skate and at the same time maintain the desired ratio of distance between the center wheel and the end wheels.

The treads of the three wheels of the skate are preferably arranged in substantial alignment (note Fig. 2) and in use the weight of the skater is carried by the center wheel and one of the end wheels. Thus, when the skate is first placed upon the floor the rear wheel 10 and center wheel 28 engage the floor. Then as the other skate is brought forward to take its position upon the floor the skater rocks upon the center wheel 28 until the front wheel 14 engages the floor and the rear wheel 10 is simultaneously lifted therefrom. When it is desired to change direction it is only necessary to shift the weight of the skater in the direction intended, and the skate turns upon the center wheel 28 with comparatively little friction, since a relatively small surface is in engagement with the floor. In practice it has been found that a skater may change his direction through substantially right angles without destroying his equilibrium or greatly impeding his progress. Of course, if he so desires, the skater can make turns on my improved skates by lifting one foot over the other in the manner now generally employed with four wheel roller skates, but he can also make quick turns upon one skate in substantially the same manner possible with the usual form of "rocker" ice skates.

In the embodiment illustrated in Figs. 4 and 5 I have shown the central member 19^a integrally formed with depending bracket arms 30^a to simplify manufacture and assembly of the skate. In Fig. 6 I have shown one method of arranging a resilient block 32 between the channeled central member 19 and the bracket 30 carrying the central wheel 28. The bolt 27 passes through the central portion of the bracket 30, the resilient block 32 and an aperture 33 in the channel member 19 of greater diameter than the diameter of the bolt 27. With this construction the central wheel 28 can tip laterally in the same manner as the front and rear wheels of ordinary four wheel roller skates.

Obviously any desired type of wheel or roller may be employed in connection with my improved skate, and various types of roller bearings interposed between the axles and wheels to facilitate the turning of the wheels with comparatively little effort on the part of the skater. However, it is well known that the usual rollers having metallic treads are exceedingly noisy in use upon rink floors or the like, and to aid in eliminating this excessive noise I prefer to utilize rollers having rubber treads, substantially as shown in Figs. 7 and 8. The rubber tread 34 may be suitably clamped between side discs 35 through the medium of bolts 36 and the hub portions of the wheels (not shown) equipped with roller bearings freely rotatable upon the axles 37.

While it will be apparent that the illustrated embodiments of my invention herein disclosed are well calculated to adequately fulfill the objects and advantages primarily stated, it is to be understood that the invention is susceptible to variation, modification and change within the spirit and scope of the subjoined claims.

Having described my invention, I claim—

1. A roller skate comprising a heel portion carrying a roller, a toe portion carrying a roller, and a central portion carrying a roller, the heel and toe portions being adjustably secured by the same connecting member to the central portion.

2. A roller skate comprising a heel portion carrying a roller, a toe portion carrying a roller, and a central portion carrying a roller and having elongated slots therein adjacent its extremities, and means extending through said slots for adjustably securing the heel and toe portions to said central portion whereby the central roller may be maintained at any desired position relatively to the rollers of the heel and toe portions when the distance between the heel and toe portions is changed.

3. A roller skate comprising a heel portion carrying a roller, a toe portion carrying a roller, and a central portion carrying a roller, the heel and toe portions being adjustably secured to the central portion so that the distance between the heel and toe rollers may be changed while maintaining the desired ratio of distances between the central roller and the heel and toe rollers.

In witness whereof I hereunto set my hand.

BYRON E. COLWELL.