June 16, 1936. F. T. HEDELUND 2,044,211

ROLLER SKATE AND ATTACHING MEANS THEREFOR

Filed May 16, 1935 2 Sheets-Sheet 1

Fig. 1.

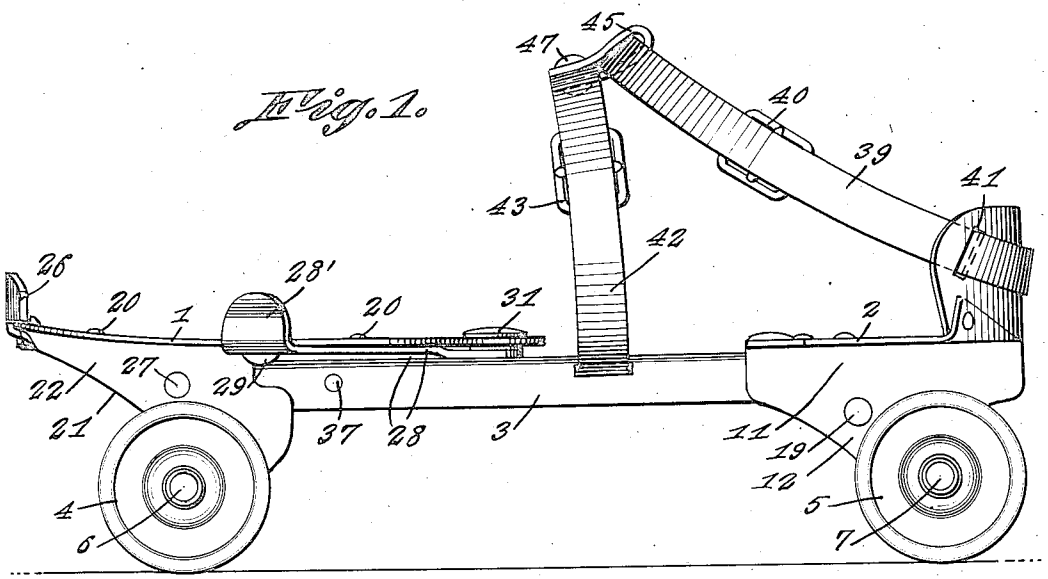
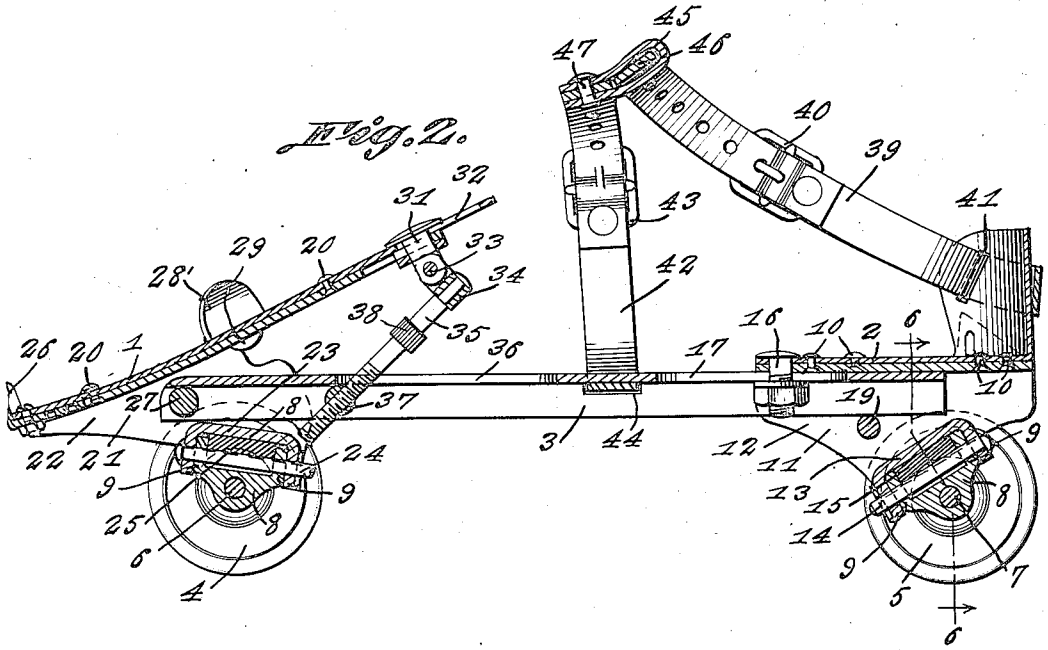


Fig. 2.



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Fig. 4.

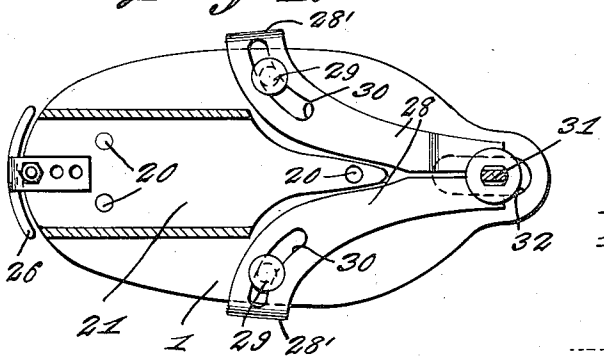


Fig. 6.

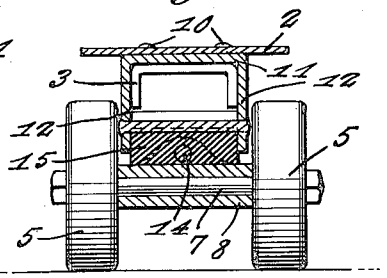


Fig. 3.

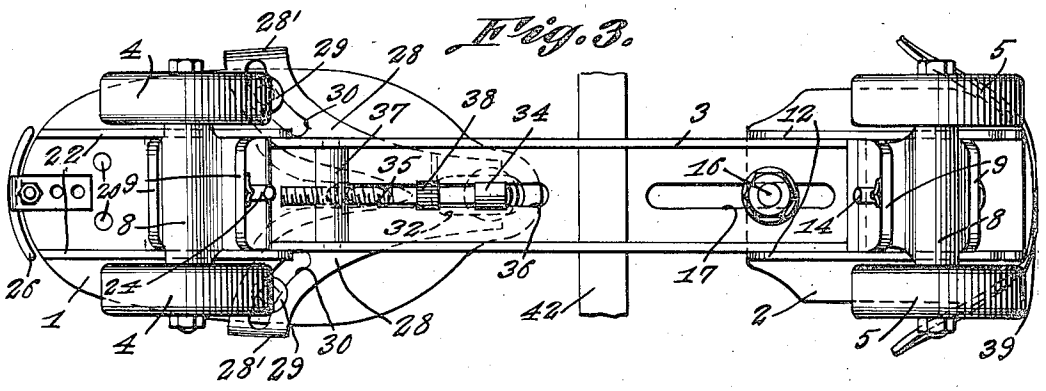
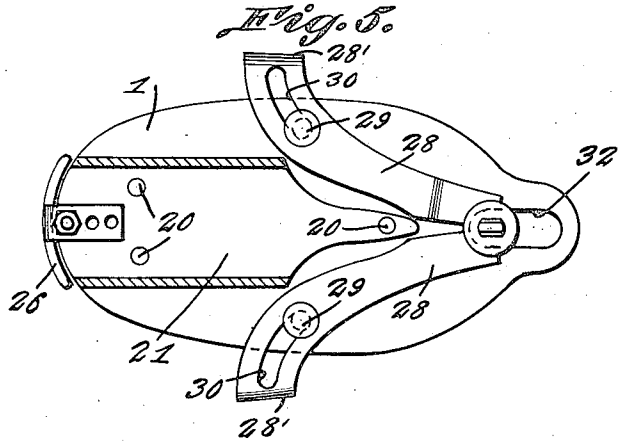


Fig. 5.



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UNITED STATES PATENT OFFICE

2,044,211

ROLLER SKATE AND ATTACHING MEANS THEREFOR

Fred T. Hedelund, Sandusky, Ohio, assignor of one-half to Lewis B. Winters, Sandusky, Ohio

Application May 16, 1935, Serial No. 21,861

10 Claims. (Cl. 208—180)

My invention relates to improvements in skates, particularly roller skates, and attaching means therefor.

Skates as commonly constructed invariably require the use of a key to operate the clamps thereon. Operation of the clamps by this means is laborious, awkward, and otherwise unsatisfactory, particularly when attempted by children. Moreover the loss of a key frequently results in the loss, temporarily at least, of the use of the skates. Also the usual ankle strap tends to creep up on the ankle causing discomfort and hampering free angle movement.

Having the foregoing in mind, the general object of my invention is to obviate the above disadvantages in skate construction by providing a skate equipped with clamping means operative to clamping positions by manipulation of the foot on the skate thereby dispensing with the usuay key and to provide an ankle strap for the skate which is positively prevented from creeping up on the ankle.

Another object is to provide, in conjunction with the above, a skate embodying clamping means operated by movement of the foot in positioning the heel on the skate.

Another object is to provide a skate equipped with clamping means operated, as above set forth, and which is strong, simple in construction, and reliable in operation.

Other objects and advantages of my improvements will be readily understood when the following description and claims are read with reference to the accompanying drawings.

In said drawings:

Figure 1 is a view in side elevation of a roller skate embodying my invention, the parts being shown in normal position.

Fig. 2 is a view in longitudinal vertical section illustrating the operation of the clamping means to disengaging position.

Fig. 3 is a view in bottom plan.

Fig. 4 is a fragmentary view in bottom plan of a toe plate and clamping members forming a part of my invention, the members being shown in clamping position.

Fig. 5 is a view similar to Figure 4 illustrating the clamping members in ineffective or disengaging position, and,

Fig. 6 is a view in transverse section taken on the line 6—6 of Figure 2.

Referring now to the drawings, in its illustrated embodiment, the skate of my invention comprises a toe plate 1, a heel plate 2, a channel truss bar 3 connecting said plates, front and rear wheels 4 and 5, respectively, mounted upon front and rear axles 6 and 7, respectively, and the usual front and rear sleeve-like bolsters 8 mounted on said axles to rock forwardly and rearwardly and each having the usual pair of opposed ears 9 thereon.

The heel plate 2 is riveted, as at 10, to the usual rear yoke 11 comprising side members 12 and a transverse channel bar 13 the latter pivoted to the ears 9 of the rear bolster 8 by a pin 14 so that said heel plate 2 may be rocked laterally on said bolster. The usual rubber cushion 15 is interposed between the bar 13 and rear axle bolsters 8. The connection between the heel plate 2 and the truss bar 3 is the usual bolt 16 extending through a longitudinal slot 17 in said truss bar and having a nut 18 thereon whereby the described heel unit may be adjusted on said bar 3 to lengthen and shorten the skate. A pin 19 on the rear yoke 11 extending transversely of and beneath the truss bar 3, secures said bar and yoke in proper horizontal relation.

The toe plate 1 is riveted, as at 20, to a front yoke 21 comprising side members 22 and a transverse channel bar 23 secured to the front axle bolster 8 by a pin 24 and with a rubber cushion 25 interposed between said bar and bolster all as and for the same purpose as described with reference to the heel plate 11. The toe plate 1 is provided with a suitable adjustable front abutment member 26 for a purpose which will be understood without further explanation. The connection to the truss bar 3 in this instance is a pivotal one in the form of a transversely extending pin 27 passing through said bar 3 whereby the toe plate 1, front yoke 21, and front wheels 4 are mounted for vertical swinging movement on said bar 3. On the under side of the toe plate 1 is a pair of clamping members 28, respectively, having front clamping ends 28' for gripping the sole of the shoe of a skater therebetween. The clamping members 28 are curvilinear in form to extend longitudinally of said plate and to project the clamping ends 28' laterally from the sides of the plate 1. Studs 29 passing through arcuate slots 30 in the front portions of said clamping members secure the latter to the plate 1 for relative separation of their clamping ends by endwise movement of said members forwardly and so that said ends are moved toward each other into clamping relation by endwise movement of said members rearwardly. At their rear ends clamping members 28 are pivotally secured to a headed stud 31 for endwise movement in unison, the stud 31 traveling in a guide slot 32 extending

longitudinally in the plate 1. The lower end of the stud 31 is connected by a transversely extending pivot pin 33 to a U shaped coupling member 34. A longitudinally extending shaft 35 is rotatably secured at its rear end in the coupling member 34. The shaft 35 projects through a longitudinally extending slot 36 in the truss bar 3 and its front end is threaded through a bar 37 extending transversely of the truss bar 3 and mounted at its ends to rock on the latter. A knurled collar 38 is provided on the shaft 35 by means of which the latter may be adjusted relative to the bar 37 to adjust the clamping members 28 as desired. The pivotal axis of the bar 37 is in the rear of the pivotal connection 27 of the toe plate to the truss bar 3 whereby when said plate is swung forwardly and upwardly, as shown in Figure 2, the stud 31 and clamping members 28 are moved forwardly to separate the clamping ends 29 of the latter. Conversely when said plate is swung rearwardly and downwardly to its normal substantially horizontal position the clamping members 28 are moved rearwardly to bring their clamping ends 29 into clamping relation against the sole of the shoe of the skater.

An ankle strap 39, including the usual buckle 40, is secured to the rear end of the heel plate 2 as by looping the same through slots 41 in said plate to extend forwardly and upwardly. A foot strap 42, including a buckle 43, is looped through slots 44 in the truss bar 3 to pass over the foot slightly in advance of the ankle strap 39. A strap 45 looped around the ankle strap 39, as at 46, and riveted to the foot strap 42, as at 47 secures the ankle strap 39 to the foot strap 42 so that said ankle strap is prevented from creeping either up or down on the ankle of the skater.

From the foregoing it will be seen that to attach the skate to the shoe it is merely necessary for the skater to position the toe of his shoe upon the toe plate 1 against the toe abutment 26, while the parts are in the position shown in Figure 2, and rock the toe plate downwardly and rearwardly by movement of the foot to position the heel of the shoe relative to the heel plate, 2. Such manipulation of the foot moves the clamping ends 28' of the clamping members 28 against the edges of the sole of the shoe and clamps the latter therebetween as will be clear from the previous description of the operation of the clamping members 28. The straps 39 and 42 may then be buckled around the ankle and over the foot, respectively. In detaching the skate the said straps are unbuckled and the foot moved in the reverse direction to that described thereby rocking the toe plate upwardly and forwardly and separating the clamping ends 29 of the clamps 28 to disengage the same from the sole of the shoe. It may be stated that the described pivotal connection 27 of the yoke 21 to the bar 3, in the normal position of the parts i. e. the clamping position, is in vertical alignment with the front axle 6 so that the weight upon the heel plate 2 and truss bar 3 will not have a tendency to swing the toe plate 1 forwardly and upwardly and thereby cause the clamping ends 29 to loosen their grip under the weight of the skater.

The foregoing constitutes a detailed description of a preferred embodiment of my invention, but it is to be understood that modification in detail may be resorted to without departing from the inventive concept as disclosed and that right is herein reserved to such modifications and changes falling within the scope of the appended claims.

What I claim is:

1. A skate to be attached to the shoe of a skater and including a roller axle, a foot plate mounted on said axle for independent movement thereon, cooperating clamping members on said plate relatively movable toward and from each other to grip and release said shoe, respectively, and means for moving said members and operative by movement of said plate.

2. A skate to be attached to the shoe of a skater and including a roller axle, a foot plate mounted on said axle for independent rocking movement thereon, cooperating clamping members on said plate movable toward and from each other to grip and release said shoe, respectively, and means for moving said members and operative by said movement of said plate.

3. A skate to be attached to the shoe of a skater and including a roller axle, a foot plate mounted on said axle for vertical rocking movement in opposite directions, respectively, cooperating clamping members on said plate relatively movable to grip and release said shoe, respectively, and means operative to move said members to gripping and releasing positions by movement of said plate in opposite directions, respectively.

4. A roller skate to be attached to the shoe of a skater and including a roller axle, a foot plate mounted on said axle for swinging movement about the same, cooperating clamping members on said plate relatively movable toward and from each other to grip and release said shoe, respectively, and means for moving said members and operative by swinging movement of said plate.

5. A roller skate to be attached to the shoe of a skater and including a roller axle, a foot plate mounted on said axle for vertical rocking movement about the same, cooperating clamping members on said plate relatively movable toward and from each other to grip and release said shoe, respectively, and means for moving said members and operative by swinging movement of said plate.

6. A roller skate to be attached to the shoe of a skater and including a roller axle, a foot plate mounted on said axle for vertical rocking movement about the same, cooperating clamping members on said plate relatively movable to grip and release said shoe, respectively, and means for moving said members and including a connection between said members slidably mounted in said plate, and means for effecting sliding movement of said connection and operative by rocking movement of said plate.

7. A roller skate for attachment to the shoe of a skater and including a roller axle, a foot plate mounted on said axle for vertical rocking movement about the same, cooperating curvilinear members on said plate including clamping ends relatively movable toward and from each other by endwise movement of said members and means for moving said members endwise and including a connection therebetween slidably mounted on said plate, and means for moving said connection and operative by rocking movement of said plate.

8. A roller skate for attachment to the shoe of a skater and comprising front and rear axles, respectively, a heel plate, a toe plate, a yoke supporting the toe plate, on the front axle for rocking movement thereon, a truss bar extending from said heel plate and pivotally connected to said yoke, cooperating clamping members on the toe plate relatively movable to grip and release said shoe, and means for moving said members including a connection therebetween slidable on

said plate, and means for sliding said connection by rocking movement of said plate and including, a shaft operatively connected to said connection and swingably mounted on said truss bar.

9. A roller skate for attachment to the shoe of a skater and comprising front and rear axles, respectively, a heel plate, a toe plate, a yoke supporting the toe plate on the front axle for rocking movement thereon, a truss bar extending from said heel plate and pivotally connected to said yoke, cooperating clamping members on said toe plate relatively movable to grip and release the shoe, means for moving said members including a connection therebetween slidable on said plate, and means for sliding said connection by rocking movement of said plate and including, a shaft operatively connected to said connection and swingably mounted on said truss bar, said shaft being rotatable to adjust the relative positions of said clamping members.

10. A skate to be attached to the shoe of a skater and including a toe plate mounted for vertical rocking movement about a relatively fixed axis, cooperating clamping members on said plate relatively movable to grip and release said shoe, respectively, means for moving said members and operative by rocking movement of said plate, a strap secured to the rear end of said skate to be looped around the ankle of the skater, a second strap secured to said skate in advance of said ankle strap to be looped over the foot of the skater, and a looped connection securing together the outer ends of the loops formed by said straps.

FRED T. HEDELUND.