

O. W. BOCHE.  
 ROLLER SKATE AND WHEEL THEREFOR.  
 APPLICATION FILED MAY 25, 1921.

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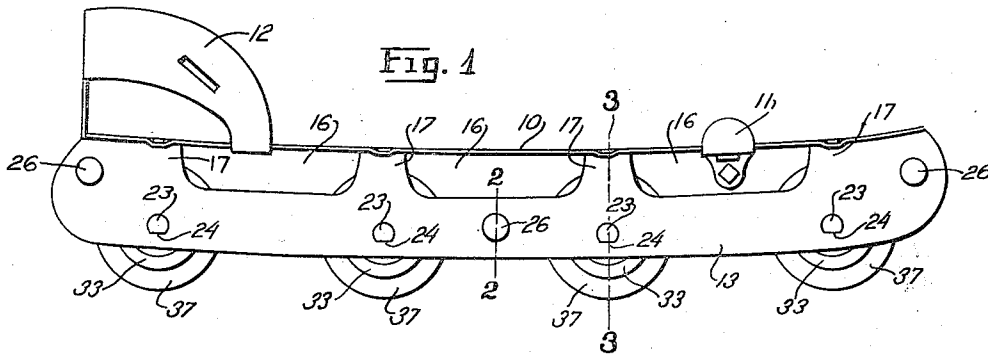


**Fig. 2**

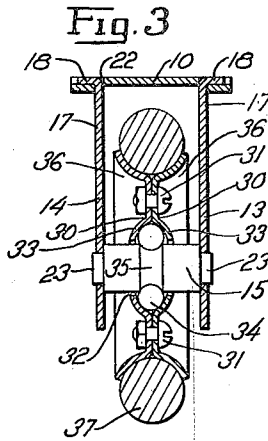
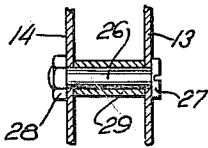


**Fig. 4**

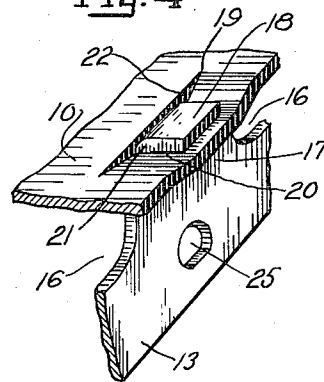
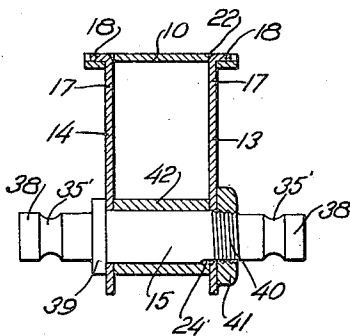


**Fig. 5**



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ROLLER SKATE AND WHEEL THEREFOR.

Application filed May 25, 1921. Serial No. 472,430.

*To all whom it may concern:*

Be it known that OTTO W. BOCHE, a citizen of the United States, and resident of Bridgeport, in the county of Fairfield and State of Connecticut, has invented certain new and useful Improvements in Roller Skates and Wheels Therefor, of which the following is a specification.

This invention relates to roller skates and to wheels therefor.

An object of the invention is to produce an improved roller skate of simple, practical and durable construction and of light weight, and to provide therein novel means for mounting the skate wheels, said novel means consisting of certain of the elements of both said skate and wheels.

A further object is to provide a novel and improved skate wheel that can be economically manufactured and will be reliable and efficient in use.

With the above, as well as other, objects in view, the construction, arrangement and combination of parts constituting the invention will now be fully described, reference being had to the accompanying drawing forming a part of this specification and wherein like reference numerals designate corresponding parts throughout the several figures, and will be hereinafter specifically claimed, it being understood that such changes in details of construction and arrangement of parts may be made as fall within the spirit of the invention and within the scope of the claims.

In said drawings,

Fig. 1 is a side elevational view on a reduced scale of a skate embodying the features of the invention.

Fig. 2 is a sectional view on line 2—2 in Fig. 1;

Fig. 3 is a sectional view on line 3—3 in Fig. 1;

Fig. 4 is a detail perspective view of portions of the foot plate and one of the side plates, illustrating the connection between said plates; and

Fig. 5 is a sectional view, corresponding with the showing of Fig. 3, disclosing a modified form of axle that may be utilized for mounting the skate wheels.

Of the novel skate, 10 denotes a metal foot plate and 11 and 12 denote, respectively,

clamp members of ordinary or preferred construction and for an obvious purpose.

13 and 14 denote, respectively, spaced apart, parallel metal side plates arranged longitudinally of the foot plate adjacent the opposite side edges thereof and extending downwardly at right-angles therefrom to provide supporting means for the solid axles, denoted by 15, of the skate wheels. The side plates are cut away at the several locations indicated 16 for the sake of lightness, thus providing attaching portions 17, positioned directly above the axles, whereby the side plates can be detachably connected with the foot plate, the detachable connection being preferably made in the manner best shown in Figs. 3 and 4. The upper flat edges of the attaching portions snugly engage the under surface of the foot plate, and tongues 18, one for each attaching portion, projecting at right-angles from said flat upper edges, pass through slots 19 in said foot plate to rest in depressions 20 therein, the metal of the bend 21 in each of said tongues being in the plane of the foot plate to lie closely adjacent to or contiguous with the wall 22 of the slot 19, as will be understood.

The axles 15 are provided at their opposite ends with reduced portions 23, and the side plates are provided with openings to snugly receive said reduced portions. The axles are fixed against rotation in the side plates, so that while one of the reduced portions 23 may be cylindrical, the other one is flat on one side, as best shown at 24 in Fig. 1. See also the hole 25 in that portion of the side plate 13 shown in Fig. 4.

The side plates may be held in their right-angular positions with respect to the foot plate and against the ends of the larger portions of the axles 15 by means of screw bolts 26 passing through openings in the side plates and each provided with a head 27 and a nut 28 bearing against the outer faces, respectively, of the side plates. 29 represents bushings located upon the screw bolts and arranged between the side plates, said bushings being of the same length as are the larger portions of the axles, for an apparent reason.

In Fig. 1 of the drawing I have shown a skate equipped with four axles, with an equal number of attaching portions 17, and

with three screw bolts 26. Obviously, a greater or less number of any or all of the elements mentioned may be utilized. It is to be noted that the axles for the extreme forward and rearward wheels of the skate are arranged a slight distance closer to the foot plate than are the other two axles, so that the running surfaces of the two intermediate skate wheels will be at slightly lower elevation than are the running surfaces of the front and rear wheels.

It will be evident that the side plates cannot be disconnected from the foot plate so long as said side plates bear their right-angular relation to the foot plate. When, however, the screw bolts 26 are removed from the side plates, said last mentioned plates can be readily swung outwardly to remove the tongues 17 from the slots 19.

The skate wheels are all duplicates of each other. Of each of said wheels, 30 denotes a pair of disks detachably secured together as by means of small screw bolts 31.

Each of said disks is provided with a central opening 32 to freely receive the solid axle 15, and adjacent said opening the disks are flared outwardly, as denoted at 33, to receive metal balls, denoted by 34, adapted to rest within a circumferential groove 35 in the periphery of the axle 15 and arranged midway between the ends of the larger portion of said axle. Said disks are also flared outwardly adjacent their circumferential margins, as denoted at 36, to provide a bearing rim for the snug reception of the tire 37 composed of hard rubber or other suitable material.

It has already been remarked that the solid axles 15 are fixed in the side plates. It is to be now remarked that the outwardly flared portions 33 of the disks comprise the hubs of the skate wheels, said hubs riding over the metal balls 34 and said balls riding over the groove 35 of the axle.

In Fig. 5 I have disclosed a modified form of solid axle which may be employed in connection with the features of the present invention and which has been designed for use in the instance of double wheel skates. The foot plate, side plates and wheels in the present embodiment may be of the approximate construction of those already described.

The axles 15', extending through the side plates and projecting some little distance beyond each side plate, as denoted at 38, are provided with a collar 39 engaging the side plate 14 and with a threaded portion 40 to receive a nut 41 engaging the side plate 13. Bushings 42, one for each axle 15' and between the side plates, serve the purpose, already described, served by bushings 29. Obviously, a single wheel skate axle 15 can be provided with a bushing similar to the bushing 42 to serve the same purpose, and

when such an arrangement is employed, the screw bolts 26 may be dispensed with if this is found desirable. The axle 15' is fixed against rotation by means of the flat portion 24'.

The grooves 35', 35' in the projecting portions 38 of the axle 15' serve the same purpose as do the grooves 35 in the axles 15.

Having thus fully described the invention, what I claim and desire to secure by Letters Patent is:

1. A roller skate comprising a foot plate, a pair or parallel, disconnected and spaced apart side plates extending downwardly at right-angles from adjacent the opposite edges of the foot plate for approximately the length of said skate, spaced apart means on each side plate detachably and separately connecting the same to said foot plate, said means in the instance of each side plate being arranged along the greater part of the length of said skate, means for insuring the positions of the side plates, axles fixed in and extending between said plates, and wheels on said axles.

2. A roller skate comprising a foot plate, a pair of parallel, disconnected side plates extending downwardly at right-angles from adjacent the opposite edges thereof for approximately the length of said skate, means for detachably connecting each side plate to said foot plate, axles fixed in and extending between said plates, means for insuring the positions of the side plates, and wheels on said axles, said connecting means in the instance of each side plate including a tongue extending at right-angles from the upper flat edge of said side plate and passing through a slot adjacent the side edge of said foot plate.

3. A roller skate comprising a foot plate, a pair of parallel side plates extending downwardly at right-angles from adjacent the opposite edges thereof, means for detachably connecting said side plates to said foot plate, axles fixed in and extending between said side plates, means for insuring the positions of the side plates, and wheels on said axles, said connecting means in the instance of each side plate including a tongue extending at right-angles from the flat upper edge of said side plate and passing through a slot adjacent the side edge of said foot plate, the body of said tongue resting in a depression in said foot plate.

4. A roller skate comprising a foot plate, a pair of parallel side plates extending downwardly at right-angles from adjacent the opposite edges thereof, means for detachably connecting said side plates to said foot plate, axles fixed in and extending between said side plates, means for insuring the positions of the side plates, and wheels on said axles, said connecting means in the instance of each side plate including a tongue ex-

tending at right-angles from the flat upper edge of said side plate and passing through a slot adjacent the side edge of said foot plate, the body of said tongue resting in a depression in said foot plate, and the right-  
5 angular bend in said tongue located in the plane of said foot plate and contiguous with the wall of said slot farthest from said depression.

Signed at Bridgeport, in the county of 10  
Fairfield, and State of Connecticut, this 23  
day of May, A. D. 1921.

OTTO W. BOCHE.