

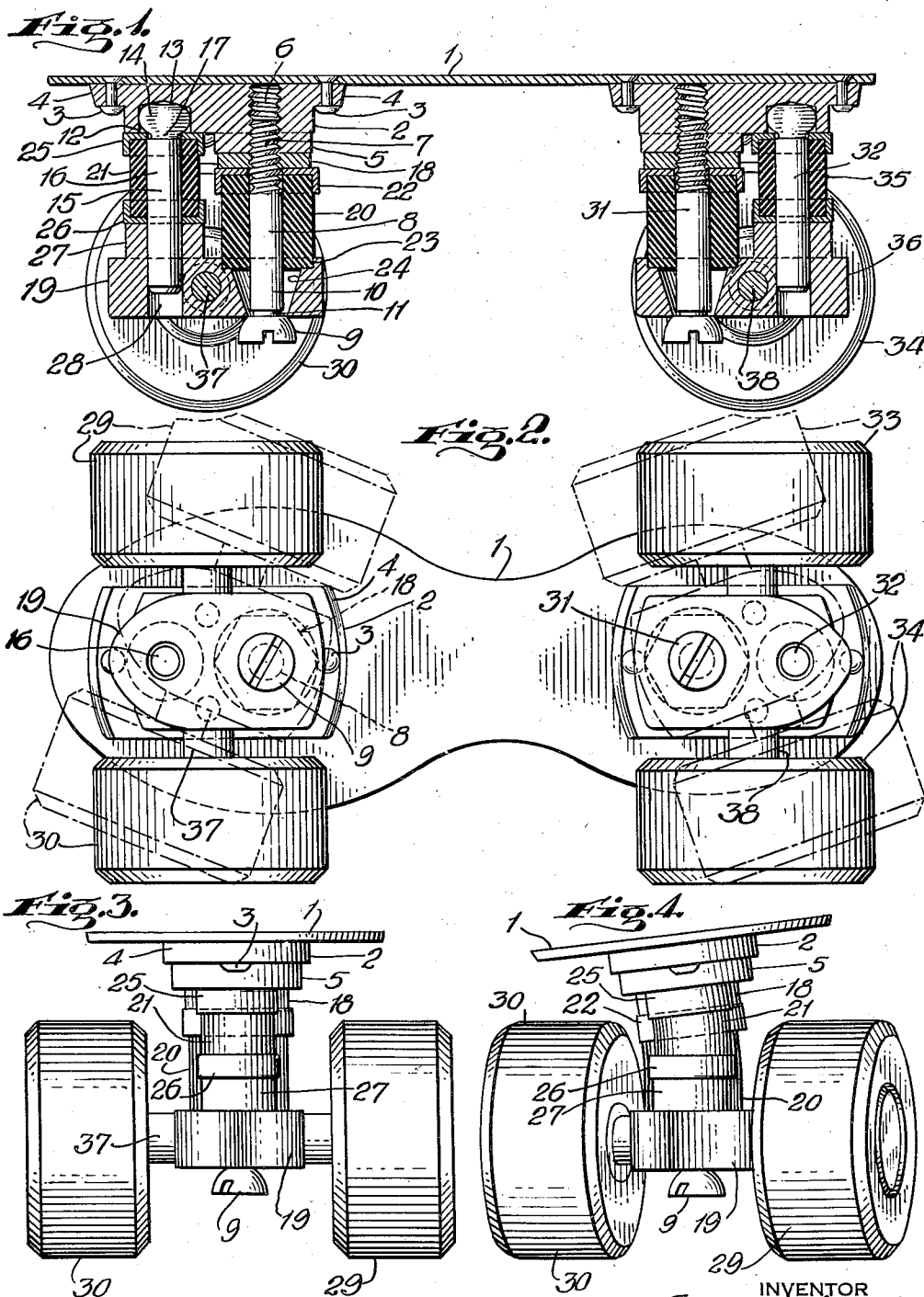
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ROLLER SKATE

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## ROLLER SKATE

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This invention relates to roller skates in general and more especially to the trucks of roller skates.

Among the objects of the present invention it is aimed to provide an improved roller skate particularly adapted for use by performers to facilitate the execution of intricate movements in solo or in ensemble.

In practice with the skates heretofore used for figure skating, especially by performers, the trucks for the wheels instead of being rigid have been constructed to flex characterized by one flexure enabling the shoe supporting plate to form an oblique angle relative to the skate supporting device, and characterized by another flexure in which the axes of the two trucks of a skate form an oblique angle to one another when the performer manipulates the skate to traverse an arc.

Due to this flexibility of the truck construction, extreme care had to be exercised so to adjust the several parts that they would withstand the strains to which they were subjected when the performers in executing a movement would be required to strike the skate receiving surface with a sudden blow, as an instance at the end of a jump or the like.

With the foregoing in mind, the present invention aimed to provide an improved roller skate, the trucks of which would not only lend themselves with facility to flex when called upon to do so, but also effectively withstand the severe blows to which the trucks are subjected in executing certain movements.

These and other features, capabilities and advantages of the invention will appear from the subjoined detail description of one specific embodiment thereof illustrated in the accompanying drawings, in which

Fig. 1 is a longitudinal section of a roller skate made according to the present invention.

Fig. 2 is a plan view showing in full lines the position of the wheels to one another when the trucks are not flexed, and showing in dash and dot lines the position of the two pairs of wheels when the trucks are inclined to execute a curve.

Fig. 3 is a front elevation of the skate shown in Fig. 1 when the truck is not flexed.

Fig. 4 is a front elevation of the skate shown in Fig. 1 when the truck is flexed.

In the embodiment shown the shoe supporting plate 1, preferably composed of metal, is secured to a front casting 2 by the rivets 3 connecting the lateral diminished portions 4 with the plate 1. The casting 2, see Fig. 1, preferably has an enlarged portion 5 provided with an internally screw threaded opening 6 to receive the

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threaded portion 7 of the screw 8. This screw 8 preferably has a convex head 9 spaced from the smooth shank portion 10 by the annular recess 11. To the front of the enlargement 5 the casting is provided with a cylindrical cavity 12 having a conical depression 13 to receive the spherical head 14 of the pin 15, the smooth shank 16 of which is spaced from the spherical head 14 by the diminished neck or recess 17. In order to predetermine the position of the screw 8 in the casting 2, the lock nut 18 is provided. When the screw 8 has been screwed into the casting the required distance, the lock nut 18 is tightened against the enlargement 5 as shown.

The screw 8 forms a fixed point around which the axle supporting plate 19 may rock, and the pin 15 on the other hand forms a movable anchor relative to which the plate 19 is slidable.

Two yieldable blocks or plugs 20 and 21, preferably composed of rubber, are provided to cooperate with the screw 8 and pin 15 to enable the plate 19 to incline relative to the casting 2. The plug 20 preferably has a metal cap 22 at one end to rest against the lock nut 18, the cap 22 and plug 20 having alined openings to receive the screw 8 as shown in Fig. 1. The outer end of the plug 20 rests in the annular recess 23 formed in the plate 19. This recess 23 is formed at one end of the conical opening 24 in the plate 19, the outer smaller end of which is larger than the smooth shank portion 10 of the screw 8 but smaller than the head 9 so that depending upon the compression of the plug 20 in the use of the skate, the shank portion 10 of the screw will have considerable freedom in the recess 24 with the edge of the plate 19 at the end of the recess 20 riding on the convex face of the head 9.

The plug 21 has a cap 25 adjacent the casting 2 and a second cap 26 to rest against the extension 27 of the plate 19. The caps 25, 26 and plug 21 have registering openings to receive the plain shank portion 16 of the pin 15 which is slidably mounted in the opening 28 extending through the extension 27 and main portion of the plate 19.

As aforesaid, depending upon the pressure exercised on the plate 1 by the performer and the direction of the pressure, the plugs 20 and 21 will be compressed with the wheels 29 and 30 of the plate 19 to assume the dash and dot line position shown in Fig. 2, or to assume any position between the dash and dot line position and the full line position shown in Fig. 2, and at the same time the plate 1, see Fig. 4, may assume the position shown in Fig. 4, or any position

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between the position shown in Fig. 4 and the position shown in Fig. 3.

The truck at the rear of the plate 1 is identical to the truck secured to the front of the plate 1 except that the screw 31 instead of being at the rear of the truck, as is the case with the screw 8, is now at the front of the truck, and the movable pin 32, instead of being at the front of the truck is now at the rear of the truck. When the screw 31 and pin 32 of the rear truck and the screw 8 and pin 15 of the front truck are assembled as shown, then the plate 1, see Fig. 4, depending upon the pressure exercised upon the same, and the direction of pressure exercised on the same, will assume either the position shown in Fig. 4, or any position between that shown in Fig. 4 and that shown in Fig. 3, and the front truck including the wheels 29 and 30 and the rear truck including the wheels 33 and 34 depending upon the pressure exercised and the direction of pressure will assume either the dash and dot line position shown in Fig. 2 or any position between the dash and dot line position shown in Fig. 2 and the full line position shown in Fig. 2.

The rear and front trucks as will appear from Fig. 2 will operate or rather incline in opposite directions when a pressure is exercised at an angle to the plate 1. This obviously results from the fact that the screw 8 and pin 15 are just the reverse in position to the screw 31 and pin 32 of the rear truck, and the trucks pivoting around the screws 8 and 31 and the yieldable plugs, such as the plugs 21 and 35 of the pins 15 and 32, respectively, contracting or yielding to permit the plates 19 and 36 to slide relative to the pins 15 and 32 and rotate or rock relative to the screws 8 and 31.

It would also appear from the foregoing that since the pin 15 and screw 8 of the front truck and the screw 31 and pin 32 of the rear truck are normally parallel to one another when the skater strikes the ground after a jump, the yieldable plug surrounding the screws 8 and 31 and pins 15 and 32 will yield or compress permitting the screws 8 and 31 and pins 15 and 32 to slide downwardly relative to the plates 19 and 36 and thus in the first place serve as a shock absorber for the impact, and in the next place protect the screws 8 and 31 and pins 15 and 32 from any undue strains.

The wheels 29 and 30 are journaled on the ends of the axles 37 mounted in the plate 19, and the wheels 33 and 34 are journaled on the ends of the axle 38 mounted in the plate 36.

It is obvious that various changes and modifications may be made to the details of construction without departing from the general spirit of the invention as set forth in the appended claims.

I claim:

1. The combination, in a roller skate having a shoe supporting plate, an axle, and a pair of wheels rotatably mounted on said axle, of a truck including a casting secured to the shoe supporting plate, said casting having an internally threaded elongated opening and a shallow recess, a second plate in which said axle is mounted and having a conical shallow opening and an elongated cylindrical opening, a screw screwthreadedly connected in the internally threaded elongated opening of said casting and extending through the conical opening of said second plate, a pin having a head movably mounted in the shallow recess of said casting and slidably mounted in the elongated

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cylindrical opening of said second plate, and extended yieldable means disposed between said second plate and said casting to enable said second plate to slide relative to said screw and pin upon compression of said yieldable means.

2. The combination, in a roller skate having a shoe supporting plate, an axle, and a pair of wheels rotatably mounted on said axle, of a truck including a casting secured to the shoe supporting plate, said casting having an internally threaded elongated opening and a shallow recess, a second plate in which said axle is mounted and having a conical shallow opening and an elongated cylindrical opening, a screw screwthreadedly connected in the internally threaded elongated opening of said casting and extending through the conical opening of said second plate, a pin having a head movably mounted in the shallow recess of said casting and slidably mounted in the elongated cylindrical opening of said second plate, and extended yieldable means disposed between said second plate and said casting to enable said second plate to slide relative to said screw and pin upon compression of said yieldable means, said screw and pin normally being disposed parallel to one another, said yieldable means enabling said second plate under compression to incline relative to said shoe supporting plate.

3. The combination, in a roller skate having a shoe supporting plate, an axle and a pair of wheels journaled on said axle, of a truck including a casting secured to said shoe supporting plate, said casting having an internally threaded elongated opening and a shallow recess, a second plate in which said axle is mounted and having a conical shallow opening and an elongated cylindrical opening, a screw screwthreadedly connected in the internally threaded elongated opening of said casting, a pin having a head movably mounted in the shallow recess of said casting, said pin being slidably mounted in the elongated cylindrical opening of said second plate, the outer end of said screw being freely movable in the conical recess of said second plate, and extended yieldable means disposed between said casting and said second plate and compressible to enable said second plate to rock and incline relative to said shoe supporting plate.

4. The combination, in a roller skate having a shoe supporting plate, a pair of axles, and a pair of wheels journaled on each axle, of a truck for each axle including a second plate in which the axle is mounted, said second plate having a conical shallow opening and an elongated cylindrical opening, a casting secured to the shoe supporting plate, said casting having an internally threaded elongated opening and a shallow recess, a screw screwthreadedly connected in the internally threaded elongated opening of said casting and slidably and freely rockable in the conical opening in said second plate, a pin having a head movably mounted in the shallow recess in said casting and slidably in the elongated cylindrical opening in said second plate, and extended yieldable means disposed between said casting and said second plate compressible to enable said second plate to rock and incline relative to said shoe supporting plate.

5. The combination, in a roller skate having a shoe supporting plate, a pair of axles, and a pair of wheels journaled on each axle, of a truck for each axle including a second plate in which the axle is mounted, said second plate having a conical shallow opening and an elongated cylin-

drical opening, a casting secured to the shoe supporting plate, said casting having an internally threaded elongated opening and a shallow recess, a screw screw-threadedly connected in the internally threaded elongated opening of said casting and slidable and freely rockable in the conical opening in said second plate, a pin having a head movably mounted in the shallow recess in said casting and slidable in the elongated cylindrical opening in said second plate, and extended yieldable means disposed between said casting and said second plate compressible to enable said second plate to rock and incline relative to said shoe supporting plate, the screw of the truck at the front end of the shoe supporting plate being disposed to the rear of its pin and the screw of the truck at the rear end of the shoe supporting plate being disposed to the front of its pin.

6. The combination, in a roller skate having a shoe supporting plate, a pair of axles, and a pair of wheels journalled on each axle, of a truck for each axle including a second plate in which the axle is mounted, said second plate having a conical shallow opening and an elongated cylindrical opening, a casting secured to the shoe supporting plate, said casting having an internally threaded elongated opening and a shallow recess, a screw screw-threadedly connected in the internally threaded elongated opening of said casting and slidable and freely rockable in the conical opening in said second plate, a pin having a head movably mounted in the shallow recess in said casting and only slidable in the elongated cylindrical opening in said second plate, and extended yieldable means disposed between said casting and said second plate compressible to enable said second plate to rock and incline relative to said shoe supporting plate, said yieldable means including cylindrical rubber blocks mounted on each screw and each pin.

7. The combination, in a roller skate having a shoe supporting plate, a pair of axles, and a pair of wheels journalled on each axle, of a truck for each axle including a second plate in which the axle is mounted, said second plate having a conical shallow opening and an elongated cylindrical opening, a casting secured to the shoe supporting plate said casting having an internally threaded elongated opening and a shallow recess, a screw screw-threadedly connected in the internally threaded elongated opening of said casting and slidable and freely rockable in the conical opening in said second plate, a pin having a head movably mounted in the shallow recess in said casting and only slidable in the elongated cylindrical opening in said second plate, and extended yieldable means disposed between said casting and said second plate compressible to enable said second plate to rock and incline relative to said shoe supporting plate, the screw of the truck at the front end of the shoe supporting plate being disposed to the rear of its pin and the screw of the truck at the rear end of the shoe supporting plate being disposed to the front of its pin, said yieldable means including cylindrical rubber blocks of substantial length mounted on each screw and each pin.

8. The combination, in a roller skate having a shoe supporting plate, a pair of axles, and a pair of wheels journalled on each axle, of a truck for each axle including a second plate in which the axle is mounted, said second plate having a conical shallow opening and an elongated cylindrical opening, a casting secured to the shoe supporting plate, said casting having an internally threaded elongated opening and a shallow recess, a screw screw-threadedly connected in the internally threaded elongated opening of said casting and slidable and freely rockable in the conical opening in said second plate, a pin having a head movably mounted in the shallow recess in said casting and only slidable in the elongated cylindrical opening in said second plate, and extended yieldable means disposed between said casting and said second plate compressible to enable said second plate to rock and incline relative to said shoe supporting plate, said yieldable means including cylindrical rubber blocks of substantial length mounted on each screw and each pin, said screw having a head engaging the outer face of said second plate and determining the required compression of said rubber blocks.

9. The combination, in a roller skate having a shoe supporting plate, a pair of axles, and a pair of wheels journalled on each axle, of a truck for each axle including a second plate in which the axle is mounted, said second plate having a conical shallow opening and an elongated cylindrical opening, a casting secured to the shoe supporting plate, said casting having an internally threaded elongated opening and a shallow recess, a screw screw-threadedly connected in the internally threaded elongated opening of said casting and slidable and freely rockable in the conical opening in said second plate, a pin having a head movably mounted in the shallow recess in said casting and only slidable in the elongated cylindrical opening in said second plate, and extended yieldable means disposed between said casting and said second plate compressible to enable said second plate to rock and incline relative to said shoe supporting plate, the screw of the truck at the front end of the shoe supporting plate being disposed to the rear of its pin and the screw of the truck at the rear end of the shoe supporting plate being disposed to the front of its pin, said yieldable means including cylindrical rubber blocks of substantial length mounted on each screw and each pin, said screw having a head engaging the outer face of said second plate and determining the required compression of said rubber blocks.

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