July 4, 1939. C. B. ECTON 2,164,805

ROLLER SKATE

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Fig. 1.

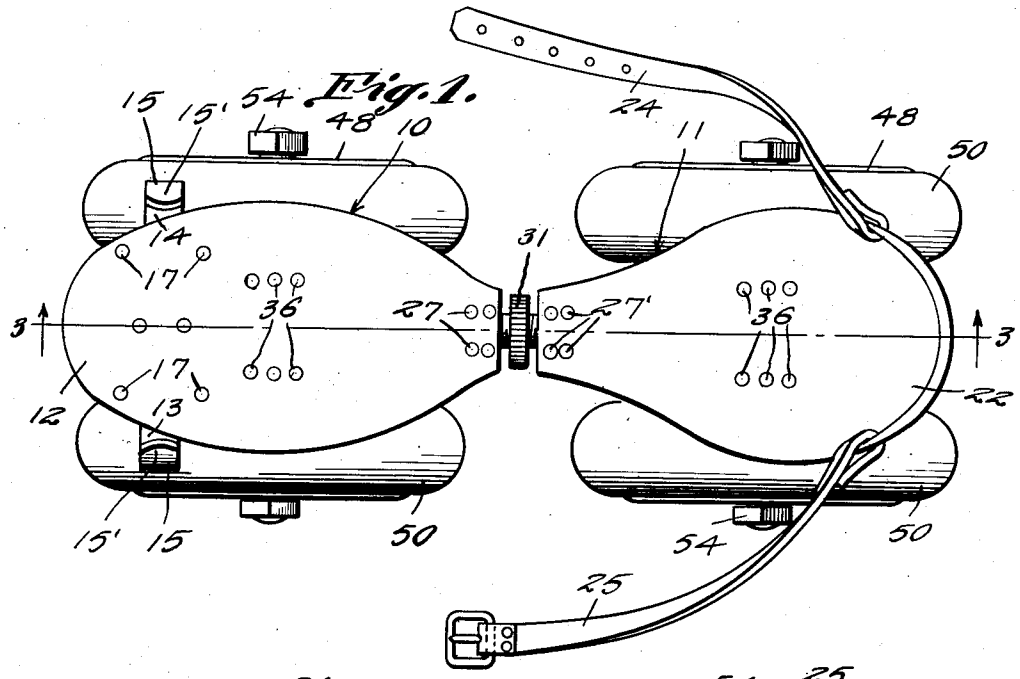
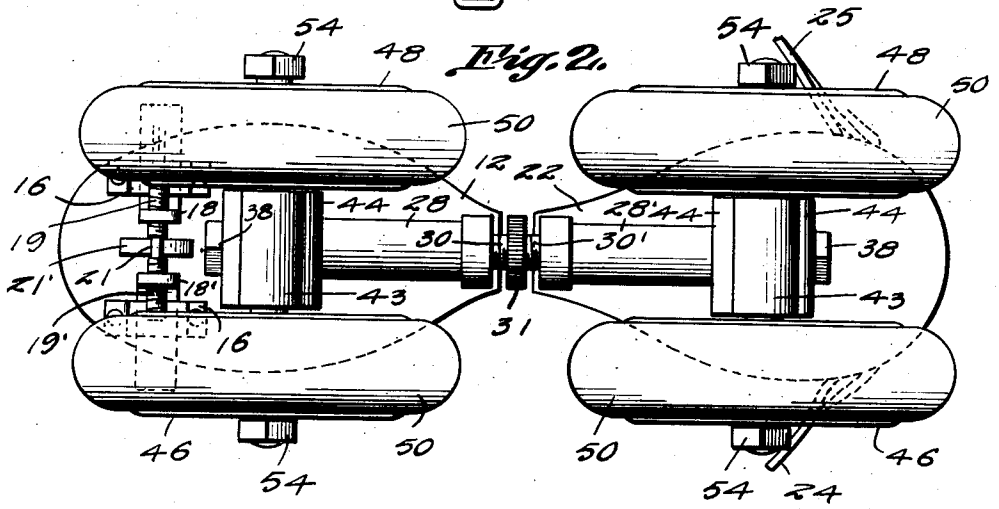


Fig. 2.



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Fig. 3.

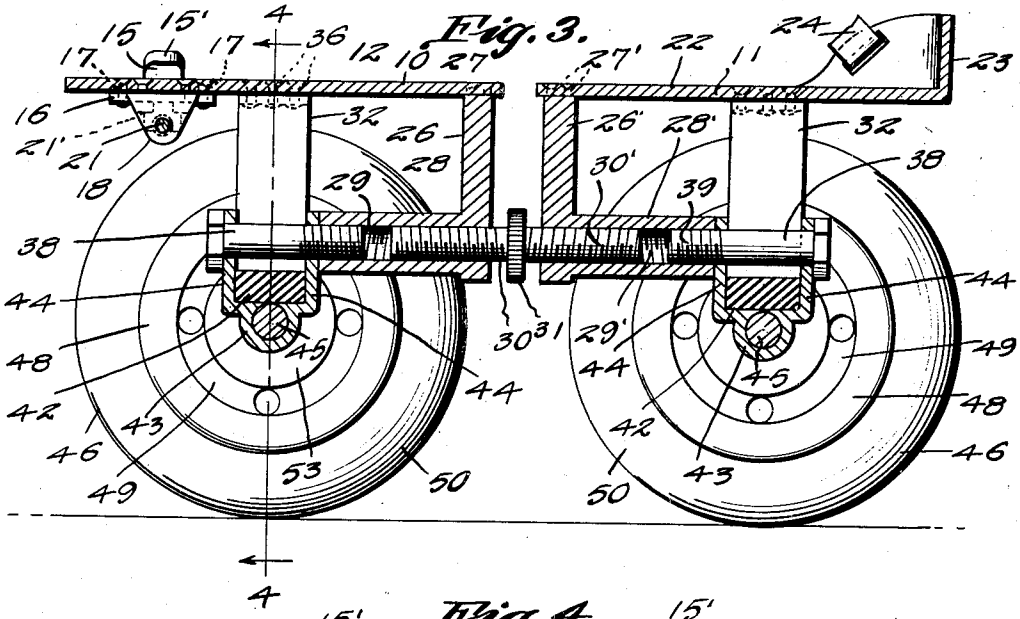
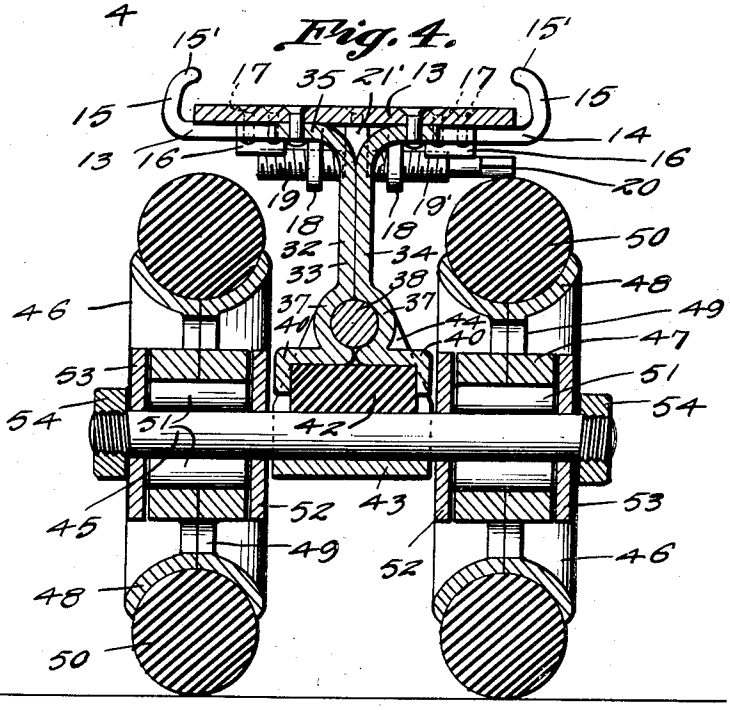


Fig. 4.



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UNITED STATES PATENT OFFICE

2,164,805

ROLLER SKATE

Clarence B. Ecton, Slater, Mo.

Application March 16, 1938, Serial No. 196,293

5 Claims. (Cl. 280—11.26)

This invention relates to roller skates and has for its principal object to provide an improved extensible structure having the requisite stability for safety and at the same time being flexible to certain relative compensating movement of the adjusted parts of the skate in use.

With the foregoing and other objects to be attained, as will hereinafter more fully appear, the invention consists in the novel general structure and in the particular parts and combinations and arrangements of parts thereof as set forth in the following description and pointed out in the appended claims, reference being had to the accompanying drawings illustrating a preferred practical adaptation of the invention, in which

Figure 1 is a top plan view of the assembled skate structure;

Figure 2 is an inverted plan view;

Figure 3 is a longitudinal vertical section taken on or about the line 3—3 of Figure 1; and

Figure 4 is a transverse section on the line 4—4 of Figure 3.

In the preferred embodiment of the invention as illustrated in the drawings, the skate comprises a front truck section 10 and a rear truck section 11, the former comprising a sole plate 12 provided at its forward portion with a transverse sole-clamping means including a pair of oppositely disposed slide bars 13, 14, mounted on the under side of the plate 12 and provided at their outer ends with upturned lug portions 15, the end portions 15' of which latter are turned inwardly to overhang the marginal portion of the shoe sole. These clamping bars 13, 14, are of the type usually employed for the attachment of roller skates to shoe soles and in themselves form no part of the present invention except as they enter generally into the structure. Therefore, it is sufficient to merely further describe that said bars are slidably fitted in strap-like clips or bracket members 16 riveted, as at 17, to the under side of the plate 12 and that the inner ends of said bars 13, 14, are formed into depending lugs 18 which are apertured and respectively screw-threaded to receive the oppositely screw-threaded portions 19, 19' of an adjusting screw which is provided at one end with the usual polygonal key-receiving portion 20, said adjusting screw having a reduced middle portion 21 engaged in a notched lug 21' on the under side of the plate 12.

The rear truck section 11 includes the heel plate 22 which, as shown, is provided at its rear portion with an arcuate upstanding flange 23, in which latter the usual pair of straps 24, 25, are provided for attaching the rear truck section to the shoe in use. However, any other approved attaching means may be substituted in place of said straps 24, 25.

The front truck section further includes a bracket element 26, the upper body portion of which is in the form of a rectangular bar which is riveted at its upper end, as at 27, to the under side of the sole plate 12 at the rear end thereof, said bar having a forwardly extending horizontal tubular arm 28, the bore of said extension 28 being screw threaded, as at 29, to receive the correspondingly threaded end portion 30 of a coupling screw element which is provided at its middle portion with a knurled annular enlargement or collar 31 or other suitable means for rotating it. The opposite end portion of the coupling screw member is reversely screw threaded, as at 30', and received in the correspondingly internally threaded portion 29' of a tubular extension 28' of a bracket 26' identical with the bracket 26, except as to the reverse screw threading of the bore 29', and said bracket member 26' being riveted to the under side of the forward portion of the heel plate 11, as at 27'.

Secured to the middle portions of both the front and rear truck plates 12 and 22 are like supporting brackets 32, each comprising a pair of plates 33, 34 whose intermediate portions meet flatwise together and may be riveted, welded or otherwise secured, if desired. As shown, the upper end portions of these plates 33, 34 are outturned, as at 35, and riveted, as at 36, to the under sides of the respective plates 12 and 22, the lower portions 37 of said plates 33, 34, being oppositely bowed to form a cylindrical bearing to receive a swivel bolt 38, which latter is threaded at its inner end, as at 39, and received in the outer end portion of the bracket extension 28 or 28', as the case may be. The extreme lower end portions 40 of the plates 33, 34, are turned outwardly at the under side of the cylindrical bolt-receiving portion 37 and thence flanged downwardly as at 41, to provide a rectangular seat portion for a rubber cushioning and compensating block 42 which is interposed between said seating portion of the supporting bracket 32 and an axle bearing clip 43 having up-turned ears 44 overlapping the opposite ends of the bearing 37 and provided with aligned apertures for the reception of the securing bolt 38 on which the bearing clip has limited rocking movement yieldably resisted by said rubber block 42.

Extending through the bearing clip 43 of both the front and rear truck sections are axles 45 on

the opposite end portions of which the wheels 46 are journaled. As shown, the respective wheels 46 are made in two half sections, each comprising a hub portion 47 attached to the rim portions 48 by webs 49. As shown, the wheel rims are arcuate in cross section and have rubber tires 50 of correspondingly round cross section fitted therein, the hub portions 47 being cylindrical and provided with roller bearings 51 which ride directly on the shaft 45. Washers 52 are provided on the shaft 45 between the bearing 43 and the inner ends of the hubs 47 of the wheels 46, said washers 52 serving not only as end thrust spacers for the wheel hubs 47 but also to retain the roller bearings within the hubs, while similar washers 53 are provided on the adjacent outer end portions of the shaft 45.

By adjusting the connecting screw element lengthwise in the tubular extensions 28, 28' of the bracket members 26, 26' the two truck sections 10 and 11 are moved toward or from each other according to the direction in which the adjusted screw is rotated, which adjustment is maintained after the foot plate 12 and heel plate 22 are attached to the shoe in use, and at the same time there is a limited rocking movement permitted the bearing clips 43 of the axle shafts 45 about the axes of the swivel bolt 30, which movement is resiliently opposed by the rubber blocks 42 so that there is sufficient inherent flexibility in the structure to compensate for relative foot and leg movement of the skater and which is of advantage in controlling the skate in use, and yet the general structure and particular means of longitudinal adjustment of the two truck sections of the skate is such that ample strength and stability is afforded for safety. So, too, easy operation and speed is attained with elimination of noise by the novel provision of the roller bearings and rubber tires for the wheels.

Obviously, the structure admits of considerable modification within the spirit and scope of the invention as defined by the appended claims. The invention, therefore, is not limited to the specific construction and arrangements shown.

What is claimed is:

1. A roller skate comprising front and rear truck sections, the front section including a sole-plate and the rear section a heel-plate, each plate having a wheel-supporting bracket and an adjusting bracket having a horizontal longitudinal tubular extension in cooperative relation to said wheel supporting bracket, said tubular extensions of the adjusting brackets being reversely screw-threaded interiorly, an adjusting screw having reversely screw-threaded opposite end portions fitted in said tubular bracket portions whereby to connect the two truck sections with longitudinal adjustment, and longitudinal swivel bolts connecting the wheel supporting brackets with said tubular bracket extensions.

2. A roller skate comprising separate front and rear truck sections, each section having a depending wheel-supporting bracket, said bracket having a longitudinal bearing portion, an axle clip having opposed lug extensions provided with apertures aligned with the bearing portion of said supporting bracket, a companion bracket having a longitudinal tubular extension in cooperatively opposed relation to said wheel supporting bracket, the bore of said companion bracket extension being aligned axially with said aligned longitudinal bearing of said wheel supporting bracket and apertures in the lug extensions of said axle clip, a swivel bolt inserted through said aligned axle clip openings and bearing portion of the wheel supporting bracket and having a screw-threaded engagement at its inner end within the outer end portion of said tubular extension of said companion bracket, and a longitudinal adjusting screw having its opposite end portions reversely screw-threaded and fitted within correspondingly screw threaded meeting end portions of the tubular extensions of the companion bracket members of the front and rear truck sections whereby to adjustably connect the two truck sections to vary the working length of the skate body and wheel base.

3. A roller skate comprising separate front and rear truck sections, each section having a depending wheel-supporting bracket, said bracket having a longitudinal bearing portion, an axle clip having opposed lug extensions provided with apertures aligned with the bearing portion of said supporting bracket, a companion bracket having a longitudinal tubular extension in cooperatively opposed relation to said wheel supporting bracket, the bore of said companion bracket extension being aligned axially with said aligned longitudinal bearing of said wheel supporting bracket and apertures in the lug extensions of said axle clip, a swivel bolt inserted through said aligned axle clip openings and bearing portion of the wheel supporting bracket and having a screw-threaded engagement at its inner end within the outer end portion of said tubular extension of said companion bracket, a longitudinal adjusting screw having its opposite end portions reversely screw-threaded and fitted within correspondingly screw threaded meeting end portions of the tubular extensions of the companion bracket members of the front and rear truck sections whereby to adjustably connect the two truck sections to vary the working length of the skate body and wheel base, and resilient means for yieldably resisting transverse rocking movement of the axle clips on said swivel bolts.

4. A roller skate comprising a front truck section and a rear truck section, the front truck section including a sole-plate having a transverse sole-clamping device thereon, said rear truck section including a heel-plate having provision for its attachment to the adjacent portion of a shoe, the front truck section having a depending bracket at its rear portion provided with a forwardly extending longitudinal tubular portion and the rear truck section having a similar bracket at its forward portion provided with a rearwardly extending tubular portion, said tubular portions being respectively interiorly screw threaded reversely at their meeting end portions, a screw element having a reversely screw-threaded opposite end portions fitted respectively in the meeting end portions of the tubular extensions of said brackets whereby to adjustably connect said front and rear truck sections, each truck section having a wheel supporting bracket depending substantially from the center of its plate, said bracket having a longitudinal bearing portion near its lower end and a seat portion below said bearing portion, an axle clip having a transverse axle bearing portion, a seat portion above its bearing portion and an opposed pair of lug extensions straddling the lower portion of the wheel supporting bracket and having apertures aligned with the bearing portion of said bracket, an elastic block fitted in the seat portions of said wheel supporting bracket and said axle clip and adapted to yieldably resist relative movement between said bracket and clip,

and swivel bolts respectively inserted through the aligned axle clip apertures and bearing portions of the wheel supporting brackets and with their screw-threaded inner end portions fitted in correspondingly threaded adjacent end portions of the tubular longitudinal extensions of said first mentioned brackets.

5. A roller skate comprising a front truck section and a rear truck section, the front truck section including a sole-plate having a transverse sole-clamping device thereon, said rear truck section including a heel-plate having provision for its attachment to the adjacent portion of a shoe, the front truck section having a depending bracket at its rear portion provided with a forwardly extending longitudinal tubular portion and the rear truck section having a similar bracket at its forward portion provided with a rearwardly extending tubular portion, said tubular portions being respectively interiorly screw threaded reversely at their meeting end portions, a screw element having reversely screw-threaded opposite end portions fitted respectively in the meeting end portions of the tubular extensions of said brackets whereby to adjustably connect said front and rear truck sections, each truck section having a wheel supporting bracket depending substantially from the center of its plate, said bracket having a longitudinal bearing portion near its lower end and a seat portion below said bearing portion, an axle clip having a transverse axle bearing portion, a seat portion above its bearing portion and an opposed pair of lug extensions straddling the lower portion of the wheel supporting bracket and having apertures aligned with the bearing portion of said bracket, an elastic block fitted in the seat portions of said wheel supporting bracket and said axle clip and adapted to yieldably resist relative movement between said bracket and clip, swivel bolts respectively inserted through the aligned axle clip apertures and bearing portions of the wheel supporting brackets and with their screw-threaded inner end portions fitted in correspondingly threaded adjacent end portions of the tubular longitudinal extensions of said first mentioned brackets, and resiliently tired wheels having an antifriction mounting on axles extended through the transverse bearing portions of said axle clips with interposed washers between said bearing portions and the wheel hubs at the inner sides of the latter and between the outer sides of the hubs and retaining nuts provided on the opposite end portions of the axles.

CLARENCE B. ECTON.