Jan. 4, 1938. J. S. COLDWELL 2,104,536

ROLLER SKATE

Filed Feb. 23, 1935 2 Sheets-Sheet 1

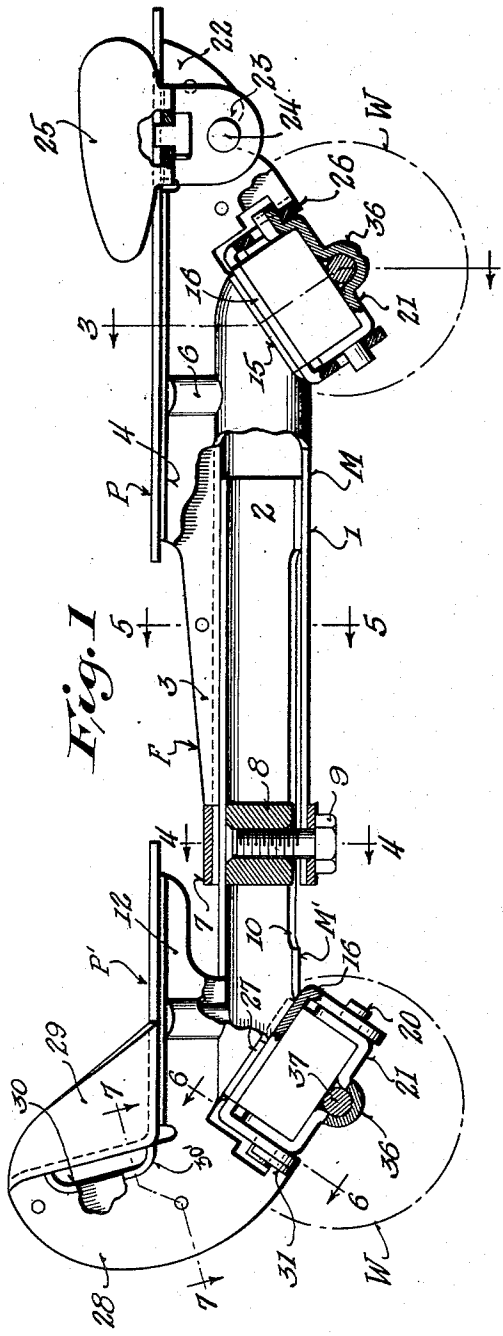


Fig. 1

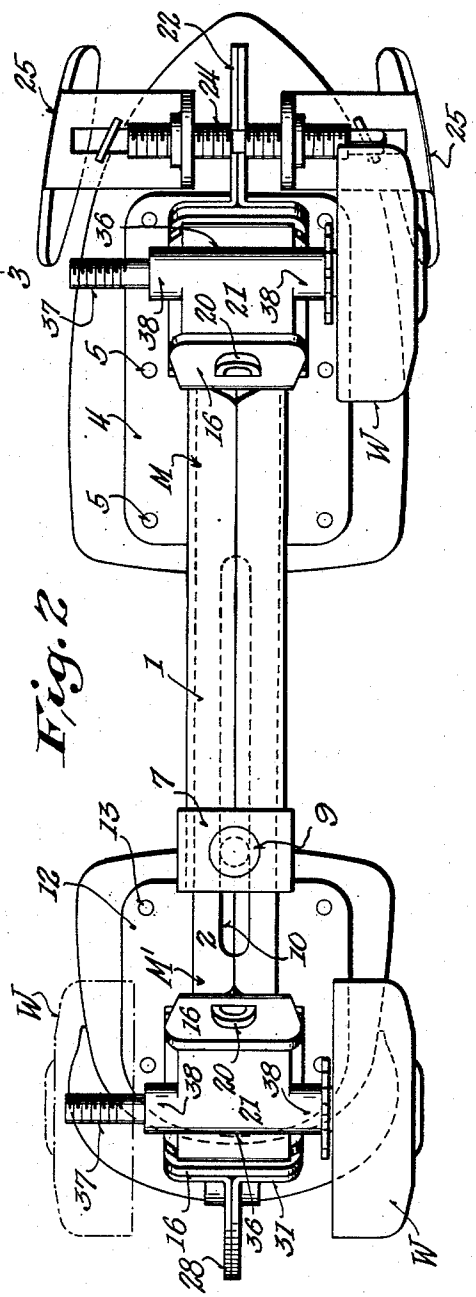


Fig. 2

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Fig. 3

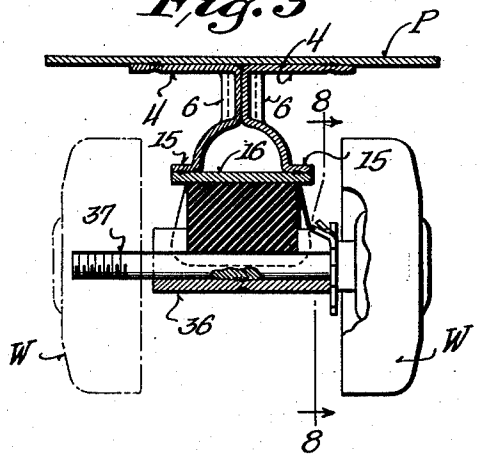


Fig. 4

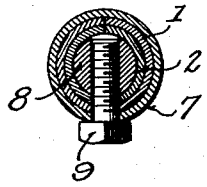


Fig. 7

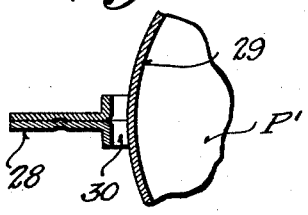


Fig. 9

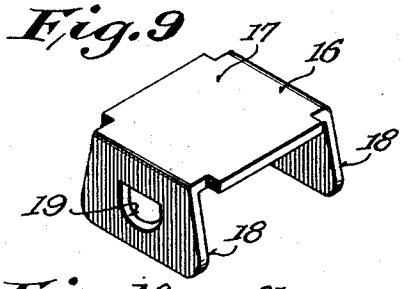


Fig. 10

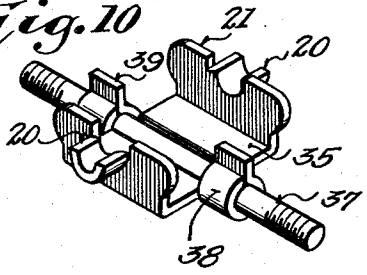


Fig. 6

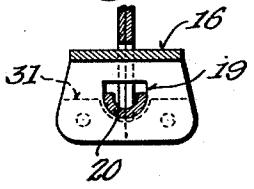


Fig. 5

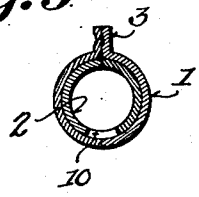
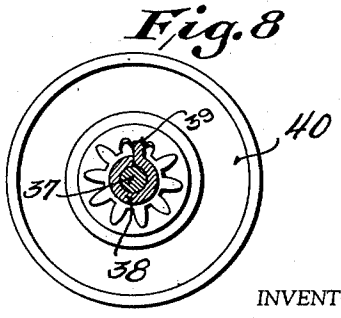


Fig. 8



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UNITED STATES PATENT OFFICE

2,104,536

ROLLER SKATE

John S. Coldwell, Milwaukee, Wis., assignor, by mesne assignments, to Globe-Union Inc., Milwaukee, Wis., a corporation of Delaware

Application February 23, 1935, Serial No. 7,812

9 Claims. (Cl. 280—11.26)

This invention relates to roller skates and more particularly to a roller skate of streamline appearance and design.

In carrying out the invention a novel frame structure is provided which serves as an adjustable shank or girder between the toe and heel plates and takes an important part in the attachment of the wheel trucks to the plates. In addition, the frame is constituted to provide a mounting for the screw of the toe clamps and takes care of the attachment of the heel strap to the skate. While constituted to perform the several functions in a novel and effective manner, the frame structure is worked into a sweeping or flowing streamline design.

The frame is made up of front and rear sections both having body portions of tubular form which telescope one into the other and are held in any adjustment by a novel means provided for such purpose. The tubular body portion of each frame section is split, that is, made up of two half cylinders, the half cylinders being, of course, secured together in the assembly.

The upper edges of the half cylinders of the front frame section are provided for the greater portion of their length with integral upwardly directed extensions or flanges, the extent and form of which are varied to provide a rib for strength, an angular flange-like support on which the toe plate rests and is secured, a fin-like extension which accentuates the streamline effect and which is notched to provide a post on which the operating screw of the toe clamp is mounted and which also has integral therewith ears or abutments for a portion of the front truck bracket, all as will hereinafter more clearly appear. The forward edges of the half cylinders of the front section are provided at their forward ends with outturned and inclined ears against which the front truck bracket bears and is secured and by which it is kept from tipping.

The upper edges of the half cylinders of the rear frame section also have extensions or flanges providing supports against which the heel plate rests and is secured and providing also a pad or abutment for a portion of the rear wheel truck bracket and a fin-like or rudder-like extension for streamline effect and to provide a back-up for the vertical portion of the heel plate as well as a means for advantageously attaching the heel strap to the skate, all as will be hereinafter more fully described.

The wheels of the skate are also so constituted and organized with the skate structure and to blend into and enhance the streamline design effect.

In general, the objects of the invention are to provide a sturdy and well-balanced skate, free running and enjoyable in use, highly attractive in appearance, and which has a long life and yet may be produced with facility, in quantity and with reasonable economy.

Other objects and advantages reside in certain novel features of the construction, arrangement and combination of parts which will be hereinafter more fully described and particularly pointed out in the appended claims, reference being had to the accompanying drawings, forming a part of this specification, and in which:

Figure 1 is a view partly in side elevation and partly in longitudinal vertical section illustrating a roller skate embodying the present invention;

Figure 2 is a view of the roller skate in bottom plan;

Figure 3 is a cross sectional view taken on line 3—3 of Figure 1;

Figures 4, 5, 6 and 7 are sectional views taken on lines 4—4, 5—5, 6—6 and 7—7, respectively, of Figure 1;

Figure 8 is a view in vertical section taken on line 8—8 of Figure 3;

Figure 9 is a detail perspective view of one of the brackets for the wheel trucks; and

Figure 10 is a similar view of the wheel truck and axle.

Referring to the drawings, it will be seen that the roller skate embodying the present invention comprises generally foot pieces in the form of toe and heel plates designated generally at P and P', respectively, a tubular frame designated generally at F and wheels W which are interconnected with the frame and through the frame with the toe and heel plates in a novel manner which will be hereinafter more fully described.

The frame F consists of two sections or members, one designated generally at M and associated with the toe plate and the other designated at M' and associated with the heel plate. The frame members M and M' each have a tubular body portion, which tubular body portions are designated at 1 and 2, respectively. As illustrated, these tubular body portions telescopically interfit in the assembly and are adjustable relative to each other to vary the effective length of the skate and adapt it for use by persons having feet of different sizes.

Each frame member is made up of a pair of sections of semi-cylindrical form for the main part.

The front frame section has the upper edges of its half cylinders extended, for the better part of the length of the section, so as to provide a strengthening tapered rib 3 along a portion of the front frame section and also angular flange-like supports 4 against the horizontal portions of which the toe plate rests and is spot welded at an appropriate number of points as indicated at 5 in Figure 2. These angular flanges or supports 4 may have ribs 6 pressed therefrom to further strengthen them.

The rear frame is similarly constituted except that its semi-cylindrical sections do not have a rib formation but are truly round to adapt the rear frame section to slidably interfit or telescope into the front frame section. Thus, the rear frame section also has the upper margins of its semi-cylindrical members formed with angular extensions 12 which provide a support for the heel plate P', the heel plate being spot welded to these supports as indicated at 13 in Figure 2.

Means are provided for securing the front and rear frame sections in various adjustments with respect to each other and consists of a collar 7, a plug or bushing 8 and a screw 9. The plug or bushing 8 is disposed in the body portion of the rear frame section while the collar 7 encircles the rearward end of the front frame section which portion of the front frame section is also truly round and devoid of the rib 3. The screw 9 extends through an opening in the collar and through a slot 10 in the lower part of the rear frame section and is threaded into the plug 8. When the screw is tightened up it coacts with the collar 7 and plug 8 to firmly clamp the frame sections of the skate in fixed relation to each other. It is obvious that the slot 10 allows the actions to be adjusted relative to each other when the screw 9 is loosened.

From the foregoing it will be seen that the frame F provides a shank or girder between the toe and heel plates. It is also adapted to perform several other functions, one of which is to take part in the interconnection of the wheel trucks and the foot pieces or, in other words, the toe and heel plates. For the latter purpose the lower forward edges of the sections of the front frame member are provided with outturned inclined ears 15 which provide abutments against which brackets 16 bear. One of the brackets 16 is shown in detail in Figure 9 and its body portion 17 is spot welded to the ears 15, to secure the bracket in the assembly and hold it against tilting when steering. By having the brackets 16 separate they may be made heavier. The end plates 18 of the brackets 16 are provided with rounded openings 19 in which the trunnions 20 of the wheel trucks 21 engage. A cushion, such as a block of rubber R, is interposed between each bracket 16 and its associated wheel truck 21.

In addition to the ears 15, the upper edges of the semi-cylindrical half sections at the forward end of the skate are extended to provide fin-like extensions 22 notched out as at 23 to provide a post or mounting for the screw 24 of the toe clamps 25. The fin-like extensions 22 are also spot welded to each other to further strengthen the assembly and they are carried to the extreme front to support the tip of the toe plate. Below the notch the extensions 22 are formed with outturned ears 26 which bear against the adjacent end plate of the front wheel truck bracket 16 and are welded thereto to prevent the bracket from bending and to aid the ears 15 in holding the bracket 16 against tilting when steering.

In a similar manner the rear frame section is provided with outturned ears 27 providing an abutment against which the end plate of the rear wheel truck bears and to which said bracket is secured. The upper edges of the semi-cylindrical sections of the rear frame section are provided with fin or rudder-like extensions 28 also welded together forming a back-up for the vertical portion 29 of the heel plate and also having a slot 30 therein to facilitate the attachment of the heel strap (not shown). The margins of the slots 30 are flanged as at 30' to avoid sharp edges liable to cut into the heel strap. These extensions 28 also have integrally formed therewith outturned ears 31 which bear against and are welded to the adjacent end plate of the bracket for the rear wheel truck. These ears 31 also provide an abutment which prevents the truck bracket from bending and likewise assist the flanges 27 in holding the truck bracket from tilting when steering.

The wheel trucks 21 are provided with body portions 35, the central portions of each of which are depressed to form a cradle 36 for the axles 37. At the ends of the cradle, extensions of the body portion 35 of each wheel truck are wrapped tightly about the axle as indicated at 38 to aid in holding the same in place and to provide lugs 39 which take part in securing the wheels on the axle. Each cradle and its axle may also have portions thereof upset, that is, swaged or staked, into engagement with each other. Wheels 40 are rotatably mounted on the axles and while these wheels involve certain features of patentable novelty they are not disclosed in detail in this application but form the subject matter of my co-pending application filed February 23, 1935, Serial No. 7,811, in which they are fully disclosed and claimed.

It will be understood from the foregoing that the tubular frame constructed in the manner described provides not only a desirable streamline appearance but also a sturdy construction. The frame functions not only as a connecting means between the foot pieces but also provides a very effective means of interconnection of the wheels with the foot pieces. It lends itself to a sturdy welded construction and one which may be readily manufactured.

While I have shown and described one construction in which the invention may be advantageously embodied, it is to be understood that this construction has been selected merely for the purpose of illustration or example and that various changes in the size, shape and arrangement of the parts may be made without departing from the spirit of the invention or the scope of the subjoined claims.

The invention claimed is:

1. A roller skate comprising a wheel truck bracket having a body portion and end plates, a split tube having end edges provided with outturned ears engaged with and secured to said body portion and having the upper edges of its split extended and also formed with outturned ears engaged with and fixedly secured to an end plate of said wheel truck bracket.

2. In a skate comprising foot pieces, a frame interconnecting said foot pieces and made up of tubular sections telescopically interfitted, the combination with said frame of means for securing said sections in various adjustments and comprising a plug in the inner section, a collar em-

bracing the outer section adjacent the plug and a screw engaging the collar and threaded into the plug.

3. In a skate comprising foot pieces and a frame interconnecting said foot pieces and made up of tubular sections telescopically interfitted, the combination with said frame of means for securing said sections in various adjustments comprising a nut in the inner section, said inner section having a longitudinal slot, a collar embracing the outer section, and a screw engaging the collar extending through the slot and threadedly engaged with the nut.

4. In a roller skate comprising toe and heel plates, the combination therewith of a connecting frame having a front section made up of a split tube having angular flanges integral with portions of the edges of the split, said angular flanges having outturned substantially horizontal portions presenting flat seats adapted to be secured to said toe plate, said tube having forward extensions flatly engaged with each other and provided with transverse downwardly facing notches for supporting a toe clamp screw.

5. A roller skate comprising a frame member made up from a split tube, the edge portions of said split being extended to provide flanges upstanding above said tube adjacent to the end of the tube, portions of said flanges being extended beyond the end of the tube and provided with outturned lugs depending in line with the tube and adapted to engage and be secured to a wheel truck bracket.

6. In a skate comprising toe and heel plates, and wheels, the combination of a frame connecting said wheels with said toe and heel plates and also interconnecting said plates, said frame being made up of a pair of sections, each comprising a tubular body consisting of a pair of elongated sections of generally channel-shaped cross section formed with integral upstanding edge flanges for a portion of their length, said flanges being engaged with and secured to the toe and heel plates, the unflanged portion of one of said tubular pieces being telescoped into the other and being releasably secured in adjusted position.

7. In a roller skate comprising toe and heel plates, the combination therewith of a connecting frame made up of front and rear frame sections, each of said sections comprising a split tube having angular flanges integral with portions of the edges of the split, said angular flanges having outturned substantially horizontal portions presenting flat seats, said toe and heel plates resting against and being secured to the flat seats of said front and rear sections, respectively, the unflanged portion of one of said tubes being telescoped into the other in the assembly, and releasable means for securing the telescopically interfitted portions of the tube in various adjustments.

8. In a skate comprising foot pieces, the combination with said foot pieces of a frame made up of telescopically interfitted tubular members, each member consisting of a pair of elongated sections generally channel-shaped in cross section, the upper edges of said sections having integral angular flanges, said flanges having upright portions engaged with each other and having outturned substantially horizontal portions engaged with and welded to the foot pieces.

9. In a skate comprising foot pieces, a frame made up of telescopically interfitted tubular members, each tubular member consisting of a split tube having upwardly extending angular flanges integral with the edges of the split, said flanges having outturned substantially horizontal portions presenting flat seats, said foot pieces resting against said flat seats, and welds between the foot pieces and said outturned portions of the flanges.

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