L. ZAMBONI.

ROLLER SKATE.

APPLICATION FILED NOV. 5, 1909.

983,970.

Patented Feb. 14, 1911.

2 SHEETS—SHEET 1.

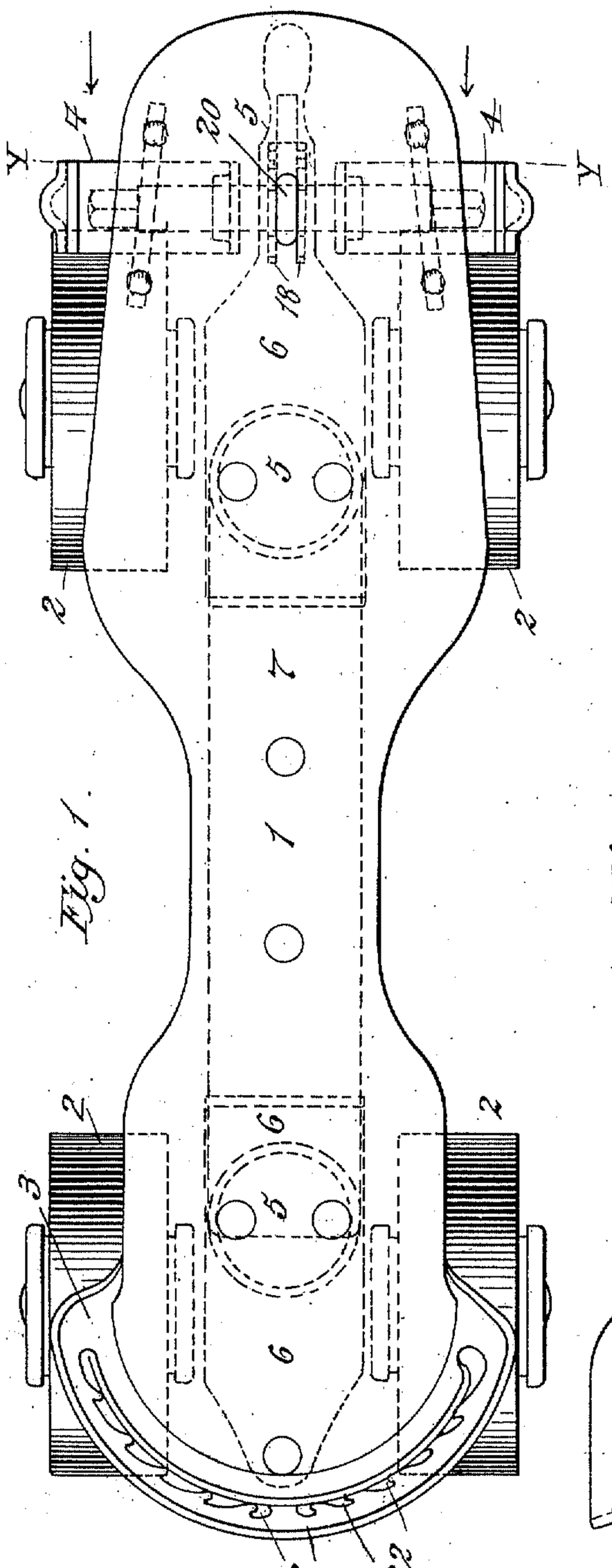

Fig. 1.

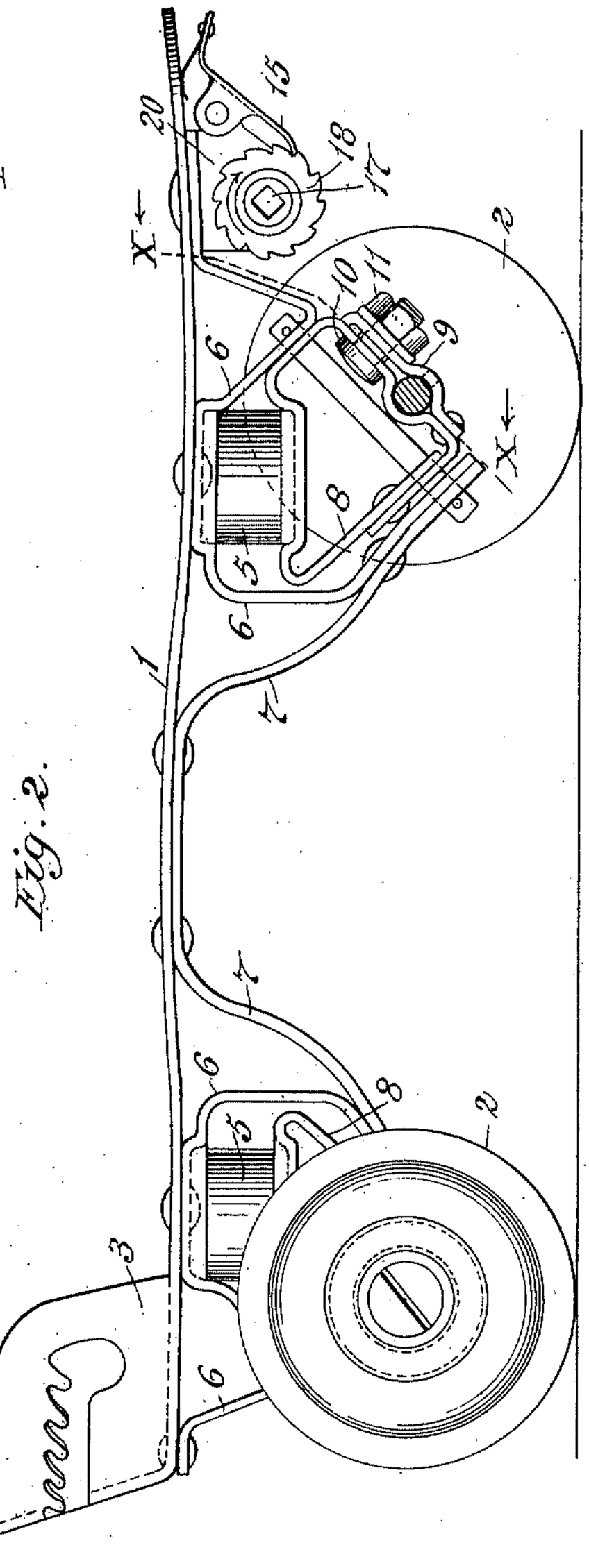

Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 4.

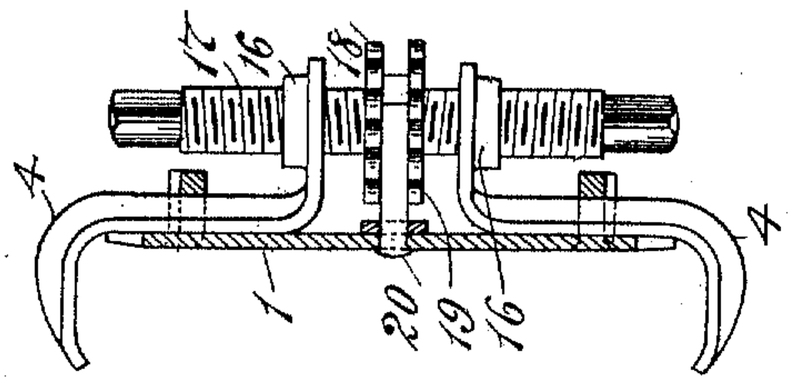


Fig. 3.

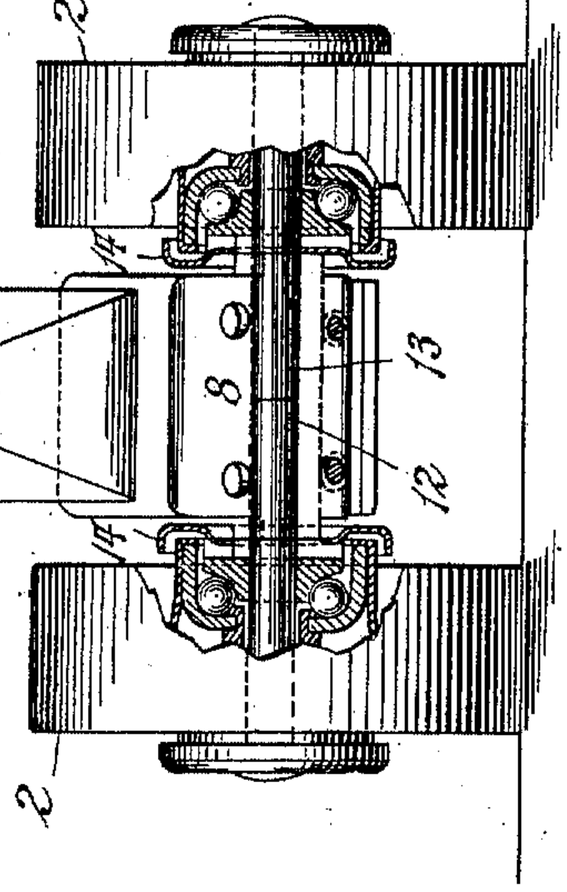


Fig. 5.

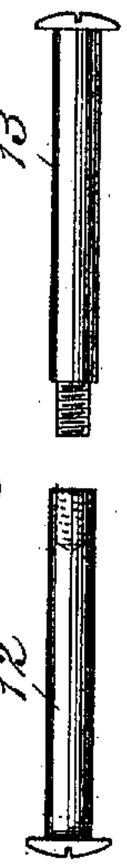


Fig. 6.

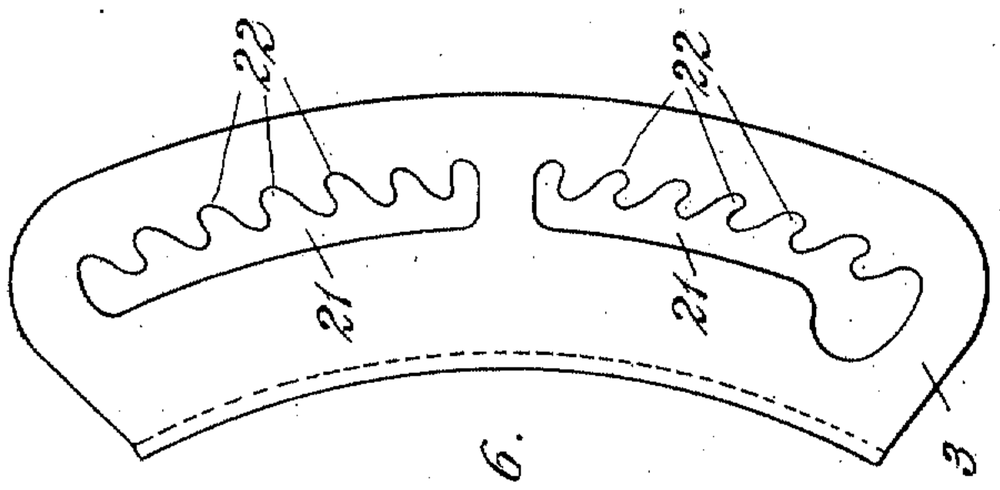


Fig. 8.

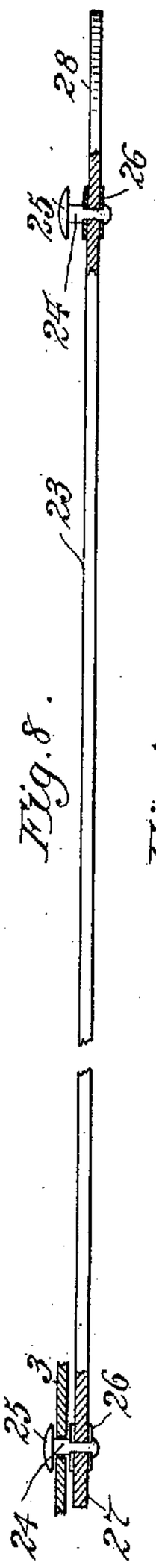
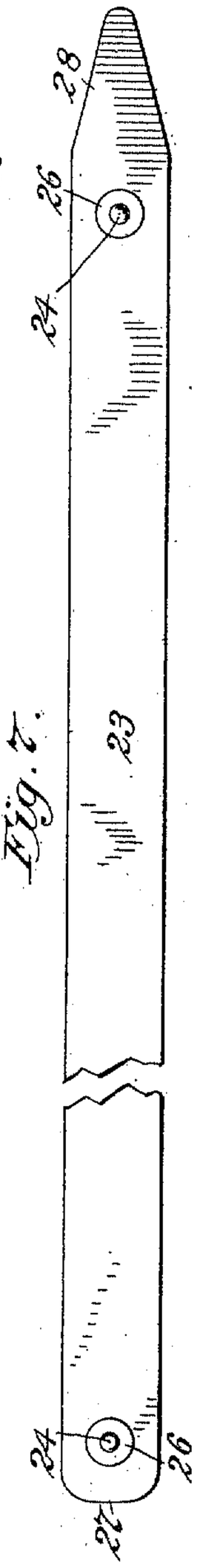


Fig. 7.



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UNITED STATES PATENT OFFICE.

LAWRENCE ZAMBONI, OF NEW YORK. N. Y., ASSIGNOR OF ONE-HALF TO CHARLES A. STERLING, OF EAST ORANGE, NEW JERSEY.

ROLLER-SKATE.

983,970. Specification of Letters Patent. **Patented Feb. 14, 1911.**

Application filed November 5, 1909. Serial No. 526,346.

To all whom it may concern:

Be it known that I, LAWRENCE ZAMBONI, a citizen of the United States, and resident of New York, borough of Manhattan, county and State of New York, have made a new and useful Invention in Roller-Skates, of which the following is a specification.

My invention has for its objects, first, to provide novel means for effecting the detachability and adjustability of the axle pins of the rollers; second, to provide novel hangers for supporting said axle pins and means for effectually bracing such hangers in the direction of the length of the skate.

My invention will be fully understood by referring to the accompanying drawings, in which,

Figure 1 is a plan view of a roller skate embodying all of the improvements above referred to. Fig. 2 is a side elevational view of Fig. 1 as seen looking from the bottom toward the top of the drawing. Fig. 3 is a sectional view taken through the toe part of the skate on the broken line X—X Fig. 2 and as seen looking thereat from right to left in the direction of the arrows, the screw-bolts for locking or clamping the axle pins firmly in position being withdrawn, the inner edges of the rollers being broken away for the purpose of illustrating in section the roller bearings of usual or well known construction. Fig. 4 is a sectional view taken through Fig. 1 on the line Y—Y and as seen looking thereat from right to left in the direction of the arrows. Fig. 5 is a detail view illustrating one of the two-part axle pins and the means for effecting the adjustability thereof. Fig. 6 is a developed plan view of the heel-cup illustrating the means for effecting the adjustability of the ankle strap about the ankle of the wearer. Fig. 7 is a plan view of one of the ankle straps; and, Fig. 8 is an edge view thereof as seen looking from the bottom toward the top of the drawing, the opposite ends of said strap being shown in sectional view.

Referring now to the drawings in detail, 1 represents the sole-plate of a roller skate and 2, 2, the rollers therefor, 3 being the heel-cup which is adapted to surround the heel of the wearer when in use.

4, 4, represent toe-clamps adapted to clamp the shoe sole of the wearer and slidingly held in place beneath the sole-plate 1.

5, 5, represent metallic standards, shown as of hollow cylindrical cup form, their function being to support or secure curvilinear longitudinal braces 6, 6, 7, 7 and metallic hangers 8, 8, the same being all rigidly connected with the sole-plate by rivets, as shown. These standards and hangers are identically alike in construction for both sets of rollers 2, 2, said hangers having the conformation shown on the front part of Fig. 2, the same being constructed of pressed steel bent and riveted together at their free ends and having a curvilinear bearing adapted to receive the axle pins of the skate therein.

9 represents a pressed metal locking part which has a curvilinear conformation similar to the conformation just described with relation to the hanger, said locking parts being secured at their lower ends by rivets directly to the hangers 8 and by reason of their elasticity adapted to permit of free movement of the axles longitudinally when effecting adjustment, as will be described later on.

10, 10 represent locking bolts and 11, 11 nuts therefor, there being two such bolts and nuts for the axle pins of each pair of rollers.

12, 13 represent conjointly a two-part axle-pin for each pair of rollers 2, 2, said axle pins having at their outer ends screw-heads which adapt them to be rotated with an ordinary screw-driver and at their adjoining or inner ends respectively male and female screw-threaded parts, the structure being, as clearly shown in Fig. 5, such that the two parts are secured together and constitute in effect one axle-pin in each instance.

14, 14 represent the usual protecting cups or shells for the roller bearings, said cups being provided with central holes for permitting of the passage of the axle pins therethrough.

Referring now to Figs. 1, 2 and 4, 15 represents a spring pressed locking pawl pivotally secured to a flat metal standard 20, the upper end of which in turn passes through a slot in the sole-plate and is riveted thereto upon its upper surface, as clearly

shown. 16, 16, represent respectively the screw-threaded ends of the toe-clamps 4 and 17 a locking key bolt of usual form which is provided with right and left screwthreads at its opposite ends, as usual, adapted to move the toe clamps simultaneously in the usual way. This locking key bolt 17 possesses a feature of novelty in that all parts thereof are of relatively the same diameter, or the central part may be of greater diameter, to which central part is attached, as clearly shown in Fig. 4, two ratchet-wheels 18, 19 adapted to be located on opposite sides of the flat metallic standard 20, the body part of the screw-bolt lying, when in position, in a curvilinear notch or groove in the lower end of the standard, such parts thereby constituting a means for maintaining the key-bolt always in a definite position with relation to the sole-plate and the clamps carried thereby.

The locking pawl 15 is, as before stated, pivotally supported by the standard 20 and the outer or free detent end thereof is held in compressed relation to the ratchet teeth of the ratchet-wheels 18, 19 by a spring normally under tension under the surface of the sole plate, as shown in Fig. 2.

Referring now to the means for securing the skate to the ankle of the wearer, 3, as before stated, represents the heel-cup having the conformation of the heel of a person's shoe, the same being made of pressed metal, such as steel, and secured directly to the upper surface of the sole plate by rivets. This heel-cup when struck-up or constructed is provided near its upper edge with one or more curvilinear longitudinal slots 21 in the upper edge or edges of which are struck-up or cut out a plurality of oppositely inclined locking teeth 22, 22 the function of which is to receive the locking pins of the skate strap which will now be described, referring particularly to Figs. 7 and 8 of the drawings, in which 23 represents a leather or other flexible skate strap of the required length, 24, 24 being preferably copper rivets provided with enlarged locking heads 25, 25 and secured directly to the strap by pairs of washers 26, 26 and rivet heads, as shown, the structural nature of such a strap being specially useful in that the usual tongue holes which are found in skate straps generally are done away with and the rivets 24, 24 with their enlarged heads 25, 25 constitute tongues for effecting adjustment, as will be described later on.

In assembling the parts of the skate, after the standards 5, hangers 8, locking parts 9 and longitudinal braces 6, 7 have been secured together by rivets, the two rollers of each pair are slipped over the respective parts of the axle pins 12, 13. They are then inserted in opposite directions toward each other through the curvilinear parts of the hangers 8, 8, and locking part 9, and through the agency of two screw-drivers from opposite ends are adjusted until the proper relative longitudinal play is had as between the roller bearings and the parts of the axle pins with which they are connected. Then the nuts 11, upon the screw-bolts 10, 10, are firmly secured by a wrench and the skate is ready for use. In applying the same upon the foot of the wearer, after he has placed his foot upon the sole plate with his heel secured in the heel-cup 3, the head 25 of that rivet 24 at the butt 27 of the strap 23 is placed in the proper one of the notches 22 on one side of the heel-cup, the strap carried around the ankle, and the other rivet 24 and its head drawn taut by the tip 28 of the strap and finally secured or locked in the oppositely disposed notch 22 on the other side. The toe clamps are then secured by rotating the locking key bolt 17 in the proper direction, such direction being that shown by the arrows in Fig. 2, so that as the clamps are firmly secured the free end of the pawl 15 successively locks the ratchet teeth of the ratchet wheels 18, 19, thus preventing any possibility of the clamps becoming loose. When it is desired to release the skate it only becomes necessary to press the pawl 15 upward against the influence of the spring under the sole plate and rotate the bolt 17 in reverse direction in a well known way.

I am aware that it is not broadly new with me to provide roller skates with two-part axle pins which may be detached separately from the hanger. Nor is it new with me to provide a roller skate with means for locking the key bolt of the clamps, and I make no claim hereinafter to include such structural devices.

Having thus described my invention what I claim and desire to secure by Letters Patent of the United States is—

1. A roller skate having hangers secured to the sole plate thereof; a two-part axle pin for each hanger, the individual parts of said axle pins being provided with means for adjusting them toward and away from each other; in combination with an adjustable clamp operatively connected to each hanger and adapted to grip or clamp the two parts of each axle pin to its corresponding hanger.

2. A roller skate having hangers secured to the sole plate thereof; a two-part axle pin for each hanger and a clamp for securing said axle pin, each to its corresponding hanger; the two part axle pins being each provided with screw-threaded connections at their inner ends for adjusting them as to length.

3. A roller skate embracing a sole plate, a front and a rear hanger secured thereto; a two part axle pin, and a clamp for each

hanger, said axle pins having screw heads at their outer ends and screw-threaded connections at their inner or adjoining ends whereby all of the detachable parts of the skate may be readily assembled or disassembled and adjustments or repairs quickly effected.

4. A roller skate embracing a sole plate, standards and hangers secured to the under side of said plate, and front and rear axle pins, each of said pins being constructed in two parts adjustably secured together; in combination with a clamp for connecting each pair of axle pins to its hanger.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LAWRENCE ZAMBONI.

Witnesses:
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