(No Model.) 2 Sheets—Sheet 1.

# D. WALTERS.

## ROLLER SKATE.

No. 324,618. Patented Aug. 18, 1885.

Fig. 1.

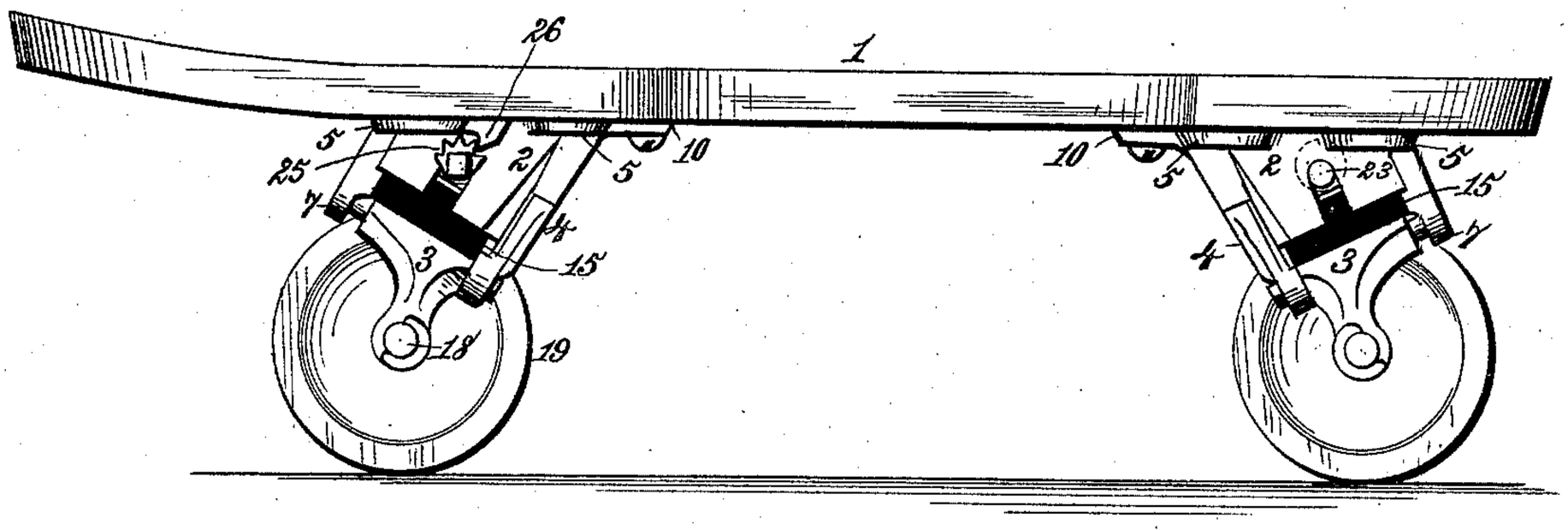



Fig. 2.

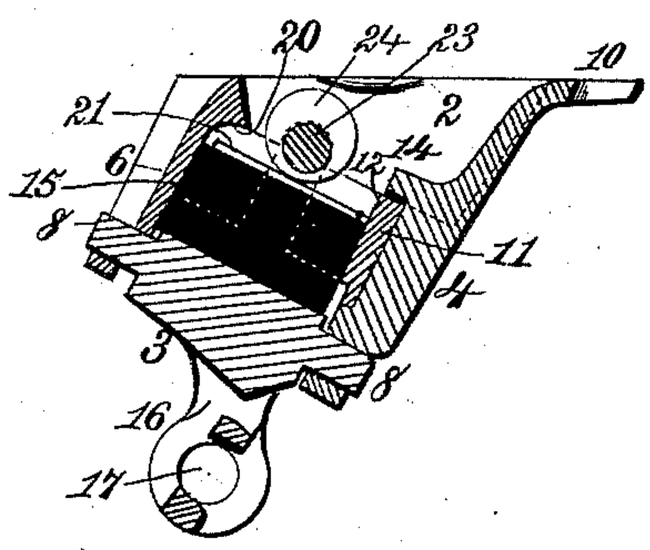



Fig. 3.

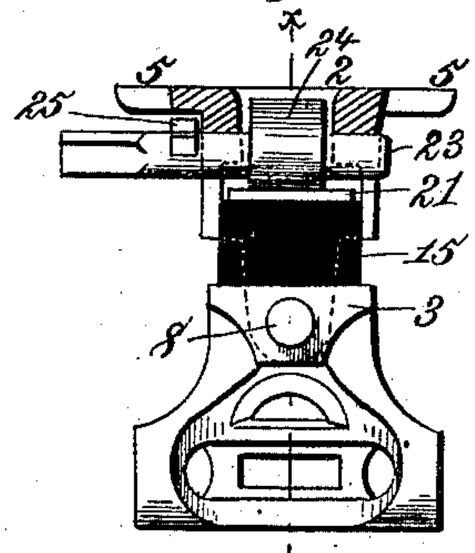



Fig. 4.

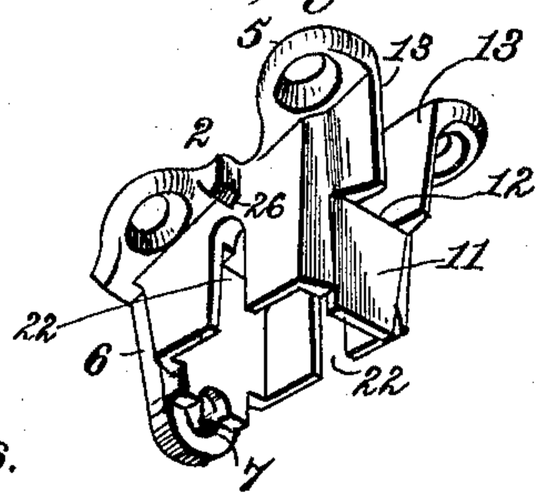
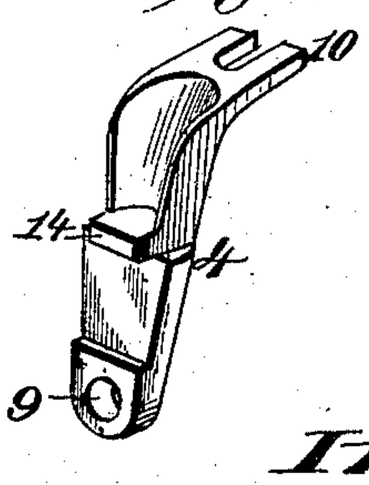



Fig. 5.

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(No Model.) 2 Sheets—Sheet 2.

# D. WALTERS.

## ROLLER SKATE.

No. 324,618. Patented Aug. 18, 1885.

Fig. 6.

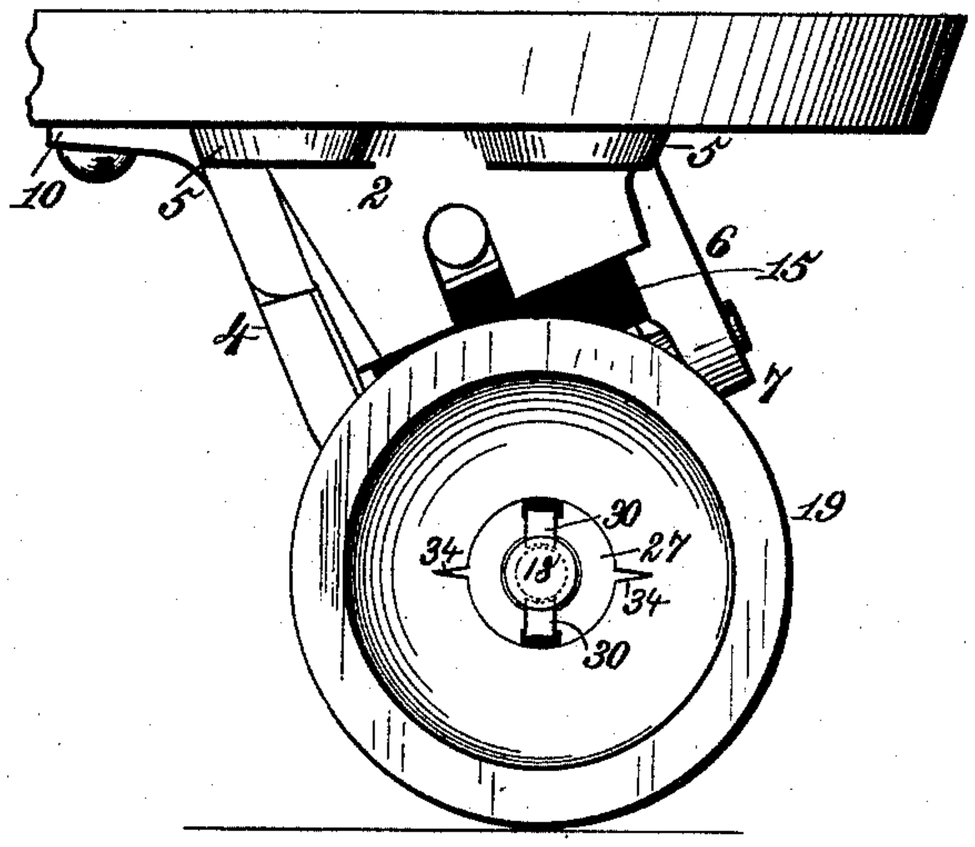



Fig. 7.

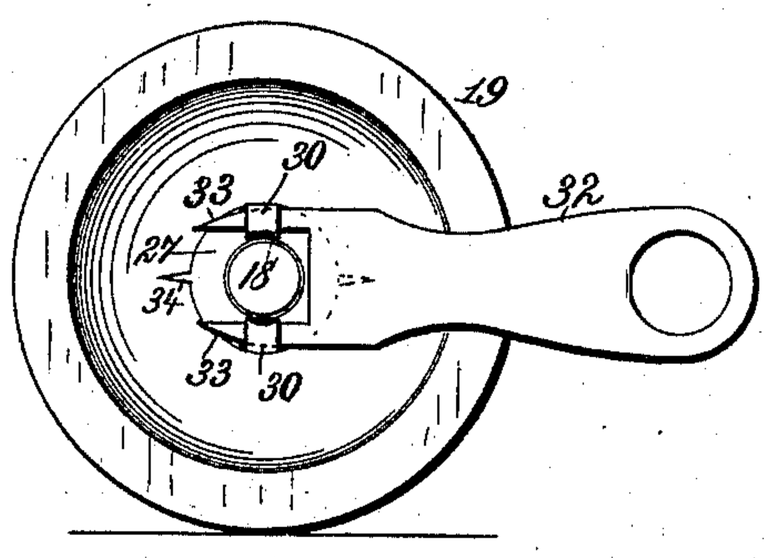



Fig. 8.

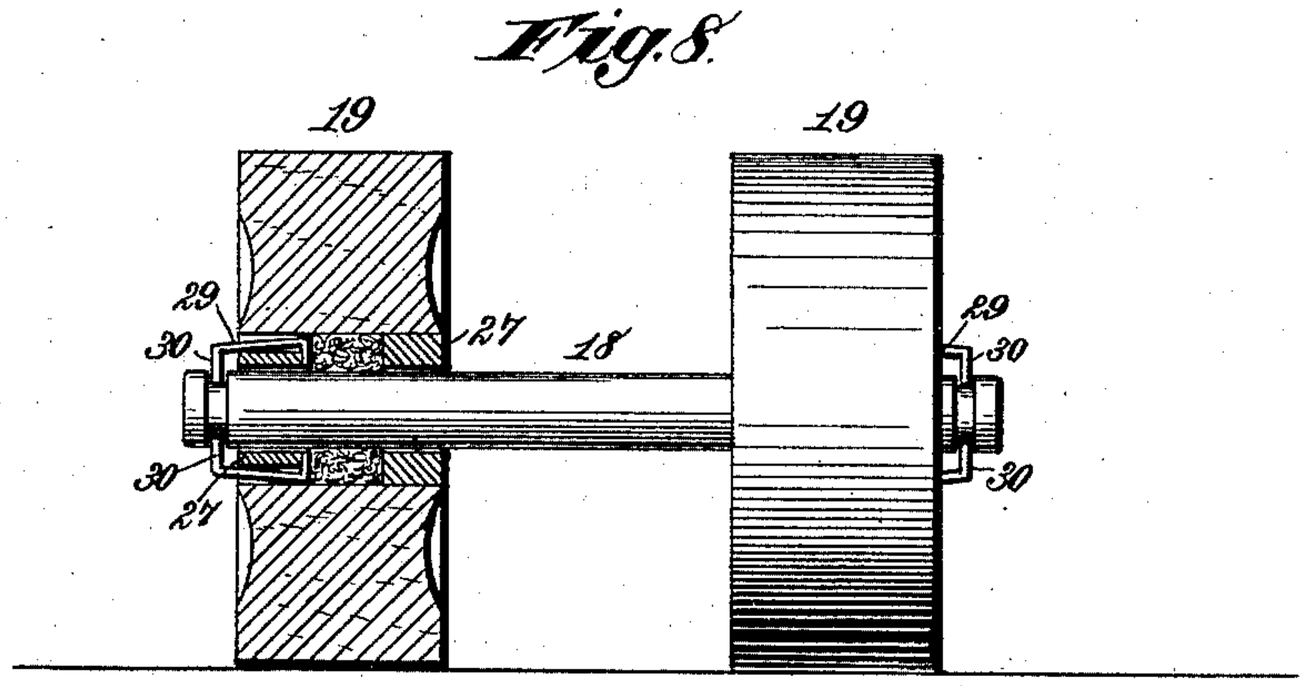



Fig. 9.

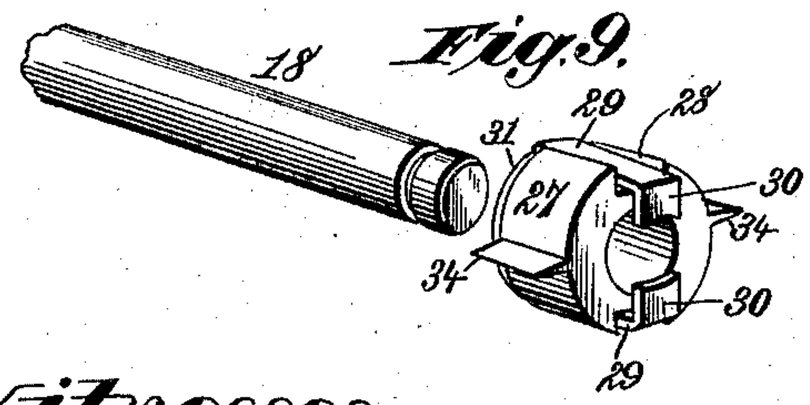



Fig. 11.

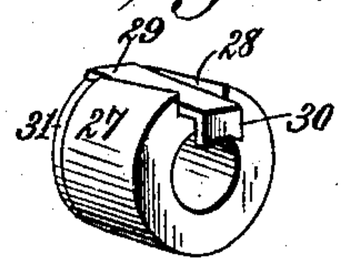
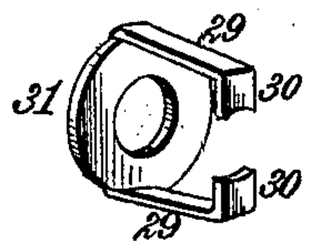



Fig. 10.




Witnesses.
Robt Ewett.
J. A. Rutherford

Inventor.
Daniel Walters.
By James L. Norris.
Atty.

# UNITED STATES PATENT OFFICE.

DANIEL WALTERS, OF RICHMOND, INDIANA.

## ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 324,618, dated August 18, 1885.

Application filed March 10, 1885. (No model.)

*To all whom it may concern:*

Be it known that I, DANIEL WALTERS, a citizen of the United States, residing at Richmond, Wayne county, Indiana, have invented new and useful Improvements in Roller-Skates, of which the following is a specification.

This invention relates to that class of skates which are composed of a foot-stock provided with rollers for traversing the floor or other surface in imitation of skating on ice.

The objects of my invention are, first, to provide a hanger of novel construction for supporting the axle of the rollers, and also the usual elastic block or cushion, whereby the latter can be removed and replaced by a new one without detaching that part of the hanger which is secured to the foot-stock by screws or similar devices; second, to provide a novel device for regulating the tension of the elastic block or cushion; third, to provide novel means for detachably securing the rollers on their axles, whereby I avoid the use of the ordinary washers and pins; and, fourth, to provide the roller with novel bearings, whereby the parts can be efficiently lubricated without liability of the oil escaping and covering the rollers.

The objects of my invention I accomplish in the manner and by the construction and combination of devices hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a side elevation of a roller-skate embodying my invention, two of the side rollers being omitted to more clearly represent the hangers; Fig. 2, a central vertical sectional view taken on the line *x x* of Fig. 3; Fig. 3, an elevation of the hanger, with the upper part in section to show the device for regulating the tension of the elastic block or cushion; Fig. 4, a detached perspective view of the upper section of the hanger which is attached to the foot-stock; Fig. 5, a detached perspective view of the removable locking-arm for retaining the lower section of the hanger in position; Fig. 6, an enlarged view of one end of the skate; Fig. 7, a detached side view of one of the rollers, showing the key in position for detaching the roller from its axle; Fig. 8, a section and elevation of two of the rollers; Fig. 9, detached perspective views of a part of an axle and of one of the metal bushings for the rollers; Fig. 10, a detached perspective view of the spring-fingers for confining the roller on the axle, and Fig. 11 a detached perspective view of one of the metal bushings having a single spring-finger for retaining the roller on the axle.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, where—

The number 1 indicates the foot-stock of a roller-skate, which may be of any desired construction and be provided with any suitable devices for securing it to the foot of the skater. The hanger for supporting the roller is composed of three essential parts, 2, 3, and 4, the upper section, 2, being in the form of a hollow casting having perforated ears 5, by which it is rigidly secured to the foot-stock by screws or other fastening devices. One of the end walls, 6, of the upper section is provided with a circular aperture, 7, to receive one of the journals 8, formed at the end of the lower hanger-section, 3, the other journal 8, at the opposite end of the lower section, being received in a perforation, 9, in the lower end of the locking-arm 4, which is furnished at its upper end with a slotted or perforated flange, 10, by which it is detachably secured to the foot-stock through the medium of a screw or similar fastening. The end wall, 11, of the upper hanger-section terminates about midway the height of the section to form a shoulder, 12, and provide an open space between the side walls, 13, of the upper section, in which space the upper portion of the locking-arm 4 is arranged so that a lateral lug or flange, 14, at about the middle of the length of the arm, can rest upon the shoulder 12. The arm 4 thus serves to lock or retain the lower section, 3, of the hanger in position, so that the upper section, 2, can ride sidewise on the journals 8 of the section 3; and when the parts are in place the usual rubber or other elastic block or cushion, 15, is confined within the upper section, 2, so as to bear at its lower end upon the section 3. This section is furnished with a pendent skeleton bracket, 16, having a cylindrical bore, 17, to receive the axle 18 of the rollers 19, and therefore, in artistic skating or skating in curved paths or turning, the skate-stock and

its attached hanger-section 2 can yieldingly rock sidewise, as in ordinary skates. The lower section is cast with the pendent skeleton bracket, and its bore is formed during the process of casting in skeleton form, thereby avoiding the expense of drilling the bore for the axle. By the term "skeleton" I mean that the metal through which the bore passes is cut away, as in Fig. 3, so that a core can be used in casting the bore. A metal plate, 21, is placed on the upper end of the elastic block or cushion.

In order to remove the elastic cushion for any purpose—as, for instance, to replace it by a new one—it is only necessary to remove the single screw which secures the locking-arm 4, and detach said arm with the lower hanger-section, 3, and thus the cushion can be removed from the upper section. By this means I am enabled to remove and replace the cushion or insert a new one without detaching that part of the hanger which is rigidly secured to the skate-stock.

The side walls, 13, of the rigidly-attached hanger-section are formed with slots 22, for receiving a small shaft, 23, which is furnished with an angular or other suitable head, whereby it can be turned in its bearing. The shaft is provided with a cam, 24, so that by turning the shaft in the proper direction the cam is caused to act on the metal plate on the upper end of the elastic cushion, thereby compressing the latter to increase its tension. To lock the cam in any position to which it may be adjusted, I provide the shaft with ratchet-teeth 25, which engage a stop, 26, carried by the hanger; but I do not confine myself to this particular mechanism for locking the shaft in its adjusted position.

It will be obvious that through the medium of the turning cam journaled to rotate in the hanger the tension of the elastic cushion can be increased or diminished, as desired; and, further, that when the cam is turned to compress the cushion the cam acts as a support to the weight of the skater.

An important feature in the construction of the skate is, that the parts are cast and the requisite orifices formed during the process of casting, thereby avoiding the labor and expense of drilling and other machine-work.

The rollers 19 of the skate are mounted on the axle 18, which is arranged in the skeleton bore 17 of the bracket 16; and each roller is provided in its bore with two annular metallic bushes, 27, arranged, respectively, at the ends of the bore, to create an intervening annular space between the inner adjacent faces of the bushes, which space is supplied with cotton or similar absorbent material for carrying the oil or other lubricant. The bush, which is arranged at outside of the wheel, is provided with grooves 28, for receiving spring-fingers 29, which are provided at their outer extremities with inwardly-extending flanges or lips 30, to engage an annular recess in the outer end of the axle 18. The spring-fingers are preferably formed with or attached to a ring, 31, secured to the inner end of the bush, and provided with an orifice for the passage of the axle in such manner that the fingers can be spread apart for the introduction of the axle, and then spring into engagement with the annular recess in the axle for confining the rollers thereon. I may employ two spring-fingers, as in Figs. 9 and 10, or a single finger, as in Fig. 11.

For the purpose of spreading the spring finger or fingers, I provide a key, 32, having a bifurcated end, the prongs of which are provided at their outer edges with inclined surfaces 33, so that if the key be inserted between the fingers the inclines will act to spread them apart for applying or removing the rollers.

The metal bushes constitute two separate bearings in the bore of the wheel, and also serve to prevent the escape of the lubricant at the ends of the bore in the roller, while the cotton or absorbent material, by taking up surplus oil, prevents the latter escaping from the annular space, so that the rollers will not become soiled or covered with the lubricant, which is very objectionable, as is well known.

In order to prevent a turning movement of the metal bushes in the wheel, I may provide them with feathers 34, one or more, to be driven into the wood of the roller; but, obviously, other means for securing the bushes in fixed positions in the bore of the wheel may be employed.

The longitudinal grooves in the outer edges of the bushes provide for the requisite movements of the spring-fingers to engage and disengage the axle, and by these devices I provide for quickly removing and replacing the rollers, and avoid the use of separate washers and pins for retaining the rollers on the axle, as ordinarily.

Having thus described my invention, what I claim is—

1. A roller-hanger for skates, consisting of the upper hollow section having a shoulder, 12, and an aperture, 7, a lower section having two journals, one of which has its bearing in the aperture, and a detachable locking-arm having a lateral lug or flange, 14, to rest on the shoulder, substantially as described.

2. The combination of a roller-hanger for skates, an elastic block or cushion therein, a shaft journaled to rotate in the walls of the hanger, and a cam on the shaft for acting on the block or cushion, substantially as described.

3. The combination, in a roller-hanger for skates, of an upper section having walls provided with slots, a lower section jointed to the upper section, an elastic block or cushion resting on the lower section, a shaft arranged in the slotted walls, and a cam on the shaft for acting on the block or cushion, substantially as described.

4. The combination, in a roller-skate, of an axle having an annular recess, a roller, a bush in the roller having a groove in its outer edge,

and a spring-finger in the groove for engaging and disengaging the annular recess in the axle, substantially as described.

5. The combination, in a roller-skate, of an axle, a roller having a central bore, two bushes arranged, respectively, in the ends of the bore, and one provided with a spring-finger for engaging and disengaging the axle, substantially as described.

6. The combination, in a roller-skate, of an axle, a roller having a central bore, a bush secured in the bore, and a ring at the inner end of the bush provided with an outwardly-projecting finger or fingers for engaging and disengaging the axle, substantially as described.

7. The combination, in a roller-skate, of an axle having an annular recess, a roller having a bore, a bush secured in the bore and having a groove in its outer edge, and a ring at the inner end of the bush provided with a spring-finger extending outward in the groove for engaging and disengaging the annular recess in the axle, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

D. WALTERS.

Witnesses:
W. J. ROBIE,
E. H. DENNIS.