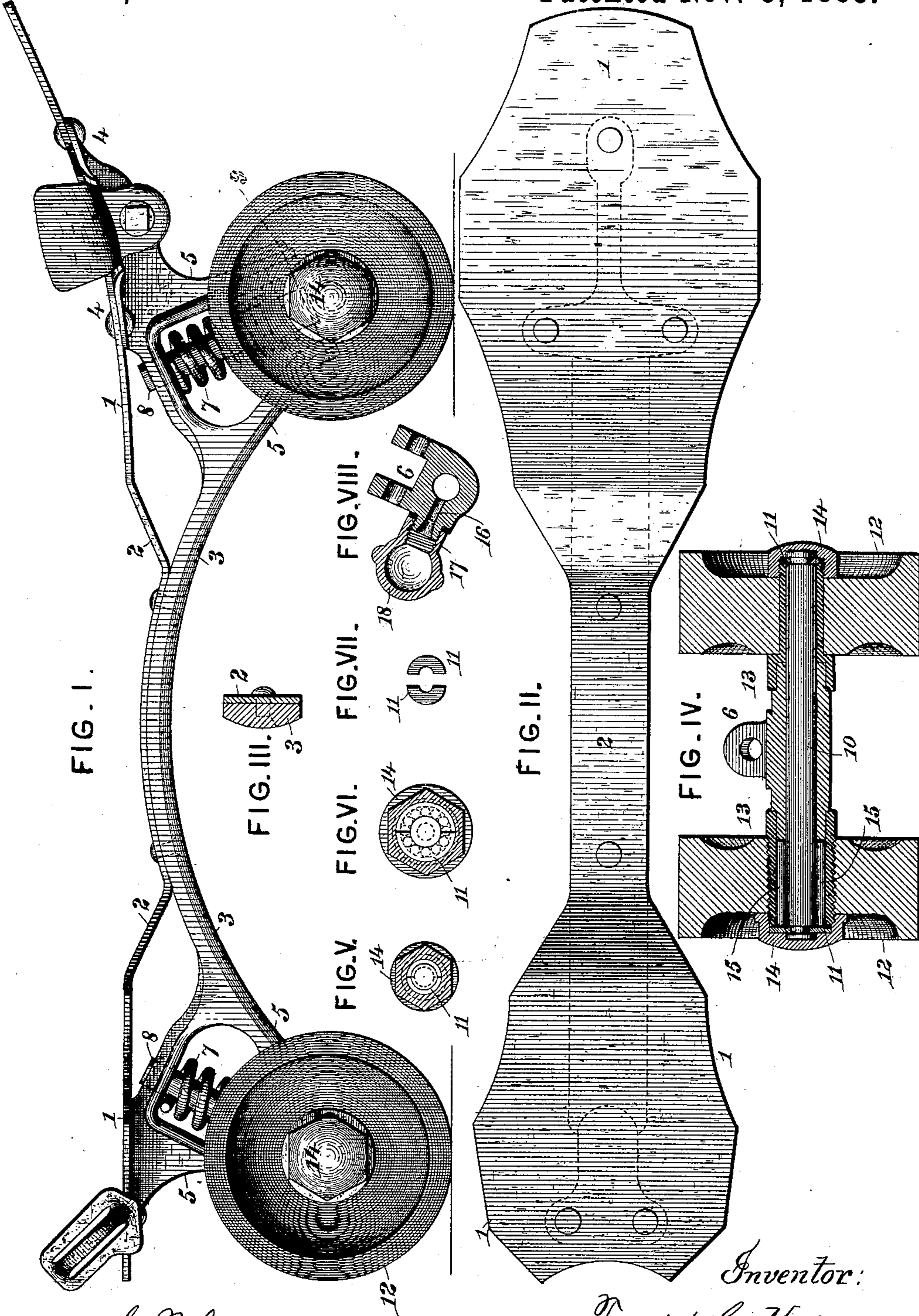


(No Model.)

F. C. MILLER.
ROLLER SKATE.

No. 329,584.

Patented Nov. 3, 1885.



Attest: { Geo. P. Smallwood.
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UNITED STATES PATENT OFFICE.

FREDRICK C. MILLER, OF NEWPORT, KENTUCKY.

ROLLER-SKATE.

SPECIFICATION forming part of Letters Patent No. 329,584, dated November 3, 1885.

Application filed April 21, 1885. Serial No. 162,955. (No model.)

To all whom it may concern:

Be it known that I, FREDRICK C. MILLER, a citizen of the United States, residing at Newport, in the county of Campbell and State of Kentucky, have invented certain new and useful Improvements in Roller-Skates, of which the following is a specification.

My improvements relate, primarily, to roller-skates in which a bridge-piece or reach is providing for bracing the foot-plate, and having its ends so formed as to serve as housings for the oscillating axle-box and cushioning-springs; but the said improvements are in part applicable to any other kind of roller-skate.

In my improved skate the foot-plate is made with a downward bend between the toe and heel rests or plates, and is riveted at this intermediate point, as well as at its ends, to the reach, so as to render the two parts perfectly rigid. By reason of this downward bend of the foot-plate no obstruction is offered to the shoe-heel of the wearer, and the skate is thus applicable to shoes having heels of various sizes.

The floor-rollers of my improved skate are provided with bushings screwed or otherwise fixed in position, and projecting on each side beyond the roller in such manner as to receive on the outside a screw-cap for covering the end of the axle, and at its inner side to project over the ends of the axle-box for the purpose of preventing the oil from flowing out of the bushing onto the sides of the roller. The bushing may be made to receive the ends of the axle directly, or may be somewhat larger than the axle to permit the insertion of a series of anti-friction rollers between the axle and bushing. The bushing is preferably lubricated by means of a cup screwed upon the axle-box, so as to supply the oil through a suitable way to the bearing of the axle in said box, and thence to the interior of the rollers.

In order that the invention may be better understood, I will proceed to describe it with reference to the accompanying drawings, in which—

Figure I represents in side elevation my improved skate. Fig. II is a plan of the foot-plate. Fig. III is a transverse section through the coupling-reach and foot-plate on the line III III, Fig. I. Fig. IV represents in axial section one of the trucks. Fig. V is a detail sec-

tional view of an axle and wheel having a plain bushing. Fig. VI is a similar view showing a roller-bushing. Fig. VII is a detail view of the split disk or key for securing the roller upon the axle. Fig. VIII is a vertical sectional view of the lubricator applied to the axle-box.

1 represents the foot-plate, preferably of wrought metal, having downwardly-bent portion 2, made to conform to the shape of the arched coupling-reach 3, which is preferably substantially of the form shown in my co-pending application, No. 161,453, filed April 7, 1885. Being riveted at this intermediate point to such reach, the foot-plate is firmly braced by the inclined connecting portions 4, and it will be seen that no elevations upon the foot-plate are made to interfere with the application of the skate to a shoe having a heel of any size. The ends of the coupling-reach are provided with yokes or standards 5 for the axle-box 6, cushion-spring 7, and guide-pin 8, which are of the form substantially as described in my aforesaid co-pending application. The axle-box is pivoted between the standards 5 by a pivot-pin, 9, and bears loosely within it the solid axle 10, grooved at both ends to receive a split disk, 11, which serves as a key to prevent the floor-rollers 12 from coming off their axle. The said floor-rollers are provided with cylindrical bushings 13, screwed or otherwise fixed therein. The bushings are made of sufficient length to project over the ends of the axle-box at one side of the roller, and to receive at the other side a screw-cap, 14, by which means the oil supplied to the bushing is kept from flowing onto either side of the floor-roller. The cap 14 serves also, when screwed to position, to retain the two halves of the disk 11 within the groove in the axle, so as to aid it in preventing the separation of the roller from the axle. The bearing of the axle may be directly upon the bushing, as shown at the right hand in Fig. 4, or a series of anti-friction rollers, 15, may be interposed between the two, as shown on the left hand of said figure, as preferred. At its center the axle-box is provided with an oil duct or way, 16, surrounding which duct a screw-threaded neck, 17, is formed on the said axle-box to receive the neck of a lubricator-cup, 18. It will be observed that the cup, being filled

with oil and then applied to the neck 17, will yield a constant supply of oil to the bearing between the axle and its box, and thence to the interior of the bushing.

5 Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent—

1. In a roller-skate, the combination, with a coupling-reach of arch form having standards
10 for attachment to the wheel-trucks, of a foot-plate having a downwardly-bent body portion connected to the body of the reach and its ends secured to the ends of the reach, substantially as set forth.

15 2. In a roller-skate, the combination, with the floor-wheels, of an axle having grooves at its outer ends, split disks occupying said grooves for retaining the wheels upon the axle, bushings having screw-threads at their
20 outer ends and forming boxes for the ends of the axle, and screw-threaded caps secured to said bushings for retaining the disks in place, substantially as set forth.

3. In a roller-skate, the combination, with the
25 floor-wheels, axle, and axle-box having reduced ends, of bushings having annular extensions at their inner ends for surrounding the ends of the axle-box, substantially as set forth.

4. In a roller-skate, the combination, with
30 the floor-wheels, of an axle having grooves at its outer ends, split disks occupying said grooves for retaining the wheels upon the axle, bushings having screw-threads at their outer ends and surrounding the ends of the axle,
35 axle-box, cylindrical rollers occupying the annular spaces around the ends of the axle within the bushings between the ends of the axle-box and disks, and screw-threaded caps secured to said bushings for retaining the disks in place,
40 substantially as set forth.

5. In a roller-skate, the combination of floor-

wheels, axle having grooves at its outer ends, axle-box having reduced ends, bushings having annular extensions at their inner ends and screw-threads at their outer ends, series of
45 cylindrical rollers between the axle ends and bushings in line with the axle-box, split disks, and screw-threaded caps, substantially as set forth.

6. In combination with an axle and floor
50 wheel or roller, a cylindrical bushing and a cap applied to the bushing, and a series of anti-friction cylindrical rollers occupying the space in the bushing between the disks and axle-box, substantially as set forth.

7. In combination with an axle and floor
55 wheel or roller, a cylindrical bushing projecting outwardly to receive a cap-nut, and a washer in a groove at the end of the axle to prevent the wheel or roller from coming off,
60 and a series of anti-friction rollers arranged between the bushing and axle, substantially as set forth.

8. The combination of the grooved axle, split disks applied thereto, floor-wheels or
65 floor-rollers, bushings in said floor-wheels or floor-rollers having screw-threaded outer ends, and screw-caps for covering the ends of the axle and bushing and retaining the floor-wheels or floor-rollers and split disks in position, sub-
70 stantially as set forth.

9. The combination of an axle-box formed with a screw-threaded projection, and having duct or way 16 through the screw-threaded pro-
75 jection, and the removable cup or lubricator 18, having screw-threaded mouth 17, secured to the projection, substantially as set forth.

FREDRICK C. MILLER.

Witnesses:

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