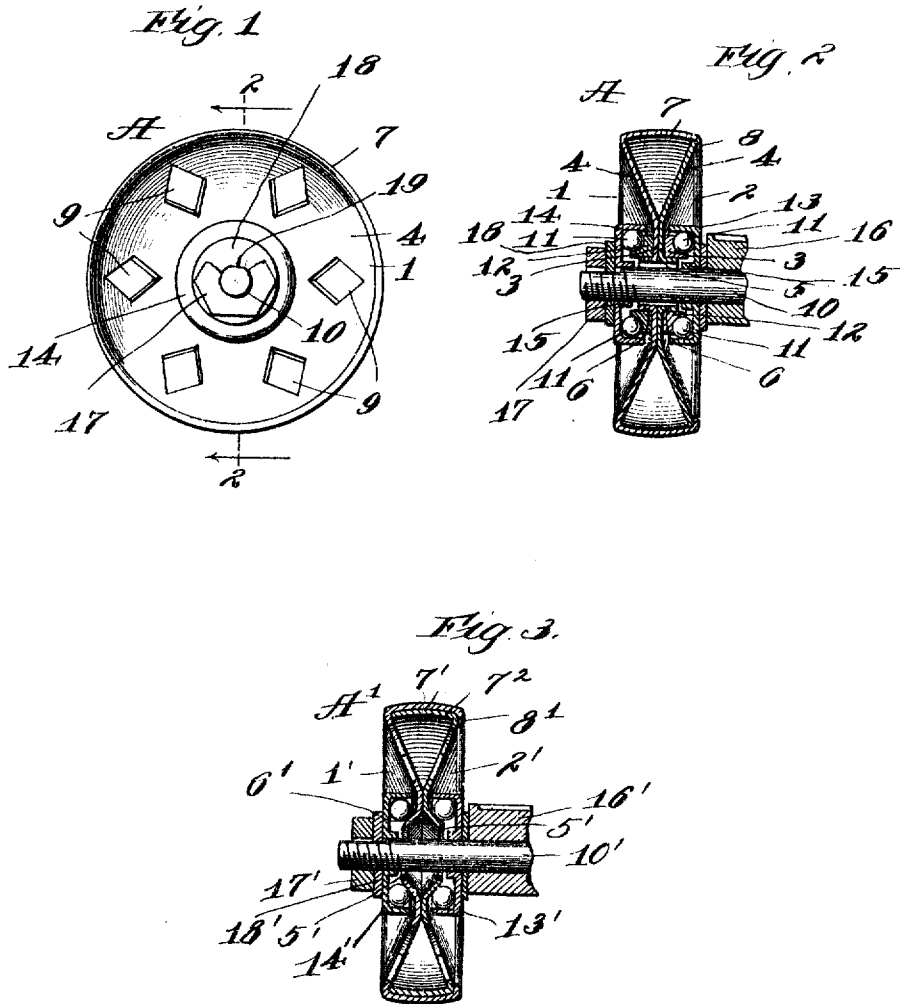


939,451.

Patented Nov. 9, 1909.



Witnesses:

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UNITED STATES PATENT OFFICE.

THOMAS SPACIE, OF CHICAGO, ILLINOIS.

ROLLER-SKATE.

939,451.

Specification of Letters Patent.

Patented Nov. 9, 1909.

Application filed August 22, 1908. Serial No. 449,769.

To all whom it may concern:

Be it known that I, THOMAS SPACIE, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Roller-Skates, of which the following is a specification.

This invention relates to skate rollers.

The primary object of the invention is to provide a skate roller made wholly or principally of sheet metal, preferably mild sheet steel, which will be simple in construction, strong, durable and relatively light in weight; which can be manufactured at a relatively small cost; and which will be neat and ornamental in appearance. To effect these ends a skate roller of my invention comprises the various features and details of construction hereinafter described and claimed.

In the accompanying drawing, in which my invention is fully illustrated, Figure 1 is a side view of my improved skate wheel. Fig. 2 is a sectional view thereof on the line 2—2 of Fig. 1. Fig. 3 is a sectional view, similar to Fig. 2, of a skate roller embodying my invention in modified form.

The body portion of my improved skate roller, designated, as a whole, by A, consists of two substantially symmetrical sections 1 and 2, stamped or pressed from suitable sheet metal of a thickness to afford requisite strength, say one sixteenth of an inch.

Each of the sections 1 and 2 comprises a web consisting of a central flat portion 3 and an inclined portion 4 to which the tread of the wheel is secured. The central flat portions 3 of said webs are provided with axial openings 5 through which the axle of the wheel is adapted to pass freely and surrounding said openings 5 are flanges 6 formed, as shown, by the metal stamped out in forming said openings 5.

The tread portion 7 of the roller is formed integral with one of the roller sections 1 or 2, as shown, with the section 1, by stamping or pressing the outer portion of the blank from which said section is formed into proper shape.

To form the body portion A of the roller, the sections 1 and 2 are placed together with their flat portions 3 in contact and with the inclined portions 4 thereof diverging outwardly. The tread portion 7 of the section 1 is made of such width that when the sections 1 and 2 are assembled to form the

roller body A, the outer edge of said tread portion 7 will project beyond the outer face of the section 2 and the said sections 1 and 2 are secured together to form a rigid structure by turning the edge of the tread portion 7 of the section 1 over the outer edge of the section 2, as clearly shown at 8.

In order to make the roller A as light as possible, holes or openings 9 are preferably formed in the webs thereof, preferably in the inclined portions 4, said holes or openings being made as large as consistent with requisite strength. Said holes or openings 9 will also impart an ornamental finish to the wheel.

The body portion A of the roller is revolutely mounted on the axle 10 by means of ball bearings, consisting, as shown in Fig. 2, of antifriction balls 11, running in suitable ball races formed in cones 12 and cups 13 and 14. The cones 12 are preferably made of tool steel, hardened, and are mounted directly on the body portion A of the roller concentric therewith by means of axial holes or openings therethrough adapted to engage the flanges 6 on the body portion of the roller, being preferably tightly fitted thereto so as to be retained thereon by frictional engagement therewith. The inner sides of the cones 12 are designed and adapted to bear against the flat portions 3 of the webs of the roller.

The ball cups 13 and 14 are mounted directly upon the axle 10 concentric therewith, being provided with axial openings closely fitted thereto. To provide bearings of desired length for the said cups on said axle, they are preferably provided with flanges 15, which surround the holes or openings therein which receive said axle. Said flanges are preferably formed of the metal stamped or pressed out in forming the axial openings in said cups. The inner cup 13 bears against the skate truck 16 or a washer interposed between said cup and skate truck and, preferably engages the same with a close sliding fit only. If desired, however, my invention contemplates screw-threading said cup 13 to the axle. This construction is objectionable, however, for the reason that it unnecessarily weakens the axle. The outer cup 14 is in screw-threaded engagement with the axle 10 and is adapted to be secured in any desired adjustment thereon by means of a nut threaded to said axle outside of said cup 14, a washer 18 secured to the axle 10 against

rotation, being preferably inserted between said cup 14 and the nut 17. As shown, said washer is secured against rotation by correspondingly flattening a side of the axle 10 and of the hole or opening through said washer, as shown at 19, Fig. 1.

Due to the arrangement shown and described, in which the cones of the ball bearings are mounted on the wheel inside of the ball cups, said ball cups will prevent access of dirt and dust to the bearings, thus dispensing with separate dust caps and correspondingly simplifying and cheapening the construction.

In Fig. 3 of the drawing, I have illustrated a modified form of my improved roller, said modification relating particularly to the construction of the tread thereof and to the cones of the ball bearings. Referring now to said Fig. 3, A¹ designates the body portion of the roller, 1¹ and 2¹ the sections thereof, 10¹ the axle, 13¹ and 14¹ the inner and outer ball cups, respectively, 16¹ the skate truck and 17¹ and 18¹, respectively, the lock nut and washer for securing the ball cup 14¹ upon the axle 10¹, all of which are substantially identical in construction, function and operation with the corresponding parts of the roller shown in Figs. 1 and 2. As regards the tread portion of the roller, said modification consists in forming tread flanges 7¹ and 7² on the sections 1¹ and 2¹ respectively, of the roller, the tread flange 7¹ being the same as the tread flange 7, Figs. 1 and 2, and the tread flange 7² being sufficiently smaller in diameter than the flange 7¹ to fit snugly inside thereof and being of such width that its edge which extends beneath the flange 7¹ will bear against the inner side of the web portion of the section 1¹ of the roller when assembled. The sections 1¹ and 2¹ are secured together to form a rigid structure by turning the outer edge of the tread flange 7¹ over the angular edge of the section 2¹, as shown at 8¹. While said modified form of roller will obviously be stronger than the roller shown in Figs. 1 and 2, particularly to withstand the stamping or pressing operation in turning over the edge 8¹ in securing the sections 1¹ and 2¹ together, it will weigh slightly more. Furthermore it is believed that said additional strength is superfluous and that the form of roller shown in Figs. 1 and 2 is sufficiently strong for all practical purposes.

As regards the cones of the ball bearings, the modification shown in Fig. 3 consists in forming said cones integral with the sections 1¹ and 2¹, which can be conveniently effected by making the flanges which surround the openings 5¹ in the sections 1¹ and 2¹ of said roller of proper shape and size to form said cones, as shown at 6¹.

I claim—

1. A skate roller comprising a body por-

tion consisting of two sections, each comprising a web consisting of a central flat portion and an outer inclined portion, and a tread portion formed integral with the web of a section of said roller, said sections being arranged with their flat web portions in contact and their inclined web portions outwardly divergent, and means for securing the outer edge of the tread portion of the roller to the roller section other than that on which said tread portion is formed, the webs of said roller sections being provided with central openings adapted to receive the axle of the skate.

2. A skate roller comprising a body portion consisting of two sections, each comprising a web consisting of a central flat portion and an outer inclined portion, and a tread portion formed integral with the web of one section of said roller, said sections being arranged with their flat web portions in contact and their inclined web portions outwardly divergent, and means for securing the outer edge of the tread portion of the roller to the roller section other than that on which said tread is formed, said means consisting of an inwardly projecting flange on said tread portion with which the edge of said roller section interlocks, the webs of said roller sections being provided with central openings adapted to receive the axle of the skate.

3. A skate roller comprising a body portion consisting of two sections, each comprising a web consisting of a central flat portion and an outer inclined portion, a tread portion formed integral with the web of a section of said roller, said sections being arranged with their flat web portions in contact and their inclined web portions outwardly divergent, and means for securing the outer edge of the tread portion of the roller to the roller section other than that on which said tread portion is formed, the webs of said roller sections being provided with central openings adapted to receive the axle of the skate and flanges on said webs, which surround said openings.

4. A skate roller comprising a body portion consisting of two sections, each comprising a web consisting of a central flat portion and an outer inclined portion, a tread portion formed integral with the web of a section of said roller, said sections being arranged with their flat web portions in contact and their inclined web portions outwardly divergent, and means for securing the outer edge of the tread portion of the roller to the roller section other than that on which said tread portion is formed, the webs of said roller sections being provided with central openings adapted to receive the axle of the skate and flanges formed integral with said webs which surround said openings.

5. In a skate, the combination with the axle thereof, of a skate roller comprising a body portion consisting of two sections, each comprising a web consisting of a central flat portion, and an outer inclined portion, and a tread portion formed integral with the web of a section of said roller, said sections being arranged with their flat web portions in contact and their inclined web portions outwardly divergent, and means for securing the outer edge of the tread portion of the roller to the roller section other than that on which said tread portion is formed, the webs of said roller sections being provided with central openings adapted to receive the axle of the skate, and ball bearings whereby said roller is revolubly mounted on said axle, said ball bearings comprising bearing cones on said roller, ball cups mounted on said axle and anti-friction balls secured in ball races formed between said cones and cups.

6. In a skate, the combination of the axle, a skate roller comprising a body portion consisting of two sections, each comprising a web consisting of a central flat portion and an outer inclined portion, and a tread portion formed integral with the web of a sec-

tion of said roller, said sections being arranged with their flat web portions in contact and their inclined web portions outwardly divergent, and means for securing the outer edge of the tread portion of the roller to the roller section other than that on which said tread portion is formed, the webs of said roller sections being provided with central openings adapted to receive the axle of the skate, flanges formed integral with said webs which surround said openings, and ball bearings whereby said roller is revolubly mounted on said axle, said ball bearings comprising bearing cones mounted on the flanges surrounding the axial openings in said wheel, ball cups mounted on said axle and anti-friction balls secured in ball races formed between said cones and cups.

In testimony, that I claim the foregoing as my invention, I affix my signature in presence of two subscribing witnesses, this 19th day of August, A. D. 1908.

THOMAS SPACIE.

Witnesses:

LOUISE HUBBARD,
B. M. BROWN.