F. E. & B. R. BROWN.

ROLLER SKATE WHEEL.

APPLICATION FILED JUNE 29, 1915.

1,186,074. Patented June 6, 1916.

Fig. 1.

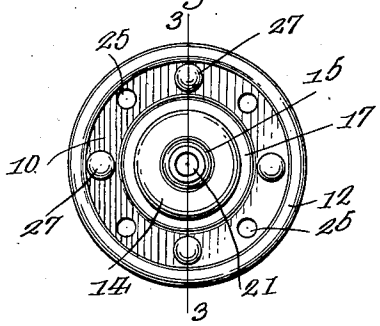


Fig. 2.

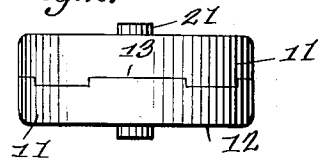


Fig. 3.

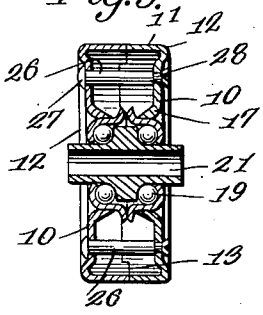


Fig. 4.

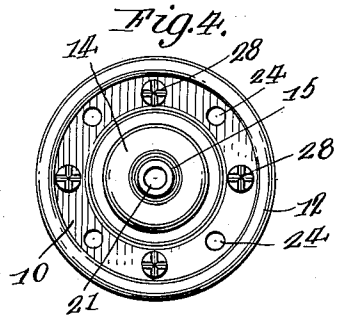


Fig. 5.

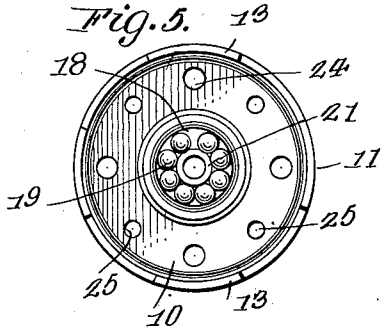


Fig. 6.

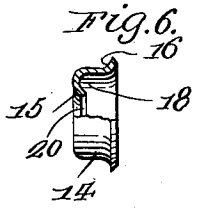


Fig. 7.

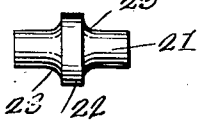
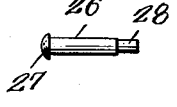


Fig. 8.



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UNITED STATES PATENT OFFICE.

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ROLLER-SKATE WHEEL.

1,186,074. Specification of Letters Patent. Patented June 6, 1916.

Application filed June 29, 1915. Serial No. 37,090.

To all whom it may concern:

Be it known that we, FRANK E. BROWN and BURNICE R. BROWN, citizens of the United States, residing at Webster City, in the county of Hamilton and State of Iowa, have invented certain new and useful Improvements in Roller-Skate Wheels, of which the following is a specification.

This invention relates to skate wheels or casters and contemplates as its principal object the provision of a skate roller formed of twin mating casings, supporting twin race plates whereby antifriction bearings are maintained in contact with the hub of the wheel.

More specifically, it is an object to provide a pair of annular casings peripherally flanged and having the edges of such flanges stepped for a mutually mating contact, a race plate formed of a single piece being provided for each casing and the casings being equipped with means maintaining them in a braced and spaced relation.

The above and additional objects which will be hereinafter more specifically treated are accomplished by such means as are illustrated in the accompanying drawings, described in the following specification and then more particularly pointed out in the claims which are appended hereto and form a part of this application.

With reference to the drawings, wherein there is illustrated the preferred embodiment of this invention as it is reduced to practice and throughout the several views of which like characters of reference designate similar parts:—Figure 1 is a side elevation of the skate caster of this invention, Fig. 2 is a plan view of the same subject-matter, Fig. 3 is a vertical sectional view taken on the plane indicated by the line 3—3 of Fig. 1, Fig. 4 is an opposite side elevation of the skate wheel, Fig. 5 is an interior view of one of the skate casings, Fig. 6 is a detail view of one of the race plates, Fig. 7 is a detail of the hub or trunnion, and Fig. 8 is a detail of the rivet means spacing and bracing the casings.

Each of the casings employed to form the tread of the roller skate caster is the counterpart of the other and may be readily pressed or otherwise formed up from a suitable sheet metal which will impart to the wheel the desired lightness and durability. Each casing includes a body portion 10 of disk like formation having its periphery formed with the inwardly directed flange 11, an annular bead 12 being pressed out of the metal at the juncture of the flange 11 with the disk 10. The edge of this annular flange, which forms half of the tread for the wheel is provided with a series of mortise projections 13 of equal length and spaced to accommodate the similar projections of the mating tread casing. These stepped edges of the casing flanges prove a most effective means of uniting the tread casings while permitting each casing to be formed up in the same manner.

Ball bearing cones or race plates 14 are formed from a single piece of metal in a cup-shaped manner that provides an inwardly bent side flange 15 on one edge and an annular lip 16 on the other edge thereof. The body portion disk 10 of each tread casing is apertured to receive a race plate 14 and is formed with a flange 17 inwardly directed to surround the aperture and to contact directly with the lip 16 in providing a firm seating of the race plate. The side flange 15 of each race plate is so formed as to provide an annular raceway 18 for the antifriction ball bearings 19, and is axially apertured as at 20 for the admission of the wheel hub or trunnion 21. This hub includes a hollow shaft having its central portion raised to form an annular bearing 22, the sides 23 of which arcuately merge into the surface of the shaft to complete the formation of the raceway 18. Each of the tread casings 10 is formed with an annular series of apertures which are alternately of two different sizes denoted respectively at 24 and 25. The apertures 24 are of the larger size and are each formed through the body disk 10 with their centers on the radial center line of each mortise enlargement 13. The smaller apertures 25 on the contrary each have centers placed on the radial line drawn to the center of the space separating the mortise enlargements and thus alternately space the larger apertures 24. The purpose of this arrangement is for the proper reception of the rivet means illustrated in Fig. 8 in which the shank or body portion 26 of the rivet is formed at opposite extremities with a head 27 and a reduced upsetting extremity 28. The diameter of the shank 26 is such as to be readily accommodated within the larger apertures 24 and that of the reduced extremity 28 is such as to be accommodated readily within the

smaller apertures 25 of the opposite tread casing, which as will be explained, facilitates to a great degree the assembling of the skate after the parts have been cut, turned or pressed out from the dies and formers.

The assembler of the roller of this invention takes a pair of tread casings 10 and fits each one with its race plate 14, which owing to the construction described is forced into a very tight wedging contact with the disk flange 17. Ball bearings are placed in both of the race plates, which are then brought together on opposite sides of the hub enlargement 22, in such manner that the mortise enlargements 13 of the stepped peripheries of the casings are brought into mating contact with each other, as illustrated to advantage in Fig. 2. The rivets 26 may then be inserted through the apertures 24 of either of the casings, and may then have their extremities 28 barred and upset upon the body disk 10 of the opposite casing. In this manner the assembler is not forced to position the rivets in a particular place or through a particular casing but may insert them from either casing at will, producing the wheel caster shown in elevation in Figs. 1 and 4.

While in the foregoing, however, there has thus been illustrated in the drawings and described in the specification such combination and arrangement of elements as constitute the preferred embodiment of this invention, it is desired to emphasize the fact that such minor changes in the matters of proportion and degree may be made in later adaptations of this device as shall not alter the spirit of the invention as defined in the appended claims.

What is claimed is:—

1. A roller including a pair of twin tread casings, and interengaging mortises and tenons on said casings.

2. A roller including a pair of body members provided with annular inwardly extending treads, and interengaging mortises and tenons on said treads.

3. A roller including twin body casings, interiorly directed flanges providing a central aperture, tread flanges, means mutually interlocking said tread flanges, twin ball plates wedgingly received within the apertures provided by the first mentioned flanges, an inwardly directed flange on each ball plate providing a central aperture therethrough, and a hub accommodated in the last said apertures.

4. A roller including twin body casings, interiorly directed flanges providing a central aperture, tread flanges, means mutually interlocking said tread flanges, twin ball plates wedgingly received within the apertures, provided by the first mentioned flanges, an annular lip formed on each ball plate to contact with the first said apertures, an inwardly directed flange on each ball plate providing a central aperture therethrough, and a hub accommodated in the last said apertures.

5. A roller including twin body disks each provided with a central aperture and an annular bead, a tread flange formed on each bead, interengaging mortises and tenons provided on the edge of said flanges, ball plates wedgingly accommodated in said apertures, a hub, and means for connecting said disks.

6. A roller including tread casings, interengaging means formed on the inner edges of said casings and each casing having an annular series of apertures of different sizes and alternately spaced, a hub, twin ball plates clamped between said casings and coacting with said hub to form a plurality of ball receways, and rivet means adapted to space and brace said casings and each having different sized portions for engagement with a pair of different sized apertures.

7. A roller including a tread member comprising two casings each having flanges co-acting to form the tread, said members being centrally apertured, a hub having an enlarged portion, bearing members disposed on either side of said enlarged portion and lying within the central apertures of said casings, and means securing said casings together to assemble said roller.

In testimony whereof we affix our signatures in presence of two witnesses.

FRANK E. BROWN.
BURNICE R. BROWN.

Witnesses:
H. P. Ash,
W. Blankinbuehler.