F. S. MORTON.

WHEEL OR ROLLER.

APPLICATION FILED FEB. 13, 1909.

948,063. Patented Feb. 1, 1910.

Fig. 1.

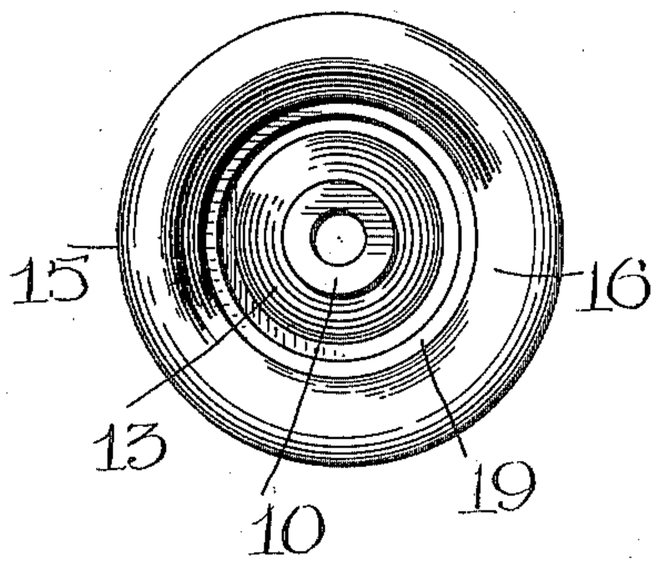


Fig. 2.

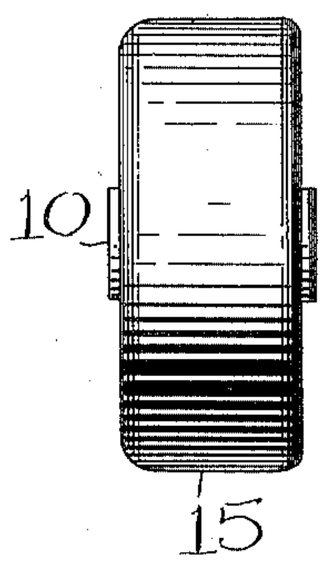


Fig. 3.

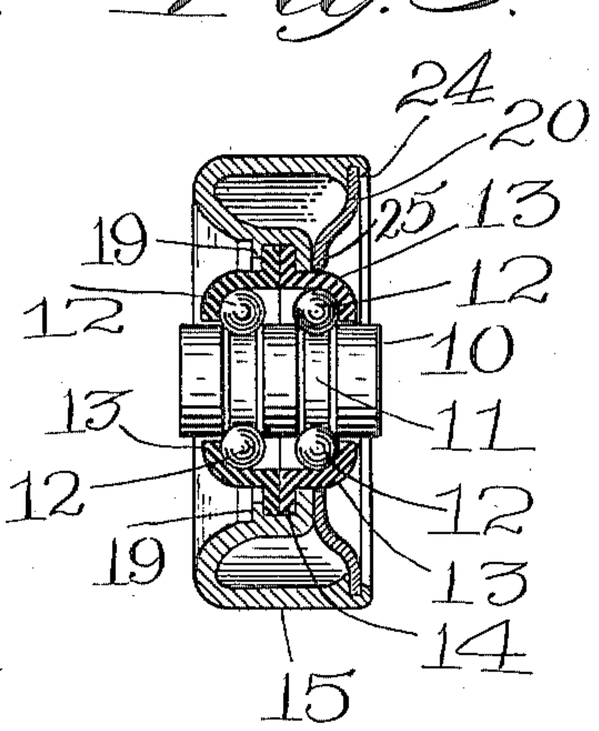


Fig. 4.

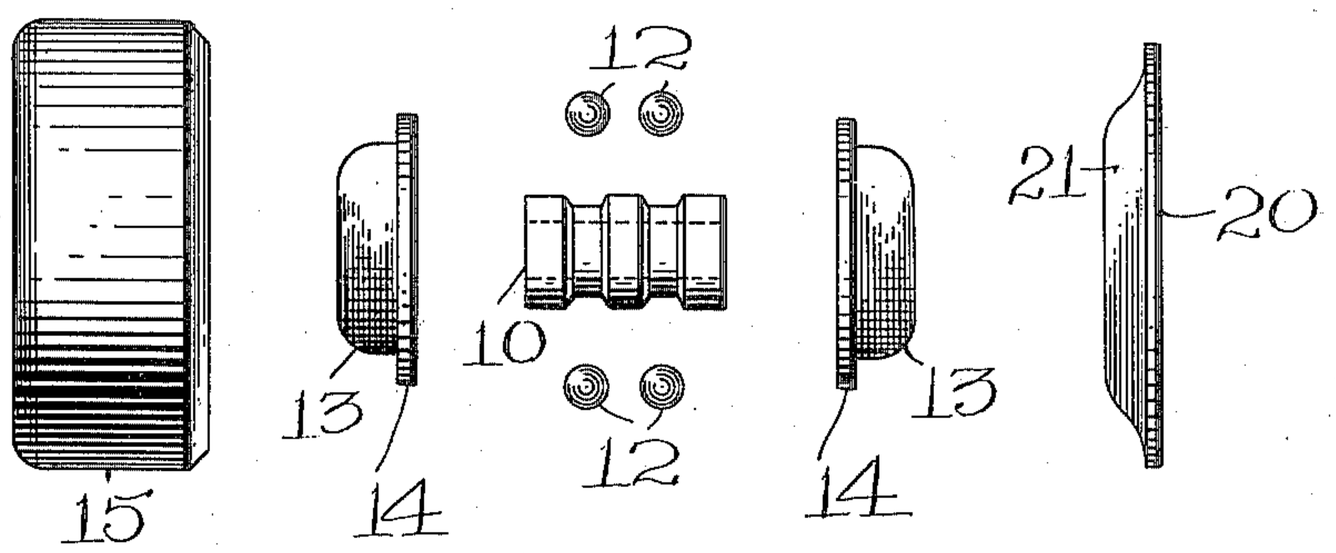


Fig. 6.

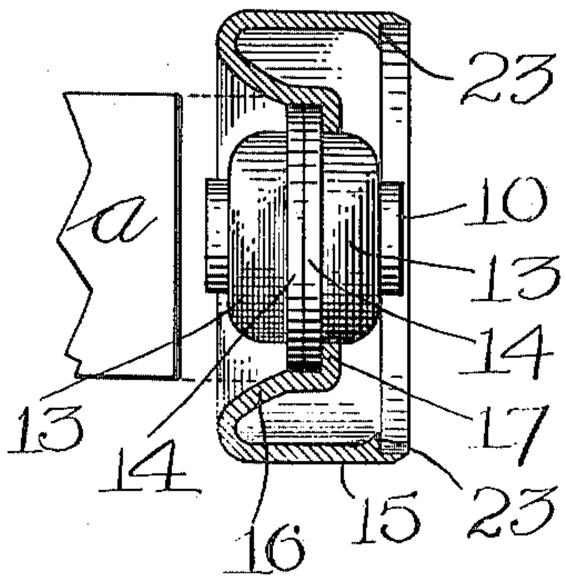
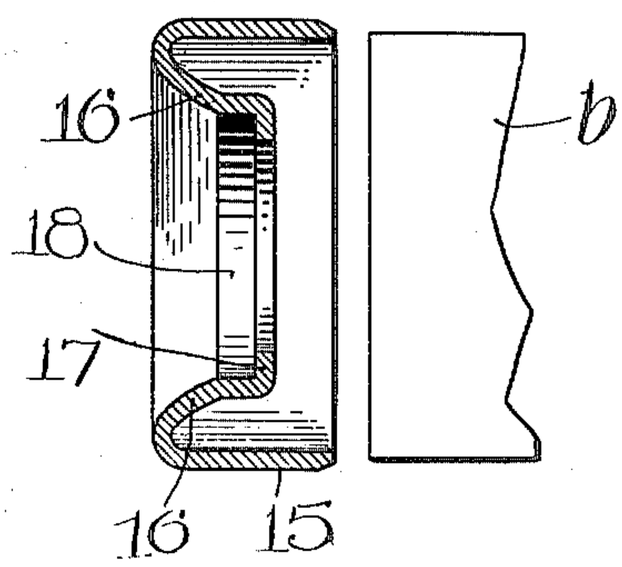


Fig. 5.



Witnesses:

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UNITED STATES PATENT OFFICE.

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WHEEL OR ROLLER.

948,063. Specification of Letters Patent. Patented Feb. 1, 1910.

Application filed February 13, 1909. Serial No. 477,752.

To all whom it may concern:

Be it known that I, FRED S. MORTON, a subject of the King of Great Britain, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Wheel or Roller, of which the following is a specification.

This invention relates to a wheel or a roller formed of sheet metal.

The principal objects of the invention are to provide a strong and durable construction of such character that the parts can be stamped out of relatively small number of pieces of sheet metal in an inexpensive manner and can be fixed in their final position with respect to each other in a simple, inexpensive and firm manner; also to provide certain improvements in details of construction as will appear hereinafter.

Reference is to be had to the accompanying drawings in which,

Figure 1 is a side elevation of a practicable form of the invention, Fig. 2 is an end view thereof, Fig. 3 is a longitudinal sectional view, Fig. 4 is an end view of the same showing the parts disassembled, and Figs. 5 and 6 are sectional views showing two steps in the manufacture of the article.

The invention is shown embodied in a form suitable for small wheels or rollers and having a shaft or stud 10, with two raceways 11, for the bearing balls 12. Outside of this is a ball race 13, shown as consisting of two pieces of sheet metal having abutting flanges 14 extending outwardly and in contact with each other so as to form a hub. These two parts are not directly secured together but are intended to be held in a proper position by the other parts of the wheel.

The rim or tread 15, of the wheel is provided with an integral inwardly extending edge which is forced inwardly to a point beyond the center, so as to form a side wall 16. At its inner end this has an inwardly extending projection 17, forming a shoulder against which one of the flanges 14 rests. In the condition of this part of the wall 16 shown in Fig. 5, there is a cylindrical passage 18 extending outwardly from the projection 17, to permit the ball race to be inserted to assume the position shown in Fig. 6. The ball race is held in position by introducing a punch *a* into the cupped out portion of the wall 16 as indicated in Fig. 6, and upsetting a part of the metal thereof to form an annular projection 19, for engaging flange 14, of the left hand part of the ball race. This permanently secures the ball race in position. It is to be observed that the edge or wall 16 is integral with the tread or rim 15 and formed therewith in one series of operations as shown in Fig. 5.

The other side wall of the wheel is formed by a circular plate 20 having an inwardly projecting portion 21 provided with a central circular perforation for receiving the shoulder of the ball race. In order to insert the plate 20, a punch *b* is forced into the open end of the rim of the wheel so as to form an inwardly extending shoulder 23 against which the edge of the plate 20 can rest. This plate is then put into position with its outer edge against the shoulder 23, and its inner edge against the projection 17 and the shoulder of the ball race. Another punch is introduced to upset the edge of the rim at 24, to cover the edge of the plate 20, and this securely holds the latter in position, and as its inner circular edge 25 abuts against the projection 17 and the cylindrical surface of the ball race or hub it will be seen that what was originally the open edge of the rim is firmly supported. During these punching operations the blank is held in dies as is well understood in this art.

It will be seen that by means of this construction a very simple, strong and durable roller or wheel is obtained that can be manufactured in an inexpensive manner, and that consists of only four parts.

While I have illustrated and described one embodiment of the invention, I am aware that many modifications can be made therein, by any person skilled in the art without departing from the scope of the invention as expressed in the claims. Therefore, I do not wish to be limited to all the features of construction or steps of manufacture shown and described, but what I do claim is:—

1. As an article of manufacture, a wheel or roller having a rim or tread, an integral wall extending inwardly from one edge thereof and substantially across the wheel or roller to a point near the opposite side, a ball race held by said integral wall, and a wall connected with the free edge of the rim or tread and with the inner portion of the integral wall.

2. As an article of manufacture, a wheel

or roller comprising a rim or tread having an integral inwardly extending wall on one side provided with an inner annular groove at its inner edge, and a ball race having a circular flange held in said groove.

3. As an article of manufacture, a wheel or roller comprising a rim or tread having an integral inwardly extending wall on one side provided with an inner annular groove at its inner edge, a ball race having a circular flange held in said groove, and a plate abutting at its inner edge against the inner edge of the integral wall and the surface of the ball race, and fixed at its outer edge to the rim or tread.

4. As an article of manufacture, a wheel or roller having a rim or tread, a wall extending inwardly therefrom, and a ball race or hub, said wall having an inwardly extending edge and said ball race having a projection resting against said edge, said wall being upset on the other side of the projection to hold it in place.

5. A wheel or roller comprising a rim or tread having an integral inwardly extending wall on one side, a separate wall on the other side, said rim having an annular groove for receiving the outer edge of the separate wall and the inner edge of the separate wall abutting against the inner portion of said integral wall, said integral wall having an annular groove, and a ball race or hub in two parts projecting into said groove.

6. A wheel or roller comprising a rim or tread having an integral inwardly extending wall having an inner annular groove, and a ball race or hub in two parts projecting into said groove and held thereby.

7. As an article of manufacture, a wheel or roller having a rim or tread, and provided with a wall integral with the rim or tread, another wall separate therefrom, and a ball-race or hub connected with said walls, said rim or tread having a groove in its edge to secure the edge of the separate wall.

8. As an article of manufacture, a wheel or roller having a rim or tread, a fixed wall extending inwardly therefrom on one side, a ball race held by said fixed wall, and a plate on the other side abutting against the outside of the ball race and connected with the edge of the rim or tread.

In testimony whereof I have hereunto set my hand, in the presence of two subscribing witnesses.

FRED S. MORTON.

Witnesses:
ALBERT E. FAY,
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