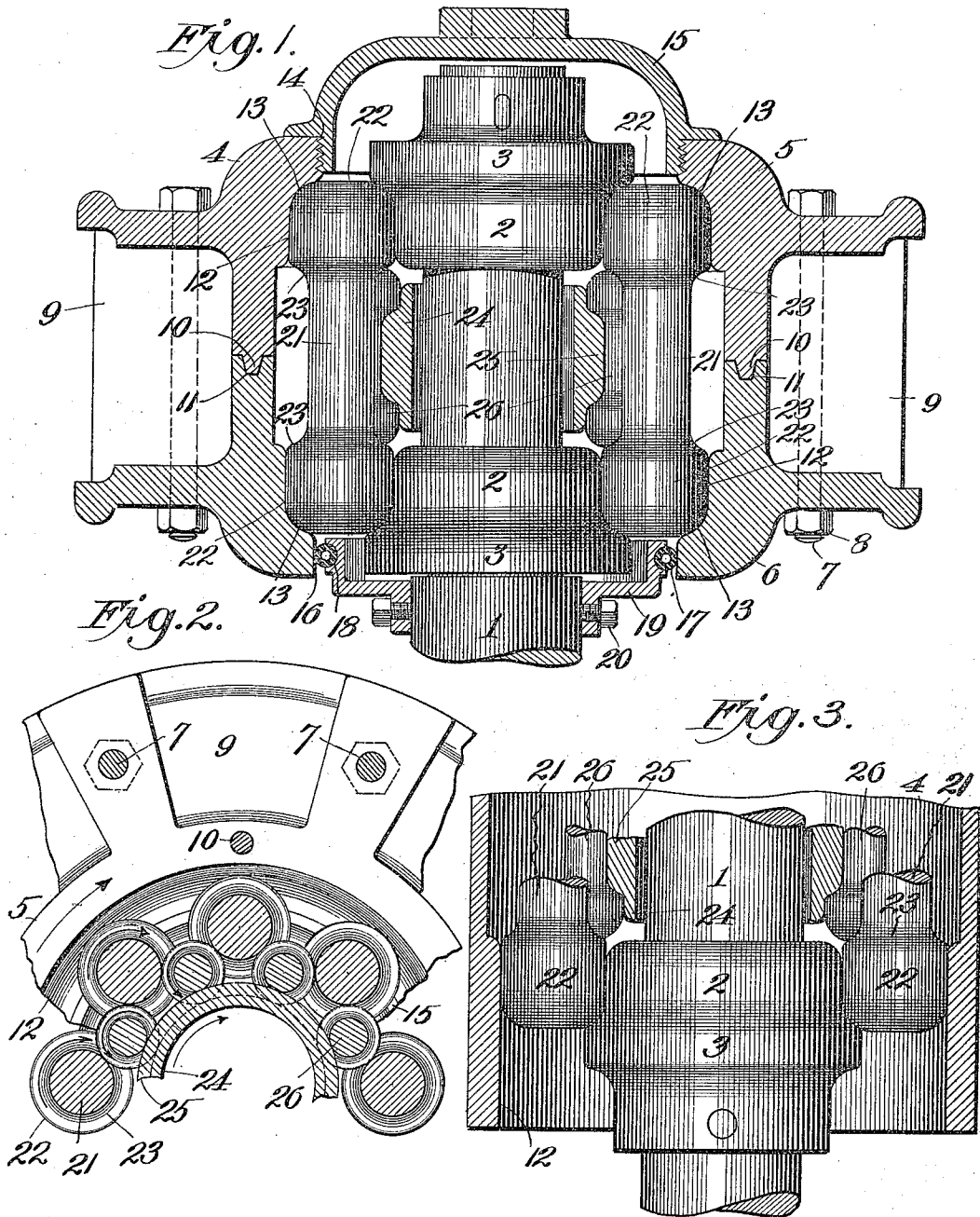


J. F. FOSTER.
 ROLLER BEARING.
 APPLICATION FILED SEPT. 15, 1908.

962,333.

Patented June 21, 1910.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN F. FOSTER, OF ARGENTINE, KANSAS.

ROLLER-BEARING.

962,333.

Specification of Letters Patent. Patented June 21, 1910.

Application filed September 15, 1908. Serial No. 453,145.

To all whom it may concern:

Be it known that I, JOHN F. FOSTER, a citizen of the United States, residing at Argentine, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Roller-Bearings, of which the following is a specification.

This invention relates to roller-bearings, and my object is to produce an efficient and reliable bearing of the character named which possesses the desirable features of simplicity, strength, durability and inexpensiveness of construction.

With this object in view, the invention consists in certain novel and peculiar features of construction and organization as hereinafter described and claimed; and in order that it may be fully understood reference is to be had to the accompanying drawing, in which—

Figure 1, is a horizontal section of a roller-bearing embodying my invention. Fig. 2, is a central vertical section of a part of the bearing taken at right angles to the section shown by Fig. 1. Fig. 3, is a horizontal section of a part of a roller-bearing of slightly modified construction.

In the said drawing, 1 indicates a shaft provided with a pair of rigid cones consisting of the inner or diametrically reduced portions 2 and the outer or enlarged portions 3, the cones being preferably rounded at their inner edges and at the junction of their inner portions with their outer portions or enlargements. The shaft 1 may be a stationary shaft or it may be a rotatable shaft, the former type being shown in Fig. 1, and the latter in Fig. 3.

Concentrically surrounding the shaft is a ring or band 4, which in Fig. 1, is preferably made of two sections 5 and 6, fastened together in any suitable manner as by bolts 7 and nuts 8. In said figure the ring or band preferably forms a hub provided with sockets 9 for the reception of spokes, not shown, one of the sections being preferably provided with bosses 10 and the other with sockets 11 to receive the bosses, these bosses and sockets coöperating with the bolts in holding the two sections together. Internally the sections of the hub are provided with tread portions 12 opposite and parallel with the peripheral surfaces of the reduced portions 2 of the cones and in the vertical plane of the enlarged portions of the cones

the tread portions are rounded or tapered inwardly as at 13, the section 5 being also internally threaded as at 14 to receive a screw cap 15 to inclose the adjacent end of the shaft. The section 6 at its point of smallest diameter is smooth as at 16 and frictionally engages a circular gasket 17 of rubber or equivalent material set in a peripheral groove 18 in a step-shaped collar 19, inclosing the enlarged end of the adjacent cone and clamped as at 20 or otherwise rigidly secured to the shaft.

A plurality of rollers comprise cylindrical neck portions 21 and head portions 22, the latter bearing against reduced portions 2 of the cones and the tread portions 12 of the ring or band, the outer ends of said heads being rounded so as to bear against and receive the end-thrust of the enlargements 3 of the cones, and the rounded portions 13 of the ring or band, the cones preventing endwise movement of said rollers and the latter preventing endwise movement of the ring or band. The rollers at the junction of their head and neck portions are rounded as at 23 and between said neck portions and concentrically surrounding and spaced from the shaft between the cones thereof is a floating band 24, provided externally with a central rib 25 and rounded at its corners and at the junction with the body portion of the band and peripherally engaging said band and the neck portions of said cones are similar but smaller rollers 26 the neck portions of the smaller rollers 26 receiving the rib of the floating band or ring and the head portions of said rollers bearing against the body of said ring at opposite sides of the rib and against the neck portions of the first-named rollers and the inner ends of the heads of said rollers, the rollers 26 thus serving to prevent endwise movement of band 24 and also hold said band spaced from the shaft 1 between the cones thereof and said rollers are prevented from moving endwise by bearing against the inner ends of the heads 22 of the first-named rollers, it being further noticed that the small or inner rollers 26 act as spacing rollers for the large rollers, as shown most clearly in Fig. 2.

In practice the travel on the ground of the wheel embodying the hub shown in Figs. 1 and 2 results in the rotation of said hub and the consequent rolling of the outer or large rollers upon the shaft cones and the rolling of the inner or spacing rollers on the

floating band, the various parts turning as indicated by the adjacent arrows.

In the construction shown by Fig. 3, the shaft is preferably driven and the band or ring 4 is stationary, and adapted as a boxing for the shaft. It will be noticed that the corners of the rollers, cones and other parts are rounded and thus any possibility of chipping through frictional engagement with other parts, is avoided. It will also be apparent that the invention is susceptible of modification in various particulars without departing from the principle of construction involved.

Having thus described the invention what I claim as new and desire to secure by Letters-Patent, is:—

1. A roller-bearing, comprising a shaft provided with a pair of cones, embodying reduced inner and enlarged outer portions, a band or ring concentrically surrounding said shaft and cones, a plurality of spool-shaped rollers interposed between and bearing at their ends against said cones and said band or ring, a floating band concentrically surrounding and spaced from the shaft between said cones, spacing rollers peripherally engaging said floating band and the neck portions of the adjacent spool-shaped

rollers to space the latter apart, a cap inclosing one end of the shaft and secured to the adjacent end of the band or ring surrounding the shaft and cones, a collar secured to the shaft and surrounding the enlarged end of the adjacent cone thereof, and a gasket secured to said collar and frictionally engaging the opposing end of the surrounding band or ring.

2. A roller-bearing, comprising a shaft provided with a pair of cones embodying reduced inner and enlarged outer portions, a band or ring concentrically surrounding said shaft and cones, and provided with peripheral sockets, a plurality of spool-shaped rollers interposed between and bearing at their ends against said cones and said band or ring, a floating band concentrically surrounding and spaced from the shaft between said cones, and spacing rollers peripherally engaging said floating band and the neck portions of the adjacent spool-shaped rollers to space the latter apart.

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

JOHN F. FOSTER.

Witnesses:

H. C. RODGERS,
G. Y. THORPE.