April 27, 1926. 1,582,530

C. NOLL

RIM NUT

Filed March 17, 1925

Fig. 1.

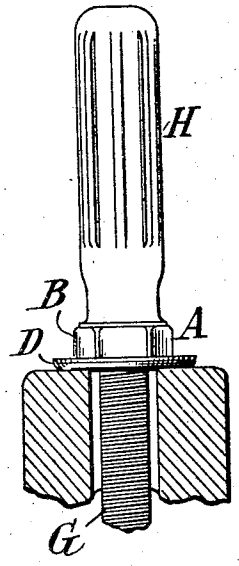


Fig. 2.

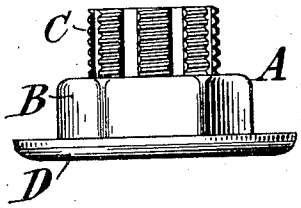


Fig. 3.

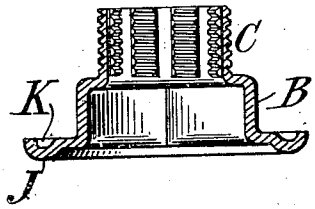


Fig. 4.

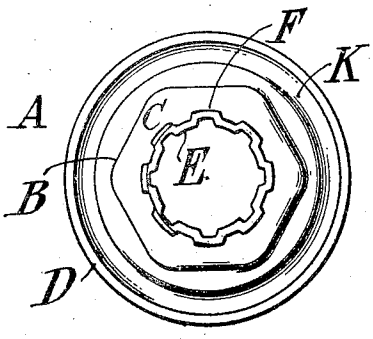
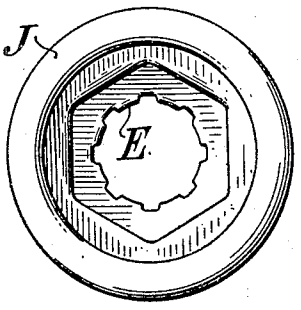


Fig. 5.



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UNITED STATES PATENT OFFICE.

CHARLES NOLL, OF BROOKLYN, NEW YORK, ASSIGNOR TO A. SCHRADER'S SON, INC., OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

RIM NUT.

Application filed March 17, 1925. Serial No. 16,080.

To all whom it may concern:

Be it known that I, CHARLES NOLL, a citizen of the United States of America, residing in the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Rim Nuts, of which the following is a specification.

This invention relates to nuts and particularly to those designed for use in connection with pneumatic tire valves for engaging the wheel rim or felly and drawing the valve casing inwardly to a firm seat. Such nuts are customarily made of sheet metal, and in order to facilitate the operations of drawing and shaping, and also for the purpose of reducing the expense of manufacture, they are made of the thinnest metal which is capable of withstanding the strains incident to their use. Where such nuts have been formed with a bushing or tubular extension internally screwthreaded to engage a valve casing, and externally screwthreaded to receive a dust cap, it has heretofore been the practice to cut these threads in metal of a thickness somewhat greater than the sum of the depths of the internal and external threads so as to leave an intermediate wall to provide for the necessary strength required.

According to the present invention I provide a nut of the type described which requires a thickness of metal only slightly in excess of the depth of one of the threads, and which, nevertheless, has sufficient strength to withstand the strains incident to use.

According to a preferred embodiment of my invention, I provide a rim nut of the general form illustrated in the application of Julius Volckhausen, Serial No. 724,382, filed July 5, 1924, wherein the thickness of the metal used is only slightly in excess of the depth of one of the threads. And in order to permit both an internal and external thread to be cut in the tubular extension of the nut, said extension has portions thereof indented, fluted or corrugated, which results in ridges being formed both on the interior and exterior of the extension, and it is in these ridges that the internal and external threads are cut. It is preferable that the indentations or corrugations extend transversely to the threads and also parallel to the axis of the tubular extension. It is to be understood, however, that these corrugations may also extend parallel to the threads.

In the accompanying drawings wherein I have shown the preferred embodiment of my invention,—

Figure 1 shows the rim nut as applied in use.

Fig. 2 is an elevation of the nut.

Fig. 3 is a diametrical section of the nut.

Figs. 4 and 5 are a top plan view and a bottom plan view respectively of the nut shown in Fig. 2.

Referring to the drawings, let A indicate the rim nut as a whole, which is formed of a single sheet of metal suitably drawn and shaped to provide a body portion B, a tubular extension C and a lateral base flange D. The body portion B is preferably formed with an exterior wrench engaging surface, herein shown as hexagonal in contour, and adapted for engagement with a wrench by means of which the nut is adapted to be tightened against a wheel rim or felly.

The tubular portion C is formed with interior ridges E and exterior ridges F which may be formed in any desired manner. Preferably the ridges E are formed by indenting inwardly, spaced portions of the tubular member C, leaving or giving rise to the exterior ridges F. Another method of forming the ridges E and F is to alternately indent portions of the tubular member inwardly and outwardly to provide in effect a corrugated tube. Preferably the depth of these ridges is approximately equal to the thickness of the metal, so that a screw thread having a depth somewhat less than the thickness of the metal may be cut in each of the series of ridges without interfering one with the other. Such screw threads may or may not be of the same pitch, and preferably said threads are of different pitch for the reason that the internal thread of the nut is designed to engage over a No. 777 tire valve casing, as indicated at G, and the exterior thread adapted to receive a dust cap H having an internal thread adapted to engage over a No. 725 tire valve casing, which is of somewhat larger diameter than the No. 777. Hence, one function of the rim nut herein described is to render a standard dust cap, which is normally adapted to fit over a No. 725 valve

casing, applicable to the No. 777 valve casing.

The rim nut, for the purpose of economy, is made of the thinnest metal which is capable of withstanding the strains incident to its use, and according to the present invention, I have found that metal of a gauge only slightly in excess of the depth of either of the threads cut therein, when the tubular extension of the nut is formed as hereinbefore described, stands up admirably well in use. By making use of such thin metal a very considerable saving is accomplished in the cost of such nuts because of the great saving in the metal required and the greater ease in working thinner metal.

The lateral flange D serves to provide an engaging surface for the nut when screwed down upon the valve stem into engagement with a wheel rim or felly. Because of its large area, it is adapted to provide a strong frictional engagement between the nut and the wheel rim or felly, and thus tend to prevent the unscrewing or working loose of the rim nut on the valve stem. To further increase this frictional engagement, the underside of the flange is formed with a raised or projecting annular rib J, which is preferably formed adjacent the circumferential edge of the flange by depressing the top of said flange to provide an annular groove K.

While I have shown and described a preferred embodiment of my invention, it is to be understood that I do not wish to be limited to the precise structure disclosed, as changes therein may be made without departing from the spirit of the invention.

What I claim is:

1. A sheet metal rim nut for tire valves or the like, having a tubular extension, portions of which are indented to provide internal projections, the indented portions being screw-threaded on their interior faces and the exterior of the extension being threaded on its exterior surface.

2. A sheet metal rim nut for tire valves or the like, having a tubular extension which is alternately indented inwardly and outwardly to provide parallel ridges, said ridges being screw-threaded to provide internal and external threads on the tubular extension.

3. A sheet metal rim nut having a tubular extension which is alternately indented inwardly and outwardly to form parallel ridges of a depth approximately equal to the thickness of the metal, said ridges having screw threads cut therein to a depth slightly less than the thickness of the metal to provide internal and external threads on the tubular extension.

4. A sheet metal rim nut having a tubular extension which is fluted or corrugated to provide alternate ridges on opposite sides of the extension, said ridges being screw-threaded to provide internal and external threads on the tubular extension, and said flutes or corrugations extending transversely to the inclination of the screw threads thereon.

5. A sheet metal rim nut having a body portion provided with wrench engaging surfaces and a tubular extension which is fluted or corrugated to provide alternate ridges on opposite sides of the extension, said ridges being screw-threaded to provide internal and external threads on the tubular extension.

In witness whereof, I have hereunto signed my name.

CHARLES NOLL.