Sept. 24, 1929. T. G. RENNERFELT 1,729,013

SELF LOCKING NUT

Filed Nov. 10, 1928

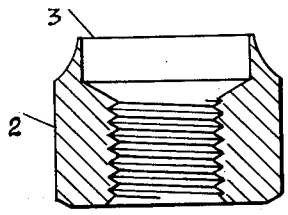


Fig. 1

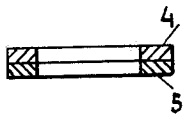


Fig. 3

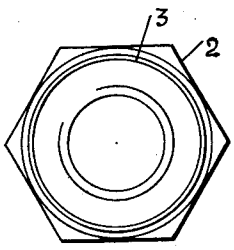


Fig. 2

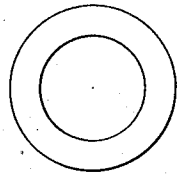


Fig. 4

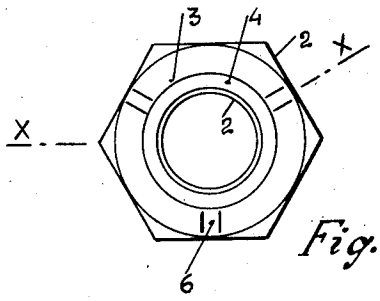


Fig. 5

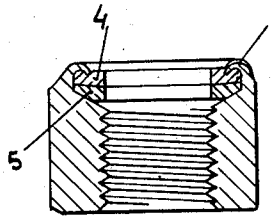


Fig. 6

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INVENTOR

Patented Sept. 24, 1929 1,729,013

UNITED STATES PATENT OFFICE

TURE GUSTAF RENNERFELT, OF STOCKHOLM, SWEDEN

SELF-LOCKING NUT

Application filed November 10, 1928. Serial No. 318,421.

My invention relates to improvements in self-locking nuts of the type referred to in my Patent 1,550,282, granted August 18, 1925, and referred to also in my pending application Serial No. 169,955. This type of nut comprises a threaded metallic body arranged to act as a nut for a screw, and a nonmetallic elastic cushion, formed with a hole smaller than the diameter of the screw, retained within the body. The object of my invention is to provide improved means for retaining and securing the cushion within the body, and further to accomplish a locknut suitable and reliable for its purpose, of neat appearance, and cheap manufacture.

My invention is illustrated in the accompanying drawing in which Fig. 1 shows a vertical section of the threaded body before the cushion is inserted, Fig. 2 is a plan view of the body as seen from above, Fig. 3 shows a section of the cushion used for the nut, Fig. 4 is a plan view of the cushion, Fig. 5 is a plan view of the nut complete, Fig. 6 shows a vertical section of the complete nut, the section being taken on the broken line X—X of Fig. 5.

In the drawing 2 denotes the metallic body, threaded at one end, formed with a cavity of partly cylindrical, partly conical shape, and provided also with a cylindrical edge 3. The cushion consists in a washer of nonmetallic material and of somewhat smaller diameter than the diameter of the cavity. The hole in the washer is smaller than the diameter of the screw. In some cases the cushion may consist of a plurality of washers, 4 and 5 in Fig. 3. The cushion is inserted into the cavity of the body so that it rests upon the conical bottom of the cavity. By means of a strong press the edge 3 is bent over the cushion, so that it becomes firmly impressed into the face of the cushion as shown in Fig. 6. The cushion becomes compressed at its outer edge so that it will be thicker at its centre than at its circumference. If the cushion consists of two washers, as 4 and 5 in Fig. 3, both of them will become deformed by the pressure from the edge 3, so that their cross sections will not remain rectangular, and the cross section of one washer will be shaped differently from the other one, as shown in Fig. 6. In some cases the edge may be wave shaped, as shown by the depression 6 in Fig. 6, so that different parts of the edge become imbedded to different depths in the cushion.

By the above described means the cushion will be securely retained, so that it cannot turn relatively to the body. When the screw is forced by the threads of the body into the cushion it will impress therein a thread which fits tightly on the screw. The cushion will exert a strong pressure on the screw not only radially but also in axial direction, so that pressure exists between the upper flank of the thread in the body and the lower flank of the thread of the screw. The preferred material of the cushion is hard vulcanized fibre in the form of sheets; the cushion is to be inserted in dry condition into the cavity.

Having thus described my invention, what I claim is:

1. The combination of a metallic body formed at one end with threads and at its other end with a cavity of partly conical shape, and arranged to be threaded onto a screw, a nonmetallic cushion formed with a hole of smaller diameter than the screw placed into the cavity, and means for pressing the cushion against the conical bottom of the cavity, the threads arranged to force the screw into the hole so as to impress a thread into the cushion.

2. The combination of a metallic body formed at one end with threads and at its other end with a partly conical cavity, and arranged to be threaded onto a screw, a nonmetallic cushion, thicker at its centre than at its circumference and formed with a hole of smaller diameter than the screw placed within the cavity, and means for pressing the cushion against the conical bottom of the cavity, the threads arranged to force the screw into the hole so as to impress a thread into the cushion.

3. The combination of a metallic body formed at one end with threads and at its other end with a partly conical cavity and arranged to be threaded onto a screw, a

round washer having a hole of smaller diameter than the screw placed within the cavity, and means for pressing the edge of the washer against the conical bottom of the cavity, the threads arranged to force the screw into the hole so as to impress a thread into the washer.

Signed at Stockholm, in the Kingdom of Sweden, this 25th day of October A. D. 1928.

TURE GUSTAF RENNERFELT.