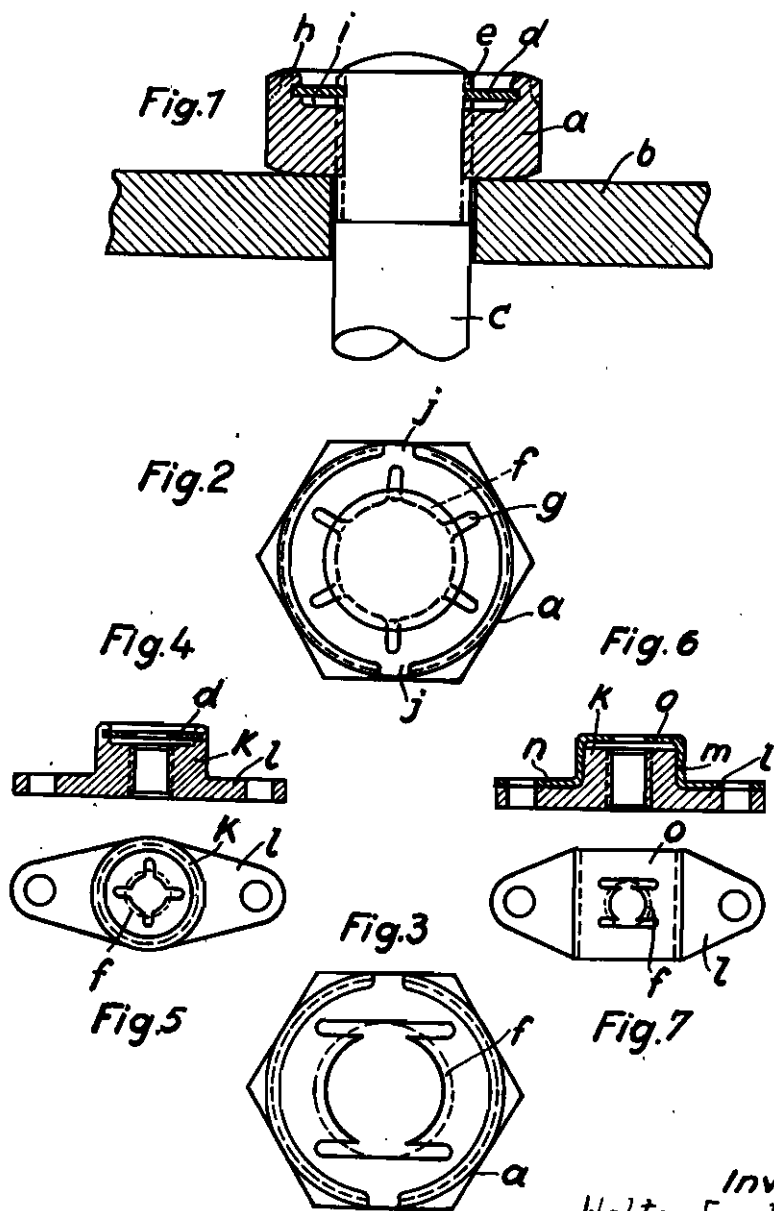


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LOCK-NUTS
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ALIEN PROPERTY CUSTODIAN

LOCK-NUTS

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This invention relates to lock-nuts, and more particularly to nuts of this kind which according to given conditions will either lock the nut on the screw-bolt appertaining thereto or, as the case may be, the screw-bolt on the nut against unintentional rotation. Lock-nuts as such are known in various forms of construction. The lock-nut forming part of my present invention is distinguished by especial reliability and efficacy and, in addition to this, by the feature that it may advantageously be used in either aforementioned condition. Furthermore, lock-nuts constructed in accordance with my invention are of extreme simplicity permitting manufacture in great quantities.

According to my invention there is used as locking element proper a disk which is mounted in or on the nut in a manner preventing rotation and axial displacement by means of tongues which in assembled condition of the nut and screw-bolt will resiliently engage with the threads of the latter. Accordingly, the said disk is firmly united with said nut. The locking effect in particular will be brought about by a certain twist imparted to said tongues due to the inclination or pitch of the thread, causing said tongues to exert a braking action on the flanks of the thread, said braking action being sufficient to effect the locking of the nut on the screw-bolt or the locking of the latter on the former.

Owing to the fact that said disk is mounted in the nut in the aforementioned manner, said disk will be prevented against falling out of the nut. Accordingly, the latter may be handled in the usual manner without using any auxiliaries, such as tools, and without loosing any parts.

The aforementioned braking action may further be increased by properly dimensioning said tongues in such a manner, that they will adjust themselves obliquely with respect to the longitudinal axis of the screw-bolt, when uniting the nut with the bolt, thus bracing the latter against the former.

The resilient tongues forming part of the nut constructed according to my present invention are preferably formed integrally with said disk and may be used in any desired number depending upon the individual conditions, such as for instance upon the diameter to be given to the screw-bolt.

My present invention may also be applied to nuts that are riveted to some support, a locking of the screw-bolt on the nut being effected in such case. The disk used in accordance with my invention may either be mounted in a nut of

the last-mentioned kind in like manner as in an ordinary nut, or also be of U-shaped conformation to cover the upper face of the riveted nut and fastened in any desired manner to the flanges on the latter.

In the accompanying drawing which forms part of this specification I have represented four examples of locknuts constructed in accordance with my invention, Fig. 1 being a section through one form of construction of the new lock-nut, Fig. 2 a top-view on Fig. 1, Fig. 3 a top-view, similar to Fig. 2, of a second form of construction of a lock-nut, Fig. 4 a section through a lock-nut of the kind of a riveted nut, Fig. 5 a top-view on Fig. 4, Fig. 6 a section through a second form of construction of a riveted nut, and Fig. 7 a top-view on Fig. 6.

Referring more particularly to the drawing, the construction according to Figs. 1 and 2 serves to lock a nut *a* resting on a support *b* against rotation with respect to the screw-bolt *c*. For this purpose, according to this invention a disk *d* is mounted within the upper part of the nut *a*, said disk being provided with a plurality of tongues *f* arranged in star-shaped manner and projecting towards the thread *e* of the screw-bolt *c*. The tongues *f* are cut out of the material of the disk *d* by forming proper incisions on the disk between said tongues.

The disk *d* is secured against displacement in direction of the longitudinal axis of the screw-bolt *c* by mounting it fixedly in the rim *h* of a cup-shaped recess *i* provided in the nut *a*. This may for instance be done by inwardly beading the rim *h* of the nut. The disk *d* is furthermore secured against rotation within the nut by means of the projections *f* entering into interstices in the rim *h* of the nut *a*. The disk *d* will thus positively participate in the rotation of the nut *a* and form a unitary construction with the latter. In order to facilitate the inward beading of the rim *h*, the nut *a* may be of reduced outer diameter at said rim, as indicated in dotted lines in Fig. 1. In this manner the rim *h* will be of the conformation of a collar.

When screwing the nut *a* onto the thread *e* of the screw-bolt *c*, the tongues *f* will engage said thread and thereby be deformed or twisted to some extent, with the result that said tongues exert a braking action onto the thread *e* of the screw-bolt *c* causing the nut to be locked against rotation on said thread. On the other hand, it is well possible to disengage the nut *a* from the screw-bolt *c* with the aid of the usual tools.

The said braking action may eventually fur-

ther be assisted by a bracing action which may be attained by properly dimensioning said tongues f to augment their obliquity.

The number of tongues f to be used on the disk d depends upon the conditions at a time prevailing. Eventually it may be sufficient to provide only two tongues, f , if the latter are given a greater engaging surface with respect to the thread of the screw-bolt c .

The present invention may be applied with especial advantage to riveted nuts resulting in great simplicity of construction, as may, for instances, be seen from Figs. 4 to 7.

According to Figs. 4 and 5 there is again used a disk d which is fixedly mounted within the body k of a riveted nut provided in the usual manner with flanges l . Said disk may, for instance, be provided with four tongues f , as shown in Fig. 5. On screwing the bolt home, there will be a locking effect between nut and bolt, this locking effect preventing unintended unscrewing of the latter from the former.

According to Figs. 6 and 7 the disk is mounted exteriorly of the body of the nut instead of interiorly, as is the case in the constructions rep-

resented in the former figures. According to Figs. 6 and 7 more particularly, said disk is of U-shaped conformation and consists of a cup-shaped member m with adjoining flanges n serving to engage said member m with the flanges l of the riveted nut. This engaging action may be brought about as early as during riveting the nut to its support. However, in order to preserve a unitary construction of the nut, said cup-shaped member m may also be preliminarily united with the body of the nut by using paste or the like.

In order to provide in this case a still further locking action preventing rotation of said cup-shaped member m with respect to the body k of the nut and in order to increase the rigidity between said member and the nut, the body k of the nut is preferably given non-circular form, for instance by providing corners thereon, while said member m is of similar conformation. Locking of the screw-bolt within the nut is effected in this case by the upper part o of the cup-shaped member m which for this purpose is provided with tongues f as shown in Fig. 7.

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