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THREADLESS NUT OR COLLAR.

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1,114,123.

Patented Oct. 20, 1914.

Fig. 1.

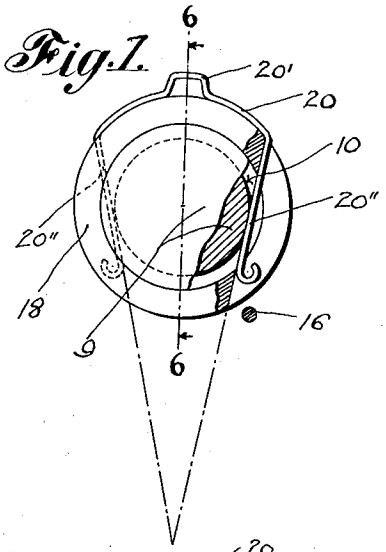


Fig. 3.

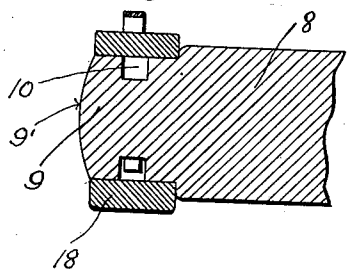
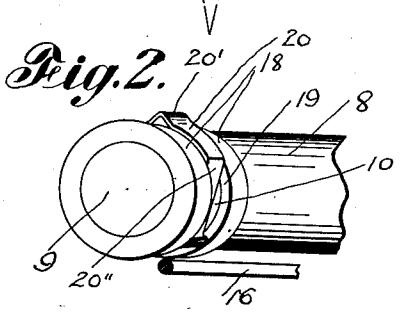


Fig. 2.



WITNESSES:

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THREADLESS NUT OR COLLAR.

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To all whom it may concern:

Be it known that I, HUBERT DALTON, a citizen of the United States of America, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Threadless Nuts or Collars, of which the following is a specification.

This invention relates broadly to improvements in temporary fastening devices, and more particularly aims to provide improved means for quickly detachable adjustment upon a coöperant support to the end that the said means when so adjusted may act as a stop or retaining member in a variety of situations.

The present invention is particularly valuable in providing an instrumentality for association with a revoluble shaft, or with a fixed shaft upon either of which is suitably mounted a revoluble member as a gear or pulley, to the end that when so associated said instrumentality may prevent a displacement of said revoluble member longitudinally of its shaft.

A cardinal object of the invention is to provide an embodiment thereof which will be cheap and simple in construction, having few parts and those few parts simple and easily formed; and which will be convenient of mounting and demounting, and reliable, efficient and safe in performance.

An important object of the invention is to disclose an embodiment which when mounted upon said shaft or the like will not be keyed thereon, but which, on the other hand, even while performing its appointed duties with absolute positiveness, will not be carried for revolution by said shaft and will remain immovable during the turning movements of the latter. This is an end which has been a heretofore existing desideratum, on account of the fact that the retaining nuts or the like in the past employed in connection with high-speed machinery have carried projecting parts or conformations; these conformations, due to the simultaneous rotation of each such nut and its support, having constituted an always present source of danger to any person in the vicinity.

Other objects and aims of the invention, more or less broad than those stated above, together with the advantages inherent, will be in part obvious and in part specifically referred to in the course of the following description of the elements, combinations, arrangements of parts, and applications of principles constituting the invention.

Referring now to the accompanying drawing, which is to be taken as a part of this specification, and wherein is shown a possible embodiment of this invention as at present preferred, Figure 1 is an end elevation, partially broken away, of said embodiment, looking toward the terminus of the shaft upon which the retaining member is mounted; Fig. 2 is a perspective view of the parts shown in full-lines in Fig. 1; and Fig. 3 is a vertical sectional view, taken on the line 6—6 of Fig. 1.

Similar reference characters refer to similar parts throughout the several views of the drawing.

I will now describe with particularity the device of the drawing, reserving it to the claims to define the scope of the invention, it being understood that these claims will be given due range of equivalents.

Referring now particularly to Figs. 1, 2 and 3, the reference numeral 8 may represent in the present instance a revoluble driving shaft, adapted to have detachably adjusted thereon, for revolution therewith, a suitable pulley or the like. The main body of the shaft here merges into a reduced integral end-portion 9. End-portion 9 is provided exteriorly with an annular groove 10. This end-portion preferably carries a spherical end-face 9′. A member 18, which may be termed a threadless nut, is adapted to be sleeved upon end-portion 9 as shown. Nut 18 carries exteriorly a plurality of straight slots 19 the bottom walls of which if prolonged as indicated in dot-and-dash lines in Fig. 1 would preferably converge. The slots 19 are so cut as to break into the bore of the nut 18, and consequently when nut 18 is properly positioned on end-portion 9 to afford a plurality of openings communicating with the interior of the groove 10. A leaf-spring 20 generally U-shaped as shown, and which carries a crimp or upstanding portion

20′ and whose legs 20″ are resiliently held to convergence as shown, serves to lock the nut 18 upon the end-portion 9 in a well understandable manner. A stop-pin 16 may be associated with said nut 18 as shown in Fig. 2, at the proper time to arrest further movement of the crimp 20′.

Having described this embodiment of the invention, the operation thereof may now be understood.

It will of course be appreciated that the present invention will be of great value, for instance, when associated with a lathe or the like when the shaft 8 is adapted to carry one of an interchangeable plurality of gears or pulleys; and the same remarks may as well apply to any other embodiment of the invention. Assuming that a pulley or the like is selected for temporary drive upon and by the shaft 8, and assuming further that the nut 18 and its leaf-spring 20 is preliminarily removed from the end-portion 9 of the shaft, the aforesaid pulley or the like is suitably positioned upon the shaft and thereupon the nut 18 is adjusted into its locked engagement with said shaft preferably by, first, advancing the nut longitudinally of the end-portion 9 and toward the main body of the shaft, and, next, by mounting the leaf-spring 20 as shown in Fig. 1. Upon a drive being imparted to the shaft 8, the aforesaid pulley, of course, being driven with it, the nut 18, while effective to prevent a longitudinal displacement of the pulley upon its shaft, is not necessarily rotated with said shaft, since as shown the legs 20″ of leaf-spring 20 are preferably in slight frictional contact with the bottom of the slot 10. Should an accidental drag be imparted to said nut, however, the crimp 20′ will come into abutment with stop-pin 16 and prevent any further turning movement of the nut; thus preventing injury to any operator or operators coming into proximity to the turning parts.

It will thus be seen that there has been provided an embodiment of this invention well adapted to attain the various ends, objects and advantages set forth and apparent hereinabove; an embodiment which, moreover, possesses marked superiority in the matters of reliability, efficiency, simplicity and cheapness of construction, and safety.

Inasmuch as many changes could be made in the above construction, and many apparently widely different embodiments of my invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense. It is also to be understood that the language used in the following claims is intended to cover all the generic and specific features of the invention herein described and all statements of the scope of the invention which, as a matter of language, might be said to fall therebetween.

I claim:—

1. In a device of the class described, a shaft having formed in the cylindrical surface thereof an annular groove, a cylindrical nut mountable upon said shaft to overlie said groove, said nut having a plurality of channels cut in its outer cylindrical surface, one of said channels having a straight bottom and being so deep that it cuts through and opens into the bore of the nut, both of said channels being non-parallel and cut in a common plane normal to the axis of the bore of the nut, and a single resilient generally U-shaped bent-wire locking member so conformed that portions thereof are readily insertible in said channels so that by virtue of the resiliency of said member and the non-parallelism of said channels said member when thus inserted in said channels is prevented from accidental disengagement from the nut, the portion of said member which lies in the bore-intersecting channel being adpated to enter the shaft's annular groove when the said bore-intersecting channel overlies any portion of said annular groove, said locking member carrying a portion which projects from the outer cylindrical surface of the nut and which is manipulable to displace from its normal engagement with said annular groove the portion of said member which lies in the said bore-intersecting channel so that said nut may be readily demounted from or mounted upon said shaft.

2. In a device of the class described, a shaft having formed in the cylindrical surface thereof an annular groove, a cylindrical nut mountable upon said shaft to overlie said groove, said nut having a plurality of channels cut in its outer cylindrical surface, one of said channels having a straight bottom and being so deep that it cuts through and opens into the bore of the nut, both of said channels being non-parallel and cut in a common plane normal to the axis of the bore of the nut, and a single resilient generally U-shaped bent-wire locking member so conformed that the legs of the U converge more and more as they leave the bow of the U, said legs being readily insertible in said channels so that by virtue of the resiliency of said member and the non-parallelism of the said channels said legs when thus inserted in said channels are prevented from accidental disengagement from the nut, the leg which lies in the bore-intersecting channel being adapted to enter the shaft's annular groove when the said bore-intersecting channel overlies any portion of said annular groove, the bow of said locking member carrying a portion which projects from the

outer cylindrical surface of the nut and which is manipulable to displace from its normal engagement with said annular groove the leg which lies in the said bore-intersecting channel so that said nut may be readily demounted from or mounted upon said shaft.

In witness whereof I have hereunto signed my name in the presence of two witnesses.

HUBERT DALTON.

In the presence of—
MARY H. LEWIS,
ALDA L. MILLER.