C. E. ASHLEY.

LOCKING SOCKET.

APPLICATION FILED JUNE 1, 1920

1,379,607.

Patented May 31, 1921.

Fig. 1.

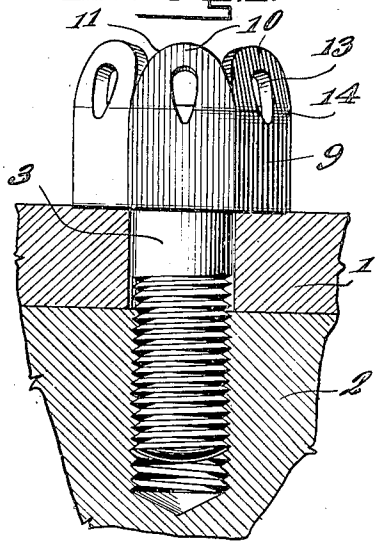


Fig. 2.

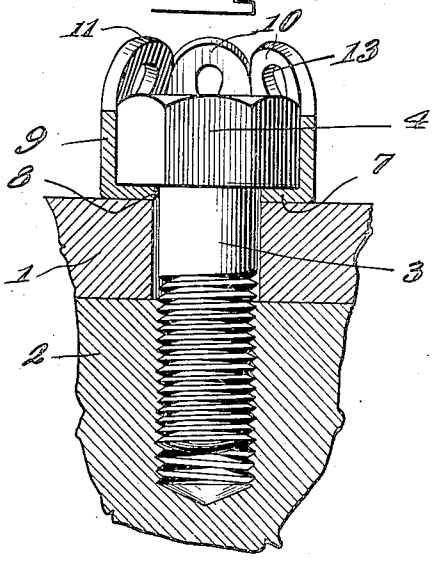


Fig. 3.

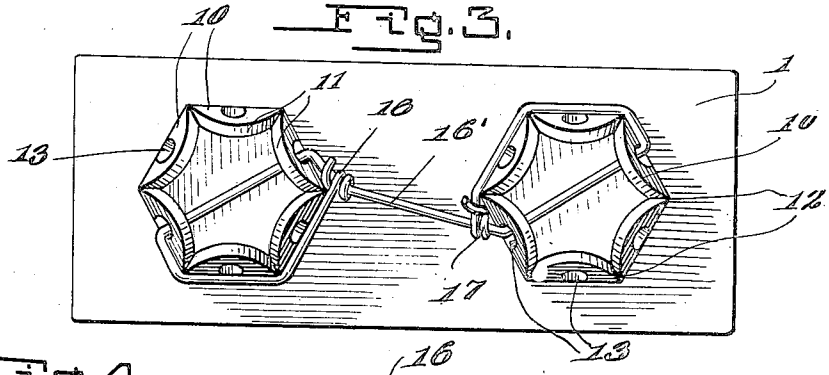


Fig. 4.

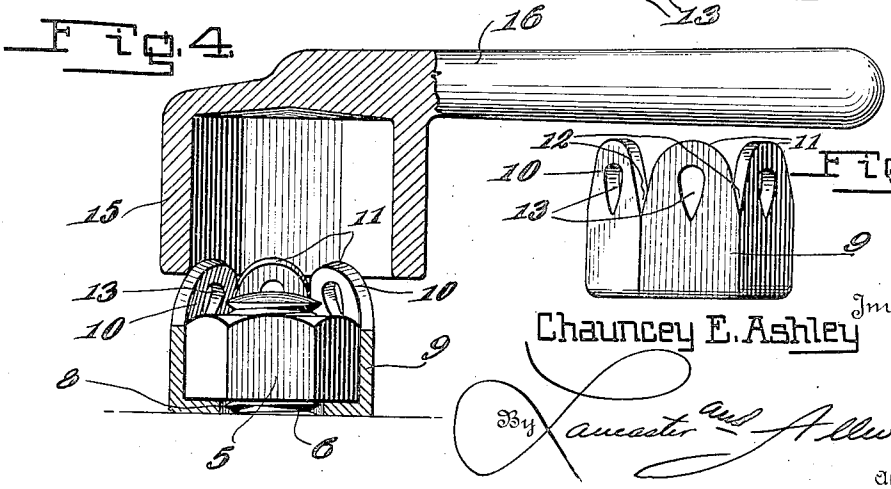


Fig. 5.

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LOCKING-SOCKET.

1,379,607. Specification of Letters Patent. Patented May 31, 1921.

Application filed June 1, 1920. Serial No. 385,819.

To all whom it may concern:

Be it known that I, CHAUNCEY E. ASHLEY, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Locking-Sockets, of which the following is a specification.

The present invention relates to locking sockets and consists in certain improvements over the invention shown in my similarly entitled co-pending application Serial No. 347,394, filed December 26, 1919.

An object of the present invention in common with that of the co-pending application above referred to is to provide a means for effectually locking bolts, nuts, or the like against rotation, especially on automobiles and in other places where the bolts or nuts are subjected to vibration that is apt to loosen the same and permit the loss of parts fastened by them.

A further object of the present invention is to provide an improved locking socket in which elongated ears or tabs are provided in conjunction with the side walls of the socket and which extend to an appreciable distance beyond the bolt head or nut as the case may be, and which are of such a character as to admit of their being crimped or bent to some extent toward their common axis in such a way that they avoid longitudinal movement of the bolt or nut, and also act to guide the socket of a wrench thereon.

The invention further consists in providing in combination with the projecting ears or tabs elongated slits between the same to facilitate the bending thereof, and enlarged and elongated openings directly in the tabs or ears for receiving the binding wire and further in reducing the amount of metal and in making the ears or tabs more easily bendable and capable of being compressed in an edgewise direction.

Other objects and advantages of the invention will appear in the following detailed description taken in connection with the accompanying drawings forming a part of this specification, and in which drawings—

Figure 1 is a view partly in elevation and partly in section showing a tap bolt equipped with a locking socket formed according to my invention, the socket being shown in elevation.

Fig. 2 is a similar view, the socket being shown in section.

Fig. 3 is a plan view showing a plurality of bolts locked against rotation by use of locking sockets formed according to my invention.

Fig. 4 is a fragmentary view of a bolt having a nut threaded thereon to which one of the improved sockets is applied, the socket being in section and there being also shown a wrench, partly in elevation and partly in section just prior to its engagement with the socket, and

Fig. 5 is a view in elevation of one of the improved sockets in the condition prior to its application to a bolt head, nut, or the like.

In the drawings, where similar characters refer to similar parts throughout the several views, 1 designates a cylinder head and 2 a cylinder block secured together by tap bolts 3 having polygonal heads 4. In Fig. 4 a nut 5 is shown as run on the screw-threaded portion 6 of a bolt. The improved locking socket is the same both for the bolt heads 4 and the nuts 5, and while these elements are shown as hexagonal, it will be understood that this is merely for convenience in illustration, and is in no wise restrictive of the application of the invention.

The improved socket comprises a base 7 provided with a central perforation 8 adapted to fit the bolt and having formed preferably in one piece therewith the side walls 9 which extend at substantially right angles to the base 7, and are formed straight-sided in order to conform snugly to the faces of the bolt head or nut. In the illustration, the side walls 9 are made six-sided in order to agree with the hexagonal character of the bolt head and nut. It is obvious that when the bolt head or nut is made octagonal, the socket walls 9 will be provided with eight sides to correspond.

In accordance with the present invention, the side walls 9 are each provided with elongated tabs or ears 10 made with reference to the bolt head or nut in such a way that they will project to a considerable distance beyond the plane of the outer faces thereof. The outer edges of the tabs or ears 10 are rounded as at 11 in order to allow them to approach each other as shown in Figs. 1 and 2 and for this purpose they are further divided or separated by deep slits 12 which enter the outer portions of the walls 9.

The tabs or ears are also provided with elongated openings 13 preferably entering the outer portions of the walls 9 and being reduced at this point. As indicated in Fig. 1 the tabs or ears are adapted to be bent over or crimped on lines of flexure 14 which pass through the lower portions of the openings 13 and lie substantially at the innermost parts of the slits 12.

The bending of the tabs or lugs may be accomplished in any suitable manner as by hammering, et cetera, but it will be found preferable to employ a socket tool having an interior bevel which may be forced over the tabs or ears when they are in the condition shown in Fig. 5, which is the condition of the locking socket prior to its placement upon a bolt head or nut.

After the tabs or ears have been bent over in the manner indicated in Figs. 1 and 2 the same present curved edges to the socket 15 of a wrench 16 and facilitate the application of the wrench socket, as indicated in Fig. 4. The socket 15 may be applied in an eccentric manner to the nut 5 and its locking socket, the curved walls of the tabs or ears acting to guide the socket over the nut and locking socket and to center the same thereon.

Referring to Fig. 3 the locking sockets are particularly of advantage where bolts are grouped in pairs or in greater numbers, and in such cases a binding wire 16′ is adapted to be passed through certain of the slots or openings 13 in the adjacent sockets and to be passed about other of the tabs or ears and to finally have its ends 17 and 18 wound about the intermediate portion of the binding wire or strand 16′. This binding is accomplished in substantially the same manner as described in the prior application above referred to.

It is obvious that various changes and modifications might be made provided the same are within the spirit of the invention and the scope of the appended claims.

What is claimed is:

1. In combination with a polygonal head, of a locking socket adapted to fit about the head and having ears extending beyond such head and arranged in converging relation whereby to fix the socket to the head and to further act as a guide for a wrench or the like tool.

2. A locking socket provided with a body portion adapted to fit about the head of an element to be secured against rotation, said body portion being provided with ears extending in convergent relation beyond the portion of the element with which the socket is engaged whereby such ears may act to hold the locking socket on the element and to furthermore present inclined outer faces to a wrench or other tool.

3. In combination with a bolt having a polygonal head, of a locking socket formed with a base perforated to receive the shank of the bolt and adapted to lie against the inner face of the head thereof, side walls extending from said base and adapted to fit against the side faces of the bolt head, and ears extending from said side walls beyond the head at its outer face and extending in convergent relation whereby to bind the locking socket on the head and present inclined outer faces on the ears to a wrench.

4. In combination with a rotatable element to be secured against rotation and having flat faces, of a locking socket provided with a base engaging the inner face of said element, side walls disposed at substantially right angles to the base and being flat to agree with the faces of said element, and tabs or ears having elongated slits therein extending outwardly from said flat side walls being separated by deep slits and provided with rounded corners whereby they may be bent over on lines of flexure passing through the inner ends of the slits to the inner portions of the slots.

CHAUNCEY E. ASHLEY.