Sept. 11, 1928. 1,684,215

H. W. CONNELL

NUT

Filed March 18, 1925

Fig. 1

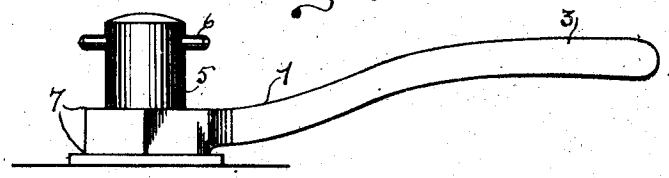


Fig. 2

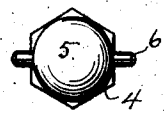


Fig. 3

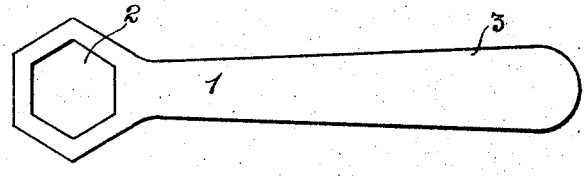


Fig. 4

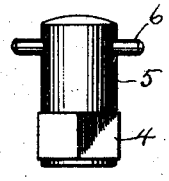
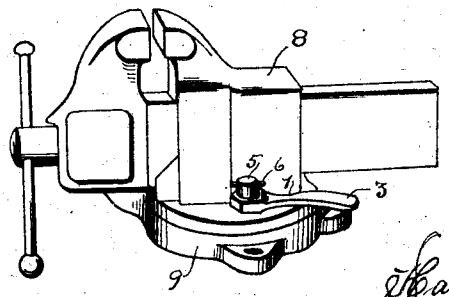


Fig. 5



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UNITED STATES PATENT OFFICE.

HARRY W. CONNELL, OF BALDWINSVILLE, NEW YORK.

NUT.

Application filed March 18, 1925. Serial No. 16,312.

The device, the subject of this invention is a nut having a wrench retaining means.

I have found that nuts arranged upon bolts or studs that require to be released and secured quite often or at stated intervals have, in the past, been provided with serrated heads or with projecting pins. If pins are used, it is necessary that the nut be of a large size, to provide sufficient body and strength for the pin. If serrated heads are used or wings, only a limited holding tension can be applied, owing to the short leverage.

If the nuts are arranged closely adjacent to a bar or support or an immovable part of the mechanism, serrated heads or wings cannot, in many instances, be employed, nor would a large headed nut, through which a loose pin is passed, be possible.

To use a separated wrench, such as an open-ended wrench or a monkey wrench, would require such additional operations and loss of time, as to make their use inexpedient and it is to overcome the inconveniences inherent in the known devices, that I have invented the associated nut and wrench, the subject of this invention.

The following is what I consider the best means of carrying out this invention and the accompanying drawing should be referred to for a complete understanding of the specification which follows.

In the drawing:—

Fig. 1, is a view in elevation of my nut and wrench;

Fig. 2, is a plan view of the nut;

Fig. 3, is a plan view of the wrench;

Fig. 4, is a view in elevation of the nut alone; and

Fig. 5, shows a mechanism, with my device in operative relation thereto.

Similar reference numerals indicate like parts in all the figures where they appear.

At 1, I show a wrench, commonly termed a side or box wrench, in which the nut receiving portion of the wrench, as shown at 2, is entirely closed.

The wrench here shown is adapted to operate with a hexagonal nut and the projecting handle 3, which is curved, as shown in Fig. 1, to elevate it over the plane of operation of the nut, may be of any desired length. Obviously the weight and thickness of material from which the wrench is made, will be determined by the work, which it is called upon to perform.

The nut, with which my wrench operates, is provided with a hexagonal portion 4, upon which the wrench normally engages to rotate the nut and a cap or cylindrical portion 5, formed integral with the hexagonal part 4, extends upwardly from the hexagonal portion. The end of a bolt is received into the hexagonal portion and extends into the cap, terminating at a point somewhere below the pin 6, which extends quite through the cap 5 and to a distance at each side of the cap and I call particular attention to the fact that the distance or space between the upper edge of the hexagonal portion 4 and the pin 6, is somewhat greater than the thickness of the hexagonal portion of the wrench, that portion included between the lead lines, extending from the reference character 7.

The hexagonal portion of the nut is introduced into the wrench, before the nut is engaged upon the bolt with which it is to operate and may be turned upon the bolt by means of the wrench. When the wrench reaches an abutment and cannot further be turned, the wrench is lifted from the hexagonal portion 4 and may be rotated backward in the space between the pin 6 and the hexagonal portion 4 and thereafter the wrench being again engaged upon the hexagonal portion of the nut, the nut can be further turned. This same operation will be repeated and in either direction, depending upon whether the nut is to be tightened or loosened upon its bolt. When the pin is in place the wrench can only be placed upon or removed from the nut over the hexagonal part thereof, so to remove the wrench it is necessary to remove the nut from the bolt.

In Fig. 5, I show a mechanism with which my device will operate with greater efficiency. Indeed, it is for use with just such a mechanism that my device was designed.

The device shown at 8 in Fig. 5, is what is commonly termed a rotatable vise, but as this mechanism in no way forms a part of my invention and serves only to demonstrate a possible operation of my device, it is admitted that the vise is not shown in complete detail, it being thought sufficient to state that the vise proper rotates upon its hexagonal plate 9 and my device, co-operating with a bolt, not shown, being employed to retain the vise in adjusted position.

It will be understood that my device may be made larger or smaller, for other pur-

poses and uses and that its general shape may be varied at will and that other modifications may be made within the scope of the appended claims without departing from the principle or sacrificing the advantages of the invention.

Having carefully and fully described my invention, what I claim and desire to obtain is:—

1. A nut having a wrench engaging portion and an extension formed integral therewith and at the outer end thereof and upon which a wrench may freely rotate and a pin passing through said extension to prevent the removal of the wrench over said extension.

2. A nut having a wrench engaging portion and a cylindrical portion formed integral, said cylindrical portion being of a diameter less than that of the nut and a pin passing through said cylindrical portion and extending at both sides thereof.

Signed at the town of Baldwinsville, county of Onondaga, State of New York, this 5th day of March, 1925.

HARRY W. CONNELL.