J. E. MARBLE.

NUT AND BOLT HOLDING DEVICE.

APPLICATION FILED DEC. 20, 1915. RENEWED JAN. 12, 1918.

1,261,146. Patented Apr. 2, 1918.

Fig 1.

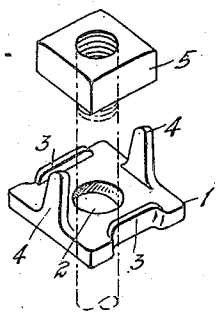


Fig 2.

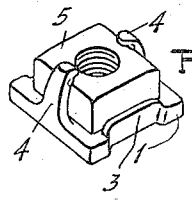


Fig 3.

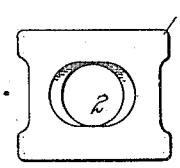


Fig 4.

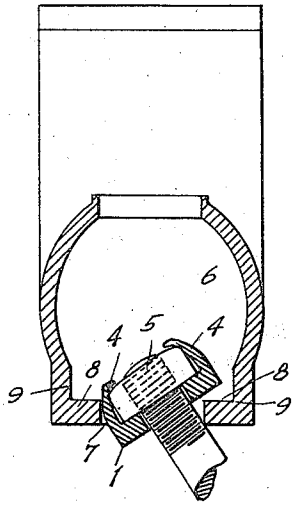
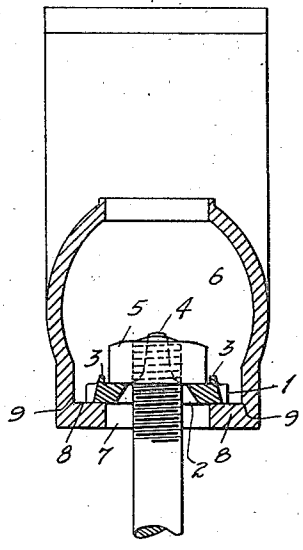


Fig 5.



Witnesses

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UNITED STATES PATENT OFFICE.

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NUT AND BOLT HOLDING DEVICE.

1,261,146. Specification of Letters Patent. Patented Apr. 2, 1918.

Application filed December 20, 1915, Serial No. 67,897. Renewed January 12, 1918. Serial No. 211,672.

To all whom it may concern:

Be it known that I, JAMES E. MARBLE, a citizen of the United States of America, and a resident of Elizabeth, county of Union, and State of New Jersey, have invented certain new and useful Improvements in Nut and Bolt Holding Devices, of which the following is a specification.

My invention relates to improvements in nut and bolt-holding devices, particularly devices for holding nuts and bolts within concrete inserts and the like.

Of the various so-called "concrete inserts" now on the market there are a larger number consisting of a box or socket-member having an opening in its bottom through which the bolt may be inserted, this box or socket member being intended to be embedded in concrete floors with its bottom flush with the lower or ceiling surface of such floors; and many of these inserts are so designed as to permit some adjustment of the position of the bolt within the insert.

In some cases, the bolt-nut, or the bolt-head, is intended to rest directly upon shoulders formed in the insert, on opposite sides of the bottom opening of that insert; these shoulders, and the opening, being made of such length as to permit some shifting in position of the bolt; however, in general, it is preferable to have the bolt-head or the bolt-nut located within or on a carrier forming a bridge piece extending across the bottom opening of the insert, this bridge piece being provided with means, engaging the bolt-head or nut, to prevent rotation of the latter, the bridge piece being itself movable along the shoulders of the insert, mentioned, to permit of the desired adjustment of position of the bolt. My invention comprises an improved construction of such nut or bolt-head holder or bridge piece. My invention consists in means for holding the nut or bolt-head in the said holder or bridge piece.

Since, for present purposes, a bolt-nut is merely a bolt-head which is removable from the bolt, I will in most cases hereafter use the term bolt-head as inclusive of both a fixed or integral head, and of a head which is removable from the bolt, but is attached, or adapted to be attached, to the bolt, usually by means of screw threads.

The object of my invention is to improve the construction of bolt-head holding devices such as referred to, and to make the device extremely simple, capable of being easily applied to bolt-heads of various thicknesses, and capable of holding the bolt-head firmly against either rotation or removal, once the holding device has been applied to that head.

I will now proceed to describe my invention with reference to the accompanying drawings, and will then point out the novel features in claims.

Figure 1 shows a perspective elevation of a bolt-head-holding device embodying my invention, and shows in connection therewith a nut (removable bolt-head) such as the said holding device is adapted to hold, the bolt itself being indicated in dotted lines.

Fig. 2 shows a perspective elevation of the bolt-head-holder with the bolt-head in place therein and held thereto.

Fig. 3 shows a bottom view of the bolt-holder, and in particular illustrates the oval taper-sided bolt-aperture which is preferred.

Fig. 4 shows a vertical transverse section of a concrete insert and also shows a bolt having a nut or removable head thereon with my improved head holder applied thereto, the parts being shown with the bolt in process of insertion into the insert.

Fig. 5 is a view similar to Fig. 4, except that the bolt holder is shown in place, and turned at right angles to the position shown in Fig. 4.

My improved bolt-head holder comprises a member 1, the main portion of which constitutes a base in which is an aperture 2 for the passage of the bolt; said member 1 having, on two opposite sides, lugs 3 adapted to engage two sides of the bolt-head and prevent rotation thereof, and having, on two other sides, longer upwardly extending lugs 4 of such length that they may be bent over near their tops so as to engage and hold down the bolt-head 5, particularly as illustrated in Fig. 2. Commonly the device 1, having the lugs 3 and 4, is a malleable iron casting; though obviously it may be a drop forging or other struck up member; for example, a member struck up from sheet metal. It will be obvious, of course, that, if struck up from sheet metal, or if formed as a drop forging, the lugs 4 will be sufficiently flexible to permit them being bent over as indicated in Fig. 2; but I have found that malleable iron is also sufficiently flexible for the purpose.

The aperture 2 is preferably oval and

with flaring sides, as indicated particularly in Fig. 3, for, when using this head-holding device, in connection with a bolt having a fixed head to be engaged with such holding device, it is not necessary to bend over the lugs 4; such lugs 4 being, as a rule, bent over only when they are to engage a bolt-nut (*i. e.*, a removable bolt-head); hence it is desirable that the hole 2 permit considerable angularity of the holder with respect to the bolt when inserting bolt and holder into the insert.

Figs. 4 and 5 illustrate the use of the bolt-head holder in connection with a concrete insert; the particular concrete insert shown being of the type described in my Patent No. 1,145,385 dated July 6, 1915; though I do not limit my present invention to use in connection with that particular, or any particular, insert. The insert shown has a chamber 6 with a slot 7 at its bottom and shoulders 8—8 at the sides of such slot. The breadth of the bolt-head holder 1 is such, in one direction at least, that it may be inserted through the slot 7, even when such bolt holder is in place on a bolt. In some cases it will be desirable to give the bolt holding device a quarter turn after insertion into the insert; and this has been done in Fig. 5 as compared with Fig. 4. The dimensions of the holder 1 with reference to the sides 9—9 of the insert are such that, once that holder is in place as indicated in Fig. 5, it cannot rotate within the insert, unless lifted clear of shoulders 9; and the bolt head being held by that holder, the bolt head itself cannot rotate.

Of course a bolt with integral head, the head engaged by a holder 1 with the lugs 4 bent over or not, may be inserted in the same manner as indicated in Fig. 4, *i. e.*, inserted while in a tilted position. And of course, a nut with the holder attached to it, as in Fig. 2, may be inserted before the bolt is screwed into the nut, and then the bolt may be screwed into the nut subsequently; and in general, when a nut is to be inserted into the insert, that nut, with its holder, will be inserted before the bolt is screwed into it; this will be the case particularly when the nut is of greater width than the standard width of the head for the particular size of bolt to which the nut pertains, the nuts of bolts being, commonly, of greater width than the heads.

Owing to the flexibility of the lugs 4, a holder of one size may be used with nuts of various different sizes; for, obviously, the lugs 4 may be bent over to a greater or less extent, and need not be bent over at the top only, but may be inclined to engage the sides of a relatively small nut, and then bent over at the top to engage the top of the nut. This is a great practical advantage, because different bolt makers commonly have different sizes of nuts for the same size of bolt.

Furthermore, different bolt makers commonly have different thicknesses of nut and bolt head for the same size of bolt, and the holder 1 is obviously adapted for use with various different thicknesses of nuts and bolt heads.

Plumbers, steam-fitters and the like commonly have in their shops a great accumulation of nuts, resulting from the practice of bolt makers of selling their bolts, fitted with nuts, at the same price or substantially the same price at which the bolts without nuts are sold. For a particular job, the plumber or steam-fitter must often use a special nut other than that sold with the bolt, the nut sold with the bolt being therefore thrown aside; and for this, and other reasons, unused nuts accumulate in large quantities in the shops of plumbers, steam-fitters, etc., as above mentioned. Such nuts will be, in many cases, too small to be used by themselves, in inserts with which bolts of a size to take such nuts are to be used; but since the holder 1 may, and will ordinarily, have a much greater width than the nut, such nut, with the holder attached, may be used in inserts where the nut itself could not be used. My nut holder therefore constitutes a means which makes available the accumulation of waste nuts before referred to.

The flaring form of the aperture 2 in the holder greatly facilitates the insertion of a bolt into the nut carried by that holder, after the holder, with the nut attached, has been placed within the insert.

What I claim is:—

1. The combination with a chambered concrete insert having parallel side walls and a bottom adapted for the reception of a nut and bolt-head holder, and having in such bottom a slot, of a nut and bolt-head holder such as described comprising a one-piece base broader than such slot but adapted for insertion therethrough and of non-circular profile, the breadth and profile being such that said base will not rotate within the insert when in place therein, said base adapted to engage the bottom of a nut or bolt-head and apertured for the passage of the bolt and provided on opposite sides with integral uprising projections of a flexible nature, adapted to be bent over the top of such nut or bolt-head to hold the same in place.

2. The combination with a chambered concrete insert having parallel side walls and a bottom adapted for the reception of a nut and bolt-head holder, and having in such bottom a slot, of a nut and bolt-head holder such as described comprising a one-piece base broader than such slot but adapted for insertion therethrough and of non-circular

profile, the breadth and profile being such that said base will not rotate within the insert when in place therein, said base adapted to engage the bottom of a nut or bolt-head and apertured for the passage of the bolt and provided on two opposite sides with integral uprising projections of a flexible nature adapted to be bent over the top of such nut or bolt-head to hold the same in place, and provided on two other opposite sides with other projections adapted to engage the sides of the nut or bolt-head.

3. A nut and bolt-head holder such as described comprising a one-piece base adapted to engage the bottom of a nut or bolt-head and apertured for the passage of the bolt and provided on opposite sides with integral uprising projections of a flexible nature, adapted to be bent over the top of such nut or bolt-head to hold the same in place, the said aperture being of flaring form from the nut or bolt-head engaging surface of said base outward.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JAMES E. MARBLE.

Witnesses:
H. M. MARBLE,
PAUL H. FRANKE.