Aug. 11, 1925.

1,549,041

O. E. BERG

STUD REMOVING TOOL

Filed Sept. 17, 1924

Fig. 1.

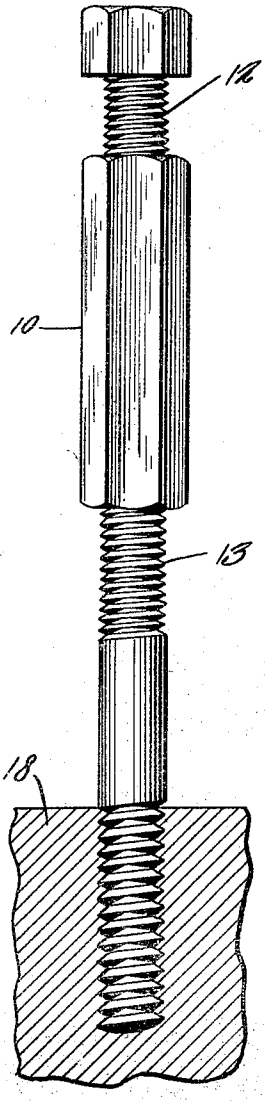


Fig. 2.

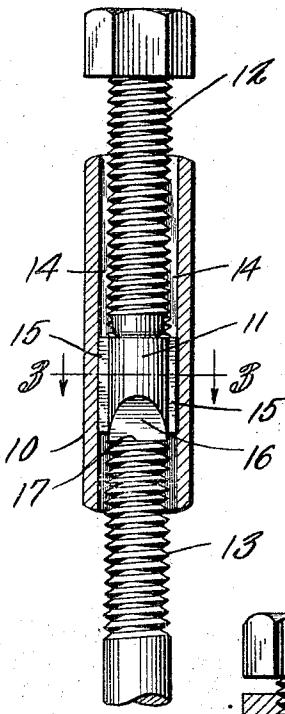


Fig. 3.

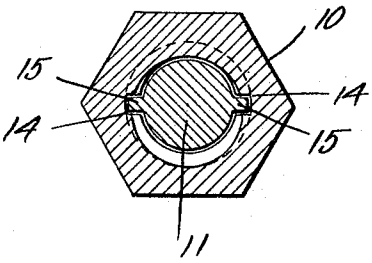
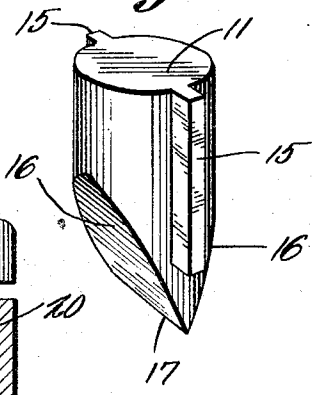


Fig. 4.



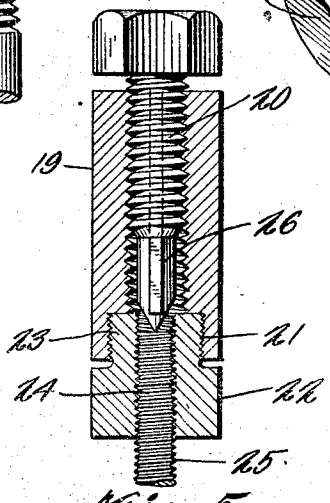


Fig. 5.

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UNITED STATES PATENT OFFICE.

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STUD-REMOVING TOOL.

Application filed September 17, 1924. Serial No. 738,302.

To all whom it may concern:

Be it known that I, OSCAR E. BERG, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented new and useful Improvements in Stud-Removing Tools, of which the following is a specification.

This invention contemplates the provision of a tool adapted to be used in conjunction with stud bolts or the like and primarily intended to facilitate the removal of such bolts, particularly where the bolt has been broken to render the use of nut locks, pipe wrenches and the like impossible.

The chief characteristic of the present invention resides in the provision of a tool of the above mentioned character, which consists of but few parts capable of being quickly and easily assembled or disassembled as the occasion may require, and a tool that can adapt itself for use with studs of different diameters.

Other objects and advantages will appear when the following detail description is read in connection with the accompanying drawings, the invention residing in the construction, combination and arrangement of parts as claimed.

In the drawings forming part of this application, like numerals of reference indicate similar parts in the several views, and wherein:—

Figure 1 is a view in elevation showing the tool associated with the stud bolt to facilitate the turning of the bolt either to apply the same, or to remove the same from an object.

Fig. 2 is a fragmentary vertical sectional view through the tool showing it associated with a stud bolt;

Fig. 3 is a sectional view taken on line 3—3 of Fig. 2;

Fig. 4 is a perspective view of the sliding cutter; and

Fig. 5 is a sectional view through a modified form of the invention showing it associated with a stud.

In Figs. 1 to 4 I have shown one embodiment of the invention, wherein it will be noted that the tool essentially consists of three parts, namely a body portion 10, a sliding cutter 11, and an adjusting bolt 12. The body 10 is preferably hexagon in cross-sectional contour as shown in Fig. 3, although this body is interiorly threaded, and is provided with a longitudinal bore of a diameter to accommodate itself to the standard size stud bolt 13. The adjusting bolt 12 is threaded into the body 10 from the upper end thereof as shown in Figs. 1 and 2. In addition to being interiorly threaded, the body 10 is formed with diametrically opposed grooves 14 which extend throughout the entire length of the body 10 and are adapted to receive the web like extensions which are carried by the opposed sides of the sliding cutter 11. Manifestly this cutter 11 is adapted to be positioned within the body 10, the lower end of the cutter being beveled as at 16 to provide a sharp cutting edge 17 which is presented to the particular stud bolt to be removed.

In practice the body 10 is screwed upon the adjacent end of the stud bolt 13 which is intended to be removed from the work or object 18, after which the slide cutter 11 is positioned within the sleeve, and allowed to drop therethrough, until the sharp edge 17 contacts the upper edge of the bolt 13. The adjusting bolt 12 is then turned within the body 10, to force the cutter 11 downwardly, until the cutting edge 17 embeds itself within the upper end of the bolt 13. This is a very simple operation, and the parts of the tools can be quickly and conveniently associated with the bolt 13 to be removed in the manner just described. Any suitable wrench is then applied to the body 10, and by turning this body in the proper direction, the bolt 13 can be easily removed from the work or object 18. It is obvious that the web like extensions 15 positioned within the grooves 14 of the body, prevents the cutter from turning within the body, and when the wrench above referred to is applied to the body portion 10, the latter together with the cutter 11, the adjusting bolt 12, and the stud bolt 13 are all turned in unison until the bolt 13 is removed. While the tool can be used to place a stud bolt in position, its more important use resides in the fact that it materially facilitates the removal of such bolts or studs from work, or objects, when the stud or bolt is broken off so close to the work as to render the use of lock nuts, pipe wrenches or any other tool impossible for the purpose of turning the stud with a view of removing it from the work.

In Figure 5 I have shown a modified form of the invention which is highly important,

inasmuch as this form of the invention is susceptible for use in connection with studs or bolts of different diameters. This form of the invention essentially consists of a body 19 similar in construction to the body 10 above referred to, and interiorly threaded to accommodate the adjusting bolt 20. However this body 19 differs from the body 10 in that the lower end of the body is recessed or counterbored and interiorly threaded as at 21 to accommodate one of a plurality of different size nuts, one of which nuts is illustrated at 22 in Figure 5. It is my intention to use in conjunction, with the body 19 a plurality of such nuts 22, each nut having a reduced threaded extension 23 of the same diameter to be screwed into the recess or counter-bore 21 of the body 19, but the various nuts will have bores 24 of different diameters to accommodate different size studs or bolts 25. This form of the invention also makes use of a cutter 26 of the same design as that shown in Fig. 4, and used in conjunction with the body member 10.

In practice, a nut 22 having a bore of proper size to accommodate itself to the particular bolt or stud to be removed, is threaded into the lower end of the body 19. Then this nut is threaded onto the adjacent end of the stud 25. The cutter 26 is slipped within the body 19, and by subsequently turning the adjusting bolt 20, the lower end of the cutter 26 is forced to embed itself a slight distance within the upper end of said bolt or stud 25. Then a suitable wrench is applied to the body 19 and by turning the body in the proper direction the stud 25 can be conveniently and easily removed from the particular object with which it is associated.

While it is believed that from the foregoing description, the nature and advantages of the invention will be readily apparent, I desire to have it understood that I do not limit myself to what is herein shown and described, and that such changes may be resorted to when desired as fall within the scope of what is claimed.

What I claim is:

A stud-removing tool comprising a body member having a threaded longitudinal bore and opposed longitudinal grooves communicating with said bore, said body member having its lower end counterbored to provide a recess, a nut having a reduced extension adapted to be threaded into said recess, and a threaded bore of a diameter different from the diameter of the bore of said body member and communicating therewith, a bevel-edged cutter slidable within the body member, extensions carried by said cutter and adapted to be received by said grooves to prevent turning of said cutter within the body member, and a bolt threaded into the upper end of said body member and adapted to force said cutter to partially embed itself within the adjacent end of the stud to be removed, as and for the purpose specified.

In testimony whereof I affix my signature.

OSCAR E. BERG.