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H. M. PROCTOR

1,815,363

STUD WRENCH

Filed Oct. 6, 1930

Fig. 1

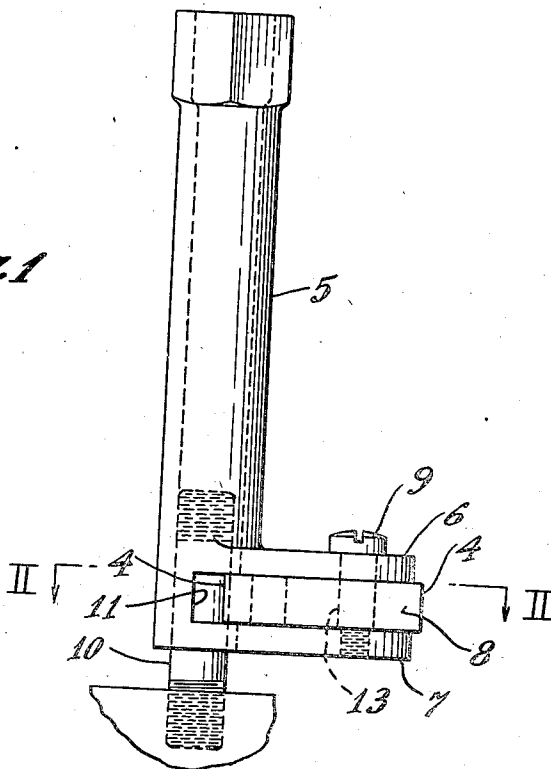


Fig. 2

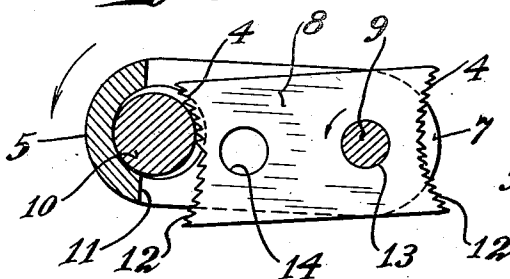
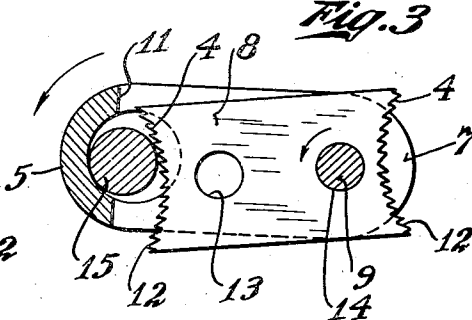


Fig. 3



INVENTOR

H. M. Proctor

BY

Johnston & Jennings

ATTORNEYS

WITNESS—

Charles H. Bassett

UNITED STATES PATENT OFFICE

HUBERT M. PROCTOR, OF BIRMINGHAM, ALABAMA, ASSIGNOR OF ONE-HALF TO T. M. NESBIT, JR., OF BIRMINGHAM, ALABAMA

STUD WRENCH

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My invention relates to stud wrenches. An object of my invention is to provide a wrench which is adapted to engage with studs of various diameters, and is also adapted to turn a stud either clockwise or counter-clockwise without change or adjustment of parts.

Another object of my invention is to provide a wrench in which the clamping force increases in proportion to the resistance offered by the stud, and in which there is a maximum of gripping surface provided.

A further object of my invention is to provide a wrench having a minimum number of parts and which will not readily get out of order.

Briefly, my wrench comprises a tubular member adapted to receive a stud. A gripping member is pivotably mounted between a pair of ears which are formed on the lower end of the tubular member. The tubular member is slotted between the ears to permit the gripping member to engage a stud and is provided with means at its upper end to facilitate turning the tool when the stud is being mounted or removed from its companion part. The gripping member is provided at each of its ends with a concave gripping surface having teeth oppositely inclined on the two sides of the longitudinal axis thereof. The gripping member is provided with a pair of pivot points, differently spaced with respect to the ends thereof, one for each gripping surface, to adapt the wrench for a wider range of use.

Apparatus embodying features of my invention is illustrated in the accompanying drawings forming a part of this specification, in which:

Fig. 1 is a view in side elevation showing a wrench engaging a stud;

Fig. 2 is a sectional view taken along the line II—II of Fig. 1; and

Fig. 3 is a sectional view taken along the same line as Fig. 2 and showing the gripping member mounted reversely to engage with a smaller diameter stud than is shown in Fig. 2.

Referring to the drawings for a better understanding of my invention, I show a tubular member 5 having a pair of ears 6 and

7 formed on its lower end. A gripping member 8 is pivotably mounted between the ears on a pivot pin 9 and extends into a slot 11 formed in the tubular member.

A concave gripping surface 4 is formed at each end of the gripping member 8 and each is provided with teeth 12 which are oppositely and outwardly inclined with respect to the longitudinal axis of the gripping member, whereby a stud may be engaged and turned in either direction by swinging the gripping member 8 in the proper direction.

When the pivot pin 9 is engaged in hole 13 formed near one end of the gripping member, it is adapted to engage with a large diameter stud 10. When the wrench is to be used to mount or remove a smaller diameter stud 15, the pivot pin 9 is removed and mounted through the hole 14 formed in the gripping member 8 nearer the end thereof than the hole 13 so that the other concave gripping surface 12 may be employed to engage the stud as shown in Fig. 3. The spacing of the holes 13 and 14 relative to the ends of the gripping member 8 provides a wrench having a wider range of use than would be possible if the gripping member 8 had only one gripping surface and one pivot center.

The provision of the concave gripping surfaces 4 with the oppositely inclined teeth 12 on the two sides of the gripping member provides means whereby there is a maximum of teeth engaging and gripping the stud to be tightened or removed.

The upper end of the tubular member 5 is shaped to accommodate a wrench, not shown, to facilitate turning. When the tool is used, the gripping member is turned about the pin 9 in a direction corresponding to the direction in which the stud is to be turned and grips the stud as securely as is necessary to overcome its resistance.

While I have shown my invention in but one form, it will be obvious to those skilled in the art that it is not so limited, but is susceptible of various changes and modifications, without departing from the spirit thereof, and I desire, therefore, that only such limitations shall be placed thereupon as are imposed

by the prior art or as are specifically set forth in the appended claims.

What I claim is:

1. A stud wrench comprising a tubular member adapted to receive a stud, a pair of spaced ears formed on one end of the tubular member, means defining a slot opening into the tubular member, a gripping member having pivot holes therethrough near the ends thereof and spaced at relatively different distances from the ends and extending into the slot, a detachable pivot pin for pivotably mounting the gripping member between said ears in its remoter pivot hole from the slot, a concave gripping surface formed on each end of the gripping member, and teeth formed on said gripping surfaces and extending outwardly and oppositely on the two sides of the longitudinal axis of the gripping member.
2. A stud wrench comprising a tubular member having at one end a tool grip and at the other end a stud gripping means comprising a laterally extended bearing, a grip plate having concave arcuate toothed surfaces at opposite ends thereof and having pivot holes along the center line thereof, said pivot holes being differentially spaced from said toothed surfaces, a pin engaged in said bearing and in the pivot hole remote from the tubular member, there being a slot in said tubular member whereby the selected toothed surface of the grip plate may enter and swing about said pin in either direction across the bore of said tubular member to engage and grip a stud therein.

In testimony whereof I affix my signature.
HUBERT M. PROCTOR.

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