Dec. 14, 1926.

J. E. PENNINGTON

1,610,387

WRENCH

Filed Feb. 25, 1925

Fig. 1.

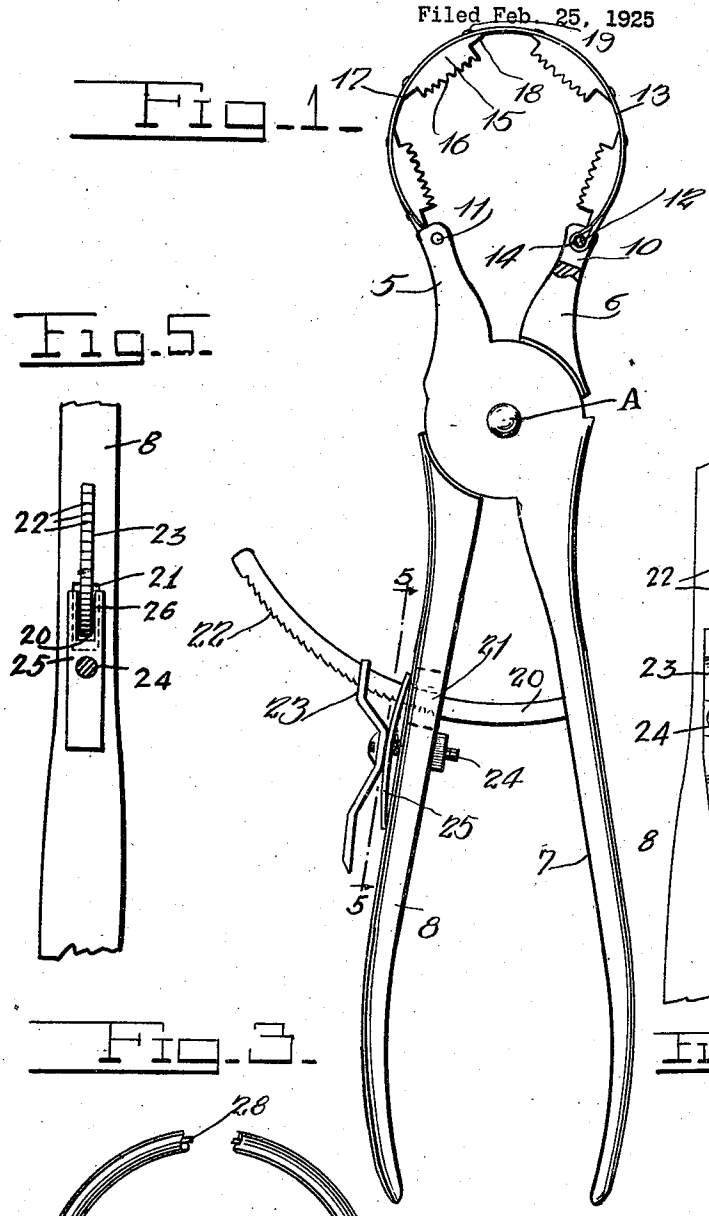
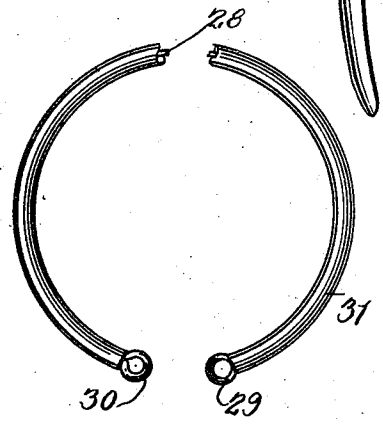


Fig. 5.

Fig. 3.



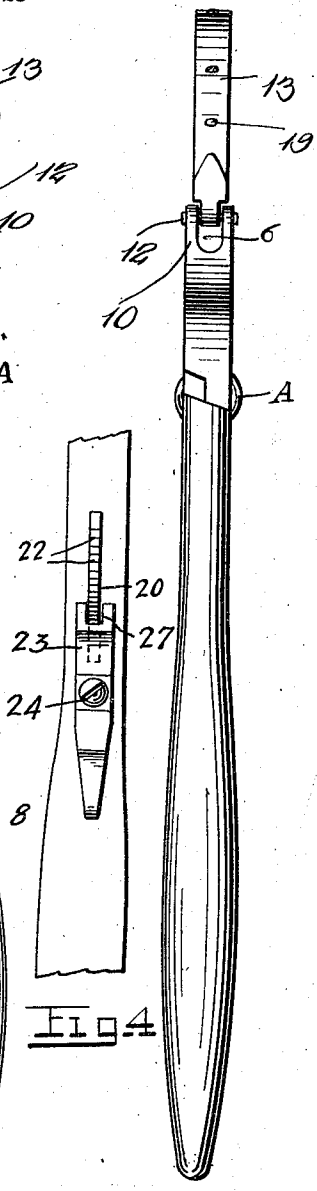


Fig. 4.

Fig. 2.

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UNITED STATES PATENT OFFICE.

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WRENCH.

Application filed February 25, 1925. Serial No. 11,548.

This invention relates to wrenches of the flexible jaw type, and the said invention has for an object the provision of a flexible carrier adapted to embrace an element to be turned, the said flexible element being associated with novel means for drawing or carrying the ends toward each other in order that the flexible wrench may be drawn tightly against the object which it is to operate or turn.

It is a further object of this invention to provide a flexible element having friction producing means which will serve to securely hold the object to be turned while the wrench is manipulated.

It is a still further object of this invention to produce a flexible wrench of the character indicated having interchangeable object engaging devices whereby the said flexible wrench may operate in conjunction with metal whose surface need not be guarded from gripping marks, and also by interchanging the flexible gripping elements the said wrench may operate in conjunction with metal rings or nuts having high finish, without liability of marring the surface thereof.

It is a still further object of this invention to produce a wrench of the character indicated in which the gripping rings may be expeditiously manipulated for applying them to or removing them from the object to be turned, and in which the said gripping elements may be expeditiously changed for producing the different results stated.

With the foregoing and other objects in view, the invention consists in the details of construction, and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this application wherein like characters denote corresponding parts in the several views, and in which—

Figure 1 illustrates a plan view, partly in section, of a wrench embodying the invention;

Figure 2 illustrates an edge view of the said wrench;

Figure 3 illustrates a view of a modified clamping ring;

Figure 4 illustrates a view in side elevation of a fragment of the wrench; and

Figure 5 illustrates a section taken on a line 5—5 between the spring and the latch, looking in the direction of the handle.

In these drawings, 5 and 6 denote the ends of pliers or tong-like structures, having handles 7 and 8, respectively, that are manipulated for causing the ends 5 and 6 to approach or recede with relation to each other. The handles 7 and 8 are oscillatable on a pivot A.

The elements 5 and 6 each has a recess such as 10, through which pins 11 and 12 extend, respectively. The flexible jaw or band 13 may be of any appropriate length and it preferably terminates in eyes or loops 14, through which the pins 11 and 12 extend, for anchoring the flexible band to the members 5 and 6. Preferably, the flexible element has a plurality of jaws 15 secured to it, and these jaws have serrated surfaces 16 which are adapted to frictionally engage the object to be turned. The jaws, in the present embodiment of the invention, have flanges 17 and 18 at their ends and fastenings 19, such as rivets or the like, extend through the flanges and through the flexible band whereby they are held in assembled relation to each other.

It will follow from an inspection of the drawing and from the foregoing description that as the handles are manipulated for pressing the members 5 and 6 toward each other, the flexible band will be contracted, and the flexible band is capable of movement, within predetermined range, to cause the jaws to engage an object which the band embraces.

As a means for holding the handles at different positions, the handle 7 has a segmental arm 20 secured to it, the said arm passing through an aperture 21. One edge of the arm is provided with serrations 22 that are engaged by a detent 23 for holding the handles at different positions of adjustment. The detent is secured on a bolt or stud 24 anchored in the handle and a spring 25 is also mounted on the stud interposed between the detent and the handle 8, the said spring being operative to force the detent into engagement with the arm 20. As here shown, the spring has a slot 26 in its end, which receives the arm 20, and the detent 23 likewise has a slot 27 in its end to receive the said arm, so that when the handle 8 is moved, the arm 20 acts as a guide for the detent and the spring.

In the modification shown in Fig. 3, the

flexible band comprises a metal core 28 in the nature of a wire and it has loops 29 and 30 at its ends, which are intended to receive the pins 11 and 12 when the modified clamping ring is to be substituted for the clamping element shown in Fig. 1. In this modified construction, the wire or metal core is covered by a rubber sheathing 31 which tends to grip against the surfaces of highly finished metal parts or the like, so that the manipulation of the wrench does not injure the surfaces of the said parts. This last mentioned wrench element may be used to advantage in connection with the turning of lens rings or the like on automobile lamps, and other uses will be found for it, as one skilled in the art will understand.

I claim:

In a flexible wrench, handles, a pivot for oscillatably connecting the handles, the said handles having extensions beyond the pivot, the said extensions having recesses in their ends, a flexible band having eyes lying in the recesses of the extensions, pins projecting through the extensions and the said eyes, and object engaging jaws on the inner surface of the band, each having a band engaging surface conforming to the contour of the band and flanges at the ends of the said jaws, the said flanges and band having coinciding apertures, and fastenings extending through the apertures of the flanges and the band for securing the flanges and band together.

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