Dec. 10, 1929. A. C. PATCH 1,738,607

WRENCH

Filed Feb. 2, 1928

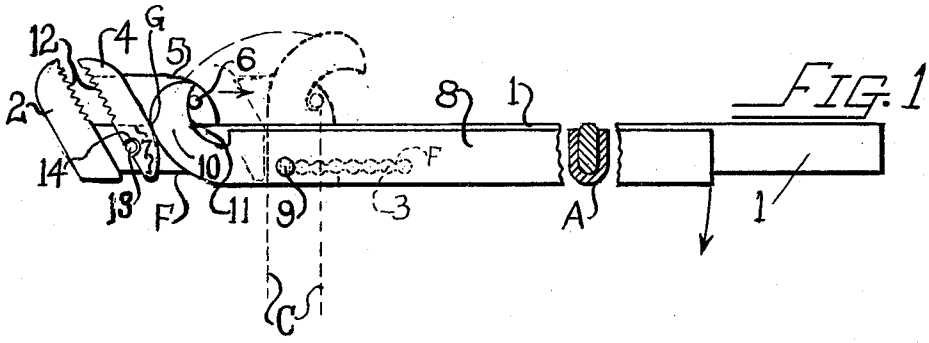


FIG. 1



FIG. 2

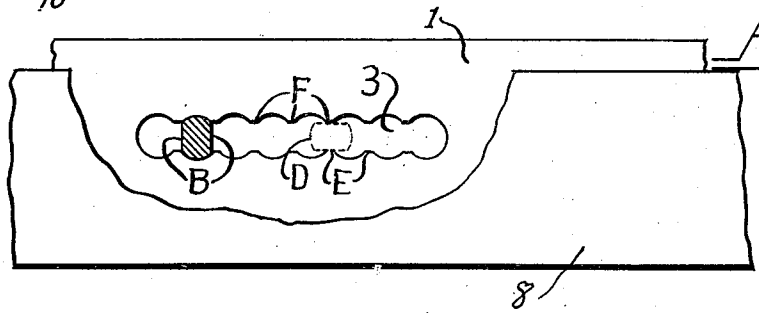


FIG. 4

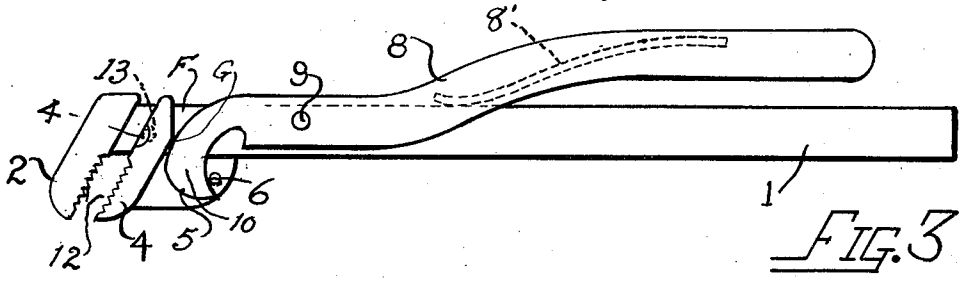


FIG. 3

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UNITED STATES PATENT OFFICE

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WRENCH

Application filed February 2, 1928. Serial No. 251,335.

My invention relates to improvements in wrenches.

The object of my invention is to provide a wrench eliminating the use of threaded means as commonly used in adjusting the jaws.

A further object of my invention is to provide a wrench that will function as a pipe turning means, and also as pincers.

A still further object of my invention is to provide a wire cutting means actuated by the jaw pinching means.

These and other objects will hereinafter be more fully explained, reference being had to the accompanying drawings forming a part of this specification, in which like characters will apply to like parts throughout the different views.

Referring to the drawings:

Fig. 1 is a side view of the wrench, partly in section.

Fig. 2 is a transverse view of Fig. 1.

Fig. 3 is a modification of the wrench handles.

Fig. 4 is an enlarged fragmentary detail, showing the variable pivot points.

The mechanism herein disclosed consists of a handle 1 having a laterally extending jaw 2 integrally connected to the end thereof. The said handle has a corrugated slot 3 as shown in Fig. 4, the said slot functioning as hereinafter described. Slidably positioned on the handle is a jaw 4, having a web 5 integrally connected and adapted to engage along the edge of the handle 1. Rearwardly positioned in the web is a pin 6 transversely extending from both sides thereof for the purpose later described.

The jaw 4 is provided with an eye as indicated by dotted lines 7, and in which the handle 1 slidably engages. Pivotally attached to the handle is an adjusting lever 8, the said lever being U-shaped to engage over the handle as shown at A in Fig. 1, and being tensioned by a spring 8′ shown by dotted lines in Fig. 3. The pivoting means consists of a pin 9 having a central portion flattened, the sides of which are parallel to each other as shown at B in Fig. 4, the said flat portions being transversely positioned to the lever. It will be understood that the said pin is adapted to extend through the slot 3 and engage rigidly in both sides of the lever; and being so arranged, it is possible to move the said lever longitudinally from one end of the slot to the other when the lever is rocked transversely to the handle as shown by dotted lines C; and when rocked to such position the pin will engage in the slot as shown by dotted lines D in Fig. 4 for the purpose of passing between the points E to a selected seat or trunnion point, opening the jaws of the wrench as desired. When being thus seated, the lever is free to rock to parallel alignment with the handle and stationarily supported, but free to rock when the wrench is used as pliers or as a pipe wrench.

When the lever is being rocked to its transverse position, the noses 10 engage with both ends of pin 6 as retracting means for jaw 4, as shown by dotted lines in Fig. 1, and by this engagement the jaw is carried by the lever to the selected distance. As the lever is rocked rearward, the said jaw is driven forward by the arcuate portion F adjacent the nose, which functions as a cam engaging on the back of jaw 4 as at G; and likewise the arcuate portions 11 for retraction, engaging with both ends of the pin. In Figs. 1 and 3 the said jaws are toothed as at 12, although smooth jaws may be provided.

As a convenient means for clipping wire, I have provided an aperture 13 in the handle 1, which is spaced a short distance from the jaw member 2, and to co-operate therewith a cutting edge 4′ is provided on one side of jaw 4, and as a means to prevent contact of the jaw member on the opposite side I have removed or provided a curvature, as shown at 14 in Fig. 1.

In Fig. 3 is shown a modification of the lever, which is curved outward from the handle and is the preferred form when the wrench is used as pliers, wire cutters, or pipe wrench. The drawings also show the jaws positioned at an angle relative to the handle; the angle may be varied, or the jaws may be positioned at right angles to the handle, any of which modifications will not interfere with the lever movement and its adjusting

features. Such other modifications may be employed as lie within the scope of the appended claim.

Having fully described my invention, what I claim and desire to secure by Letters Patent is:

A wrench of the kind described, comprising a handle having a slot longitudinally positioned therewith and curvatures along both sides of the slot oppositely disposed to each other as seating means for pivotal engagement, a lever having a pin with a central portion flattened and parallel to each other, functioning as a trunnion on which the lever is rocked, a jaw laterally extending and integrally connected to the handle, a second jaw having an eye to slidably engage on the handle, said jaw having a web laterally extending and adapted to bear on the edge of the handle as a bracing means for its respective jaw, a pin extending through the end of the web as means by which the said jaw is retracted by rocking the lever.

In testimony whereof I affix my signature.

ALBERT C. PATCH.