G. B. WELDON & F. B. RAMBO.

PLIERS.

APPLICATION FILED JUNE 12, 1916.

1,216,527. Patented Feb. 20, 1917.

FIG. 1

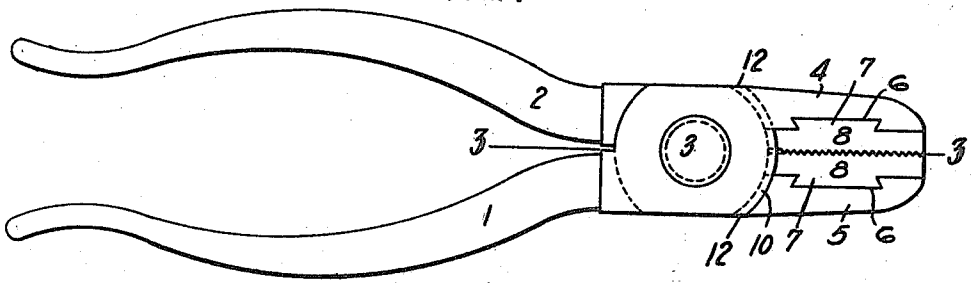


FIG. 2

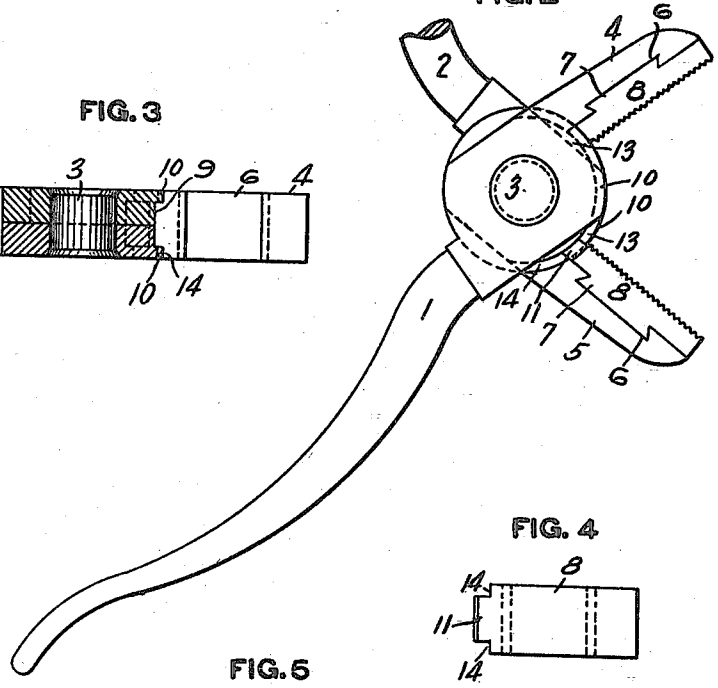
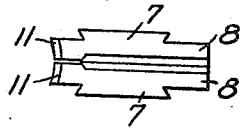


FIG. 3

FIG. 4

FIG. 5



WITNESSES

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PLIERS.

1,216,527. Specification of Letters Patent. Patented Feb. 20, 1917.

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To all whom it may concern:

Be it known that we, GEORGE B. WELDON and FRANK B. RAMBO, residents of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Pliers, of which the following is a specification.

This invention relates to pliers having removable working faces so that a single tool can be adapted for various purposes.

The object of the invention is to provide pliers of the kind described in which the working faces can be readily and quickly removed and replaced, but nevertheless are held securely in position while using the tool and without the use of separate locking or securing means.

The invention comprises the construction and arrangement of parts hereinafter described and claimed.

In the drawings, Figure 1 is a plan view of the pliers with the removable faces in place and showing the tool closed; Fig. 2 is a similar view showing the tool opened to its extreme position to permit the removal and insertion of the removable faces; Fig. 3 is a sectional view on the line 3—3, Fig. 1, without the removable working face; Fig. 4 is a plan view of one of the removable faces; and Fig. 5 shows a modified form of removable face.

The body of the pliers may be of the usual construction, and comprises the two handle members 1 and 2 pivotally connected at 3 and each provided with a jaw portion, marked 4 and 5 respectively. Each of the jaw portions is provided with a dovetailed groove 6 extending transversely thereof and preferably entirely across the same, and adapted to receive a correspondingly shaped projection 7 on the jaw face or insert 8. The jaw faces or inserts are assembled on and removed from the jaw portions by merely sliding the projections 7 laterally into and out of the grooves 6.

In order to hold the jaw faces in place when the tool is being used, and without the use of separate fastening means, each of the jaw members is cut away on its knuckle portion, as at 9, but not entirely across its width, leaving a flange 10 on the outer face of each knuckle member, and which flanges, when the two members of the pliers are assembled, form between them a groove, as shown in Fig. 3. Each jaw face or insert 8 is provided at its inner end with a projection 11 of reduced width adapted to enter into the groove between the flanges 10, and to be held by said flanges 10 against lateral displacement. The flanges 10 terminate at 12, at the edges of the plier body, so that when the pliers are opened to their extreme open position, as shown in Fig. 2, an open space 13 is left on each side of the pliers opposite the projections 11 on the jaw faces, and thus permitting said jaw faces or inserts to be inserted and removed. It will be understood that one of said inserts is removed laterally toward one side of the pliers and the other is removed laterally toward the other side of the pliers. Each jaw portion 4 and 5, at its knuckle end is cut away, as at 14, in order to make room for the flange 10 on the other member.

When it is desired to insert a jaw face, the pliers are opened to their fullest extent, in which position the space 13 at the end of the flange 10 will permit the jaw face to be slid laterally into place, the dovetailed projection 7 entering the dovetailed groove 6, and the projection 11 on the inner end of said jaw face entering through the space 13. In all other positions of the jaw members the flanges 10 prevent displacement of the jaw faces or inserts laterally, and consequently said jaw faces or inserts are held against accidental loss or displacement during the ordinary use of the tool.

Any number of removable jaw faces or inserts, with any desired contour of face, may be provided. Figs. 1 and 5 show two forms of such removable jaw faces, but obviously any desired form of working face may be provided on the inserts 8, and a tool will be accompanied by a number of such faces or inserts, all of which may be interchanged at will in the manner above described and therefore greatly widen the uses to which a single pair of pliers can be put.

The tool described is very simple and compact. There are no extra parts to be lost or to get out of adjustment, it being only necessary in assembling the device to open the working jaws to the fullest extent, when the removable faces can be readily slid into or out of position, and when the pliers are in use it is evident that the removable faces are securely locked in place so as to prevent their getting out of proper adjustment, and at the same time this lock-

ing means is such as to permit the easy and ready removal or insertion of the working faces.

What we claim is:—

1. In a device of the character described, a jaw end having a dovetailed groove in the face thereof extending across said face and adapted to receive an undercut projection on a removable jaw face, whereby the removable jaw face may be positioned therein by sliding it laterally into place, and a flange on the other jaw member outside the dovetailed groove for holding the removable face in position.

2. In a device of the character described, a jaw end, a dovetailed groove extending across the face of said jaw end and adapted to have an undercut projection on the removable jaw face positioned therein by lateral movement of the jaw face, and a groove in the knuckle face at the base of the jaw end for receiving a projection on the end of the removable face to lock the removable face in position.

3. In a pair of pliers, a pair of pivoted members having jaw ends, a dovetailed groove extending across the face of each jaw end and adapted to receive an undercut projection on a removable jaw face, a flange on the knuckle portion of each member, the two flanges forming between them a groove, and a cut-away portion at the end of each flange adapted upon full opening of the jaw ends to admit of the passage by lateral movement of a projection on the end of each of the removable faces into the groove between the flanges, the flanges acting to prevent the removal of the jaw faces in any other position of the jaws.

4. A pair of pliers comprising a pair of pivoted members having jaw ends, a dovetailed groove in each jaw end extending laterally across the face thereof, a groove in the knuckle portions of the pivoted members, and a removable jaw face having an undercut projection coöperating with the dovetailed groove in the jaw end and having an end projection coöperating with the groove in the knuckle portions.

5. A pair of pliers comprising a pair of pivoted members having jaw ends, a dovetailed groove in each jaw end extending transversely across the face thereof, a flange along the edge of each knuckle portion and forming a groove therebetween, said flanges terminating at such point that when the pliers are fully open an opening is provided at each side of the pliers, a removable face on each jaw end having an undercut projection coöperating with its dovetailed groove and an end projection coöperating with the groove between the flanges on the knuckle portions to be thereby locked in place.

In testimony whereof, we have hereunto set our hands.

GEORGE B. WELDON.
FRANK B. RAMBO.

Witnesses:
GLENN H. LERESCHE,
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."