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PLIERS WITH INTERCHANGEABLE JAWS

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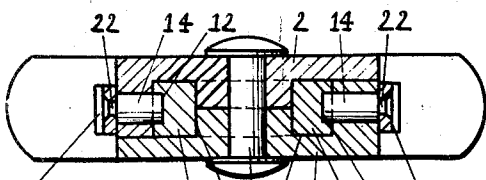
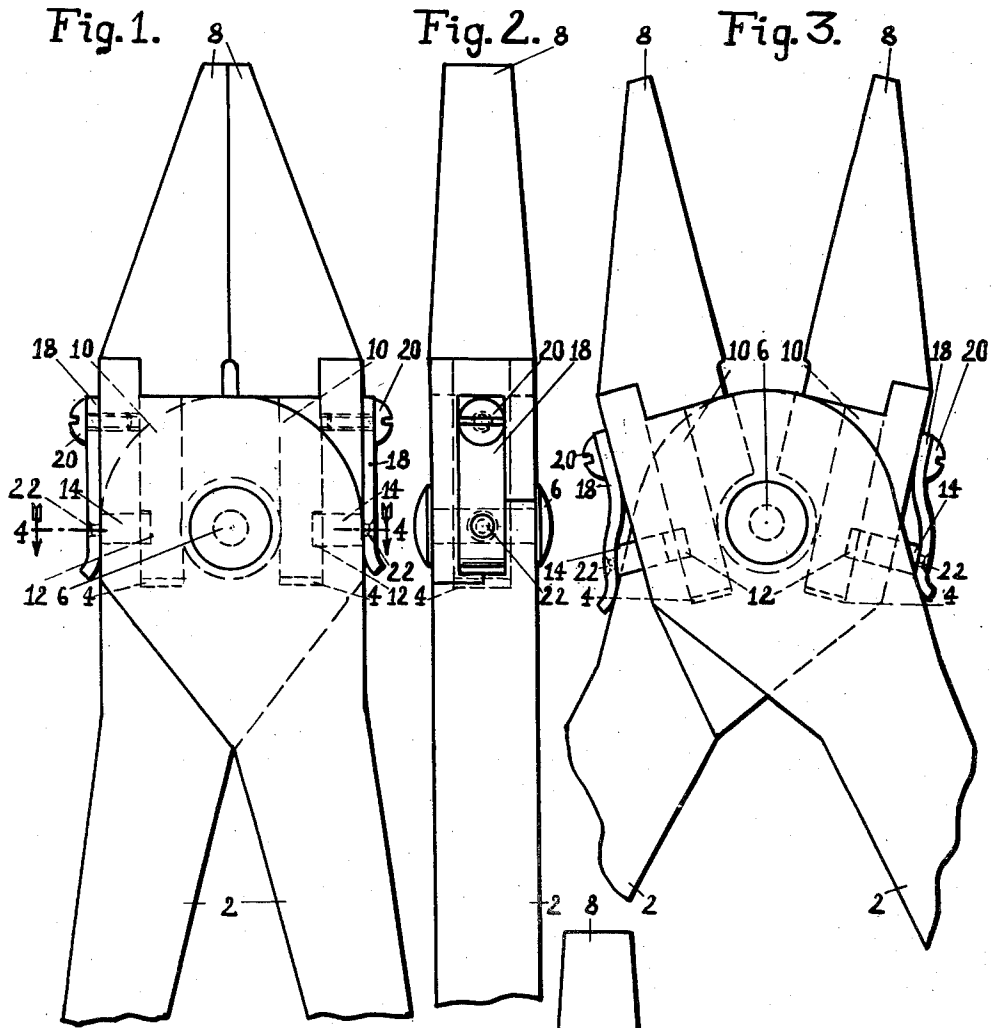


Fig. 4.

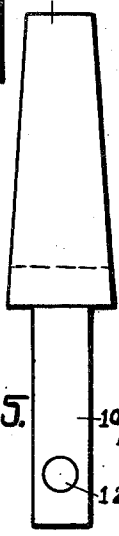


Fig. 5.

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## PLIERS WITH INTERCHANGEABLE JAWS

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1 Claim. (Cl. 81—52)

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The present invention relates to the art of small hand tools and its concept is in advances in the construction and operation of hand tools of the pliers type.

It is an object of this invention to provide a simple, practical, substantial, low cost pliers tool incorporating crossed plier handle members and a plurality of pairs of jaw members of different shapes, designs and sizes adapted to be interchangeably attached to said handle members, so that one and the same pair of handle members can be used in connection with, for instance, a pair of flat jaw members, a pair of round jaw members, a pair of serrated jaw members, a pair of cutting jaw members, or the like.

Another object of the present invention is the provision of a device of the character described which permits the interchanging of jaw members to be carried out speedily and simply without the use of any additional tools as well as without the application of any considerable amount of skill, and which is so constructed that the jaw members are firmly and safely fastened to the handle members once they have been secured thereto, so that they will not shake thereon and that they cannot be lost.

A further object of the present invention is the provision of a device of the character described which is light in weight, handy in use, and simple in construction, so that it can be manufactured and sold inexpensively, but which is also sturdy, durable, and well adapted to withstand the rough usage to which tools of this type ordinarily are subjected.

With the foregoing and other objects in view which will appear as the description proceeds, the invention consists of certain novel details of construction and combinations of parts hereinafter more fully described and pointed out in the claim, it being understood that changes may be made in the construction and arrangement of parts without departing from the spirit of the invention as claimed.

In the accompanying drawing a preferred form of the invention has been shown.

In said drawing:

Figure 1 is a fractional front view of a preferred embodiment of my invention showing the device with its jaws closed;

Figure 2 is a fractional side view of the same; Figure 3 is a fractional front view as Figure 1 showing the device with its jaws open;

Figure 4 is a sectional view on the line 4—4 of Figure 1; and

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Figure 5 is a detailed side view of an interchangeable jaw member.

Similar reference characters refer to similar parts throughout the several views.

In the drawing the numeral 2 denotes a pair of handle members each of which has a socket 4 extending into one of its end portions, and the end portions which are provided with the sockets 4 are pivoted at 6 to each other in the usual, well-known manner.

A plurality of pairs of jaw members are associated with each pair of handle members 2. One pair of jaw members 8 is shown in the drawing. Each jaw member 8, irrespective of its shape or design, has a reduced foot portion 10, which fits snugly into a socket 4. The reduced portions 10 are secured to the handle members 2 by any suitable means, preferably in the manner shown in the drawing, where it will be seen that each portion 10 has a cavity 12 into which extends a pin 14 through a lateral bore 16, which reaches from the outer side of the handle member 2 to the socket 4. The pins 14 are forced through the bores 16 into the cavities 12 by any suitable resilient means, preferably by means of springs 18 secured to the handle members 2 at 20 and to the pins 14 at 22 by means of screwing and riveting respectively, or by any other suitable means. I prefer to use comparatively wide springs 18, as shown, so that their end portions beyond the pins 14 cover partially both of the upper shank sections of the handle members 2, which shank sections cross each other in the usual manner. By this arrangement an opening of the pliers as far as possible will be sufficient for causing said upper shank sections to engage the lower ends of the springs 18 and to force them away from the handle members 2 so far as to move the pins 14 out of the cavities 12, as may be seen in Fig. 3. With the portions 10 thus released from the pins 14, the jaw members 8 can be removed easily from the handle members 2, and can be replaced by other jaw members.

Since certain changes may be made in the above article and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

It is also to be understood that the following claim is intended to cover all of the generic and specific features of the invention herein described, and all statements of the scope of the

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invention which as a matter of language might be said to fall therein.

Having thus fully described my said invention, what I claim as new and desire to secure by Letters Patent in the United States is:

A device of the character described comprising a pair of handle members each of which has a socket extending into one of its end portions and the portions provided with the sockets crossing each other and being connected to each other by means of a pivot pin and each handle member having a bore disposed at right angles to said pivot pin and extending laterally from an outer side of the handle member into said socket, a pair of jaw members each having a reduced end portion that extends into one of said sockets and is provided with a cavity at that section which is adjacent said bore in the handle member, a spring secured to the outer side of the upper end portion of each handle member and extending over said bore, and a pin secured to the lower portion of each spring extending through said bore of each handle member into the cavity of each of said reduced end portions

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of a jaw member, the lower end portions of said springs protruding beyond said pins and being of such a width that they cover both lateral sections of said crossing handle members, so that upon fully opening said handle members one of the latter forces the lower end of one of the springs away from the other handle member, thereby pulling the pins out of said cavities.

ERICH KOLLWECK.

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