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H. C. KEMMERLIN

2,411,733

TUBING EXPANDING TOOL

Filed May 31, 1944

Fig.1.

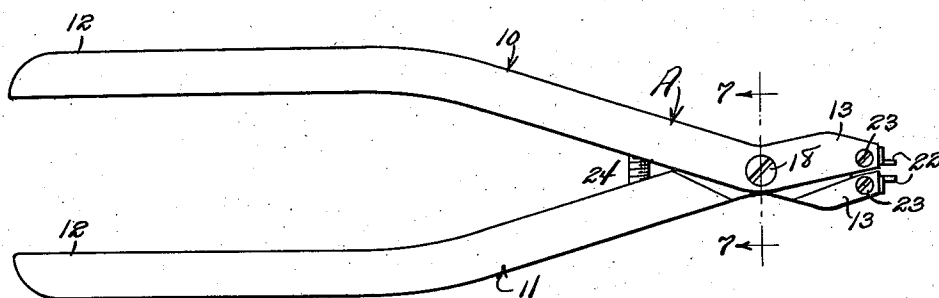


Fig. 2.

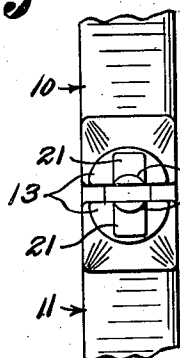


Fig. 3.

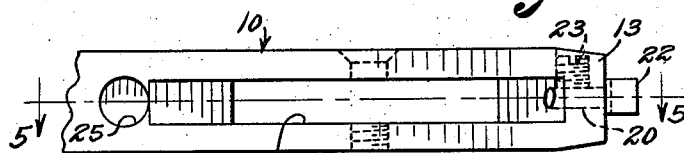


Fig. 4

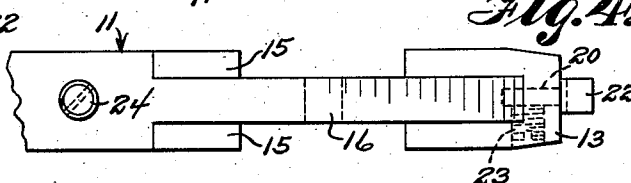


Fig. 5.

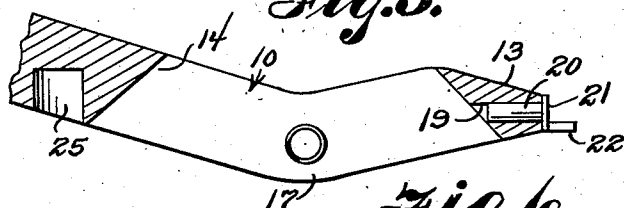


Fig. 6.

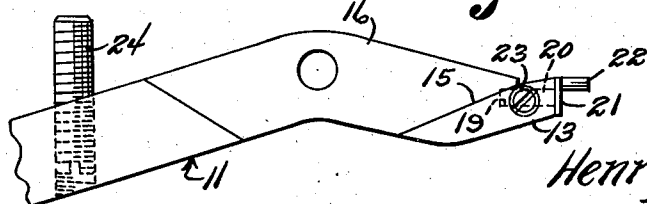
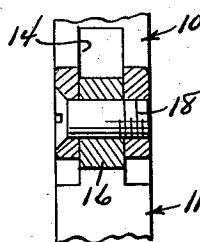


Fig. 7.



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TUBING EXPANDING TOOL

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1 Claim. (Cl. 81—5.1)

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The invention relates to a tool and more especially to an expanding tool for stretching or expanding purposes.

The primary object of the invention is the provision of a tool of this character, wherein the jaw ends of the same have fitted therein work applicators of special construction, so that the work can be properly engaged for the expanding or stretching of the latter, the tool being of forceps or plier type for hand operation thereof.

Another object of the invention is the provision of a tool of this character, wherein the same is designed for use in expanding tubing or a carrier therefor with the jaws of the said tool constructed so as to enter tubing or apertures in elastic material and be forced apart by pressure on the handles, thereby enlarging the size of the aperture and allowing a convenient connection with another tube or carrier.

A further object of the invention is the provision of a tool of this character, which is simple in construction, thoroughly reliable and efficient in operation, strong, durable, readily and easily handled, the work applicators being removably fitted, and comparatively inexpensive to manufacture.

With these and other objects in view the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described, illustrated in the accompanying drawing, which shows the preferred embodiment of the invention, and pointed out in the claim hereunto appended.

In the accompanying drawing:

Figure 1 is a side view of the tool constructed in accordance with the invention.

Figure 2 is a fragmentary end view of the same.

Figure 3 is a fragmentary inner face view of one of the jaws of the tool.

Figure 4 is a view similar to Figure 3 of the other jaw of the tool.

Figure 5 is a sectional view taken on the line 5—5 of Figure 3 looking in the direction of the arrows.

Figure 6 is a side view of the jaw for interfitting with the other jaw shown in Figure 5 of the tool.

Figure 7 is a sectional view taken on the line 7—7 of Figure 1 looking in the direction of the arrows.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

Referring to the drawing in detail, A designates generally the tool in its entirety as constructed

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in accordance with the invention, and hereinafter set forth in detail.

The tool A comprises a pair of levers 10 and 11, respectively, each having a handle end 12 which is of straight formation, and of required length. The levers 10 and 11 converge toward each other from the innermost portions of the handle ends 12, then are reversely angled thereto at the ends opposite and remote from the said handle ends 12, to provide outwardly divergent jaws 13.

The lever 10 next to its jaw 13 and partially extended into the latter has a bifurcation 14 longitudinally directed therein, while the lever 11 next to its jaw 13 and partially extended into the latter has in the outer faces recesses 15 providing a centered narrow elbow portion 16, which interfits the bifurcation 14, the latter being also reversely elbowed at 17 to the elbow portion 16. The elbowed portions 16 and 17 are pivoted together by a pivot bolt 18 for swingingly connecting the levers with each other for the swinging of the jaws 13 toward and away from one another. This pivot bolt 18 is located at the crotch of the elbows 16 and 17 of the levers 10 and 11, respectively.

Formed in the tips of the jaws 13 are sockets 19 for reception of the studs 20 of the work applicators 21, these having outer half-rounded outer side faces 22 conforming to the inner diameter and shape of a tubing or apertures therefor, the studs 20 being removably secured in the sockets 19 by set screws 23 tapped in the sides of the jaws 13 at one side thereof.

The lever 11 has fitted thereto an adjustable stop screw 24 which is adapted to contact with the base of a socketed stop 25 formed in the other lever 10, so as to limit the throw of the said levers when pressed toward each other at the handle ends 12 thereof, so as to regulate the separation of the jaws 13 when manually operating the tool for expanding or stretching purposes in operating on a tubing or carrier therefor as before stated.

The spreading of the jaws 13 is had by separating the handle ends 12 in the manual operation of the tool as will be apparent, due to the connection of the levers 10 and 11 as has been set forth.

From the foregoing it is thought that the construction of the tool and its manner of operation will be clearly understood, and therefore a more extended explanation has been omitted.

What is claimed is:

A tool of the kind described comprising a pair of levers having handle ends of straight formation which converge toward each other from the

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innermost portions of the handle ends, are then reversely angled thereto at the ends opposite and remote from said ends to provide outwardly divergent jaw ends, one of the levers having a longitudinally directed bifurcation therein, the other lever being reduced for interfitting the bifurcation, said levers being formed with reversely elbowed portions at their point of interfitting, a pivot bolt connecting the levers for opening and closing movement relative to each other in said elbow portions, sockets formed in the forward

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jaw ends of said levers, work applicators having studs, movably fitting the sockets in said levers, said work applicators having half rounded outer side faces formed thereon at a position off-center with relation to the studs, means for retaining said studs in said sockets and a limit screw fitting one of the levers and engaging the other lever for regulating the separation of the work applicators on actuating the levers.

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