Jan. 18, 1955 L. J. KOLAK 2,700,090

TOOL WITH ADAPTER

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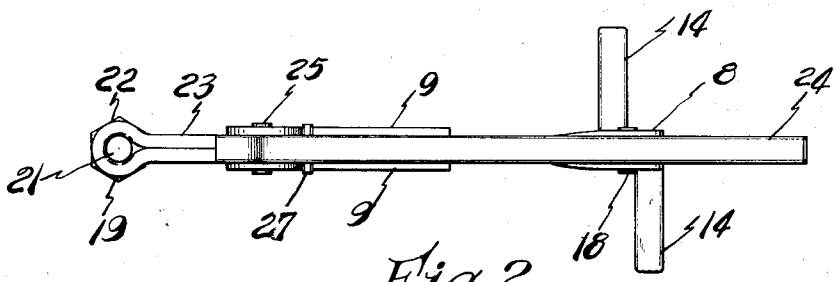


Fig. 2

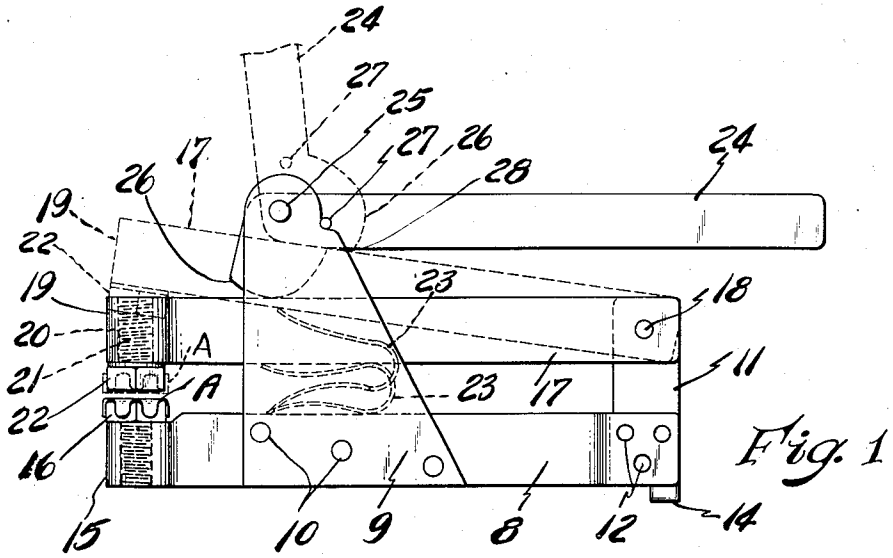


Fig. 1

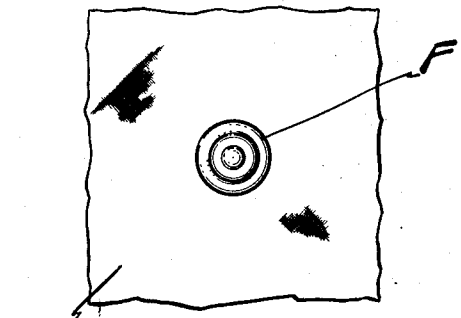


Fig. 4

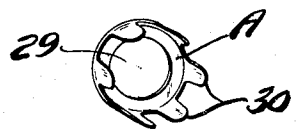


Fig. 3

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TOOL WITH ADAPTER

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6 Claims. (Cl. 218—5)

This invention relates to snap fastener attaching tools for securing fastening elements, such as metal snaps to cloth and synthetic materials of all kinds.

One of the prime objects of the invention is to design a very simple, practical and inexpensive snap fastener tool which is particularly adaptable for individual home use by housewives, dressmakers and others in general, and by means of which metal snaps of various size, design and make may be easily and quickly applied.

Another object is to provide a snap fastener tool which is compact in size, light in weight, composed of a minimum number of movable operating parts, and which is readily operable by even the most inexperienced persons.

A further object is to provide a snap fastener tool including quick-change snap adaptors adapted to fit various sizes and designs of snaps, which can be readily mounted on the die heads, thus enabling the operator to attach practically all of the various designs and sizes of snap fasteners at present on the market.

Still a further object is to provide an easily adjustable die head which in operation maintains true vertical alignment and which requires no pads, spools, hammers or other attachments to apply the snap fasteners.

With the above and other objects in view, the present invention consists in the combination and arrangement of parts, hereinafter more fully described, illustrated in the accompanying drawing, and more particularly pointed out in the appended claims, it being understood that changes may be made in the form, size, proportion, and minor details of construction, without departing from the spirit, or sacrificing any of the advantages of the invention.

In the drawing:

Fig. 1 is a side elevational view of my snap fastener tool, the broken lines showing the handle swung up into inoperative position.

Fig. 2 is a top plan view thereof.

Fig. 3 is an enlarged, perspective view showing one of the adaptors which are applied to the die heads.

Fig. 4 is a fragmentary view showing a piece of fabric with a snap attached thereto.

While there are several so-called snap fastener tools at present on the market, they are all of the heavy, expensive industrial type designed for use in high production garment factories and the like; consequently, housewives, dressmakers and others having a limited number of fasteners to apply must resort to pads, hammers, vices, etc., all of which are awkward, noisy, and difficult to use and with far from satisfactory results, and I have therefore perfected a very simple, inexpensive, cam-actuated tool having but one adjustment, and a plurality of adaptors to fit any size or shape snap fastener at present on the market.

Referring now more particularly to the drawing in which I have shown the preferred embodiment of my invention, the tool comprises a longitudinally disposed bottom bar **8** to which angularly shaped uprights **9** are secured by means of rivets **10**, said bar being preferably formed of folded strap material, the rear end of which is spread to accommodate the rear upright **11** therebetween, and to which it is secured by means of rivets **12**, the lower end of the upright being split to form outwardly bent oppositely disposed legs **14** to support the tool in upright position.

The front end **15** of the bar **8** is formed cylindrical in shape and is adapted to accommodate a die head **16** in

any desired manner. A lever **17** is disposed between the uprights **9** and is pivotally connected to the rear upright **11** by means of the pin **18**, said lever being formed similar to the bottom bar **8**, and the free end **19** is also cylindrical in shape, said cylindrical section being hollow and internally threaded as at **20** to accommodate the shank **21** of an upper die head **22**, said die head being adjustably mounted in the opening **20** as shown.

The lever **17** is normally held in raised position by means of a spring **23**, placed between uprights **9** and interposed between the bottom bar **8** and the lower face of the lever **17**, and a cam lever **24** is pivotally connected to the upper ends of the uprights **9** by means of the pin **25**, said lever being formed with a cam-shaped end section **26** for engagement with the upper edge of the upper die lever **17**, and a laterally projecting stop pin **27** is mounted in said cam lever for engagement with the seat **28** formed in the edge of the upright **9** to limit downward swing of said cam lever, all as indicated in solid lines in Fig. 1 of the drawing.

The cam lever **24** is held in its normal raised position by means of the spring **23**, and said spring is concealed by the uprights **9**, these uprights further preventing snagging of the material on the spring or pinching the operator's fingers either through contact with the cam-shaped end of the lever or the spring.

Quickly attachable adaptors A are provided for attachment to the die heads **16** and **22**, each adaptor being formed with a centrally disposed opening **29** in the face thereof to snugly receive the particular snap being used, and resilient fingers **30** are provided on each adaptor so that they resiliently engage the die head to hold said adaptors in position, and these various adaptors can be easily and quickly removed and applied.

In operation of the device, the operator first places one section of the fastener element F in the opening **29** provided in the adaptor A; then places the companion section of the fastener element in the adaptor (shown in dotted lines) on the upper die head. The cloth C is then inserted between the adaptors A on the upper and lower die heads, after which the lever **24** is swung down, clinching the sections firmly together on the cloth.

While in the present instance I have shown the frame of the tool formed of strap or bar metal, it will, of course, be understood that it can be cast or formed in any other desired manner.

From the foregoing description, it will be obvious that I have perfected a very simple, practical and inexpensive attaching tool for attaching snap fasteners of all kinds.

What I claim is:

1. In a tool for clinching the separate portions of separable units of snap fasteners, the combination with a base and a member mounted thereover and movable downwardly in a vertical plane toward said base, of a die head in said base having a flat upper surface, an oppositely disposed flat die head on said member in vertical alignment with the die head in said base when the member is moved down toward the base, and adaptors having substantially tangentially disposed, axially projecting, resilient fingers for gripping said die heads mounted thereon, said adaptors having openings therein for accommodating and centering the separate portions of one unit of a snap fastener.

2. In a tool for clinching the separate portions of the separable units of snap fasteners, the combination with a base and a member mounted thereover and movable downwardly in a vertical plane toward said base, of a flat die head in said base, an oppositely disposed flat die head on said member in vertical alignment with the die head in said base when the member is moved down toward the base, and flat adaptor plates on said die heads, said plates having perimetrally disposed, resilient fingers projecting substantially perpendicularly from said plates, said plates having openings therein for accommodating and centering the separate portions of one unit of a snap fastener, and means for holding said member in up position after it has been moved downwardly to said base to bring said portions of said unit of a snap fastener

into clinching relation to secure them to a fabric interposed therebetween and has been returned to up position.

3. A device for attaching separable snap fasteners to materials comprising a frame including a bottom bar, a vertical upright secured to one end of said bottom bar, brackets secured to the bottom bar, a lever pivotally secured to the upper end of the upright, a flat die head mounted on one end of said bottom bar, a second die head on the free end of said lever in vertical alignment therewith, annular adaptor members having tangentially disposed, axially projecting fingers for gripping said die heads mounted on the die heads, said adaptors having bored openings to releasably accommodate the sections of one portion of a separable snap fastener, eccentric handle means on said bracket bearing on said lever for swinging said lever to bring the die heads into clinching relation with the separable fastener elements, a shoulder formed on said brackets, and a protruding pin on said handle means engageable therewith to limit the downward swing of said handle means past a predetermined point.

4. In a tool for clinching the separate portions of the separable units of snap fasteners, the combination with a base and a lever pivotally mounted thereover and having a free end swingable downwardly to engage said base, of a vertically disposed, flat die head in said base, an oppositely disposed flat die head in said lever in vertical alignment with the die head in said base when the free end of the lever is swung down toward said base, and adaptor plates on said die heads, said plates having perimetrally disposed, resilient fingers projecting substantially perpendicularly from said plates for gripping said die heads, said plates having openings therein for accommodating and centering the separate portions of one unit of a snap fastener, and means for swinging said lever downwardly into engagement with said base to bring said portions of the one unit of a snap fastener into clinching relation and thereby to secure them to a fabric interposed between them.

5. In a tool for clinching the separate portions of the separable units of snap fasteners, the combination with a base and a lever pivotally mounted thereover and having a free end swingable downwardly to engage said base, a vertically disposed flat die head in said base, an oppositely disposed, flat die head in said lever in vertical alignment with the die head in said base when the free end of the lever is swung down toward said base, and annular adaptors having substantially tangentially disposed, axially projecting, resilient fingers for gripping said die heads mounted thereon, said adaptors having openings therein for accommodating and centering the separate portions of one unit of a snap fastener, and means for swinging said lever downwardly into engagement with said base to bring said portions of the one element of a snap fastener into clinching relation and thereby to secure them to a fabric interposed between them.

6. In a tool for clinching the separate portions of the separable units of a snap fastener, the combination with a base and a lever pivotally mounted thereover and having a free end swingable downwardly to engage said base, a vertically disposed bolt in said base and an oppositely disposed bolt in said lever in vertical alignment therewith when the free end of said lever is swung downwardly toward said base, and annular adaptors having substantially tangentially disposed, axially projecting, resilient fingers for gripping said bolt heads mounted thereon, said adaptors having openings therein for accommodating and centering the separate portions of one unit of a snap fastener, and means for swinging said lever downwardly into engagement with said base to bring said portions of the one unit of a snap fastener into clinching relation and thereby secure them to a fabric interposed between them.

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