United States Patent

Minasy

[15] **3,656,679**

[45] **Apr. 18, 1972**

[54] LABEL ATTACHMENT

[72] Inventor: **Arthur J. Minasy**, 21 Elm Street, Woodbury, N.Y. 11797

[22] Filed: **Feb. 7, 1970**

[21] Appl. No.: **6,004**

Related U.S. Application Data

[62] Division of Ser. No. 599,922, Dec. 7, 1966.

[52] **U.S. Cl.** **227/144**
[51] **Int. Cl.** **B25c 1/00**
[58] **Field of Search** 227/144; 30/109

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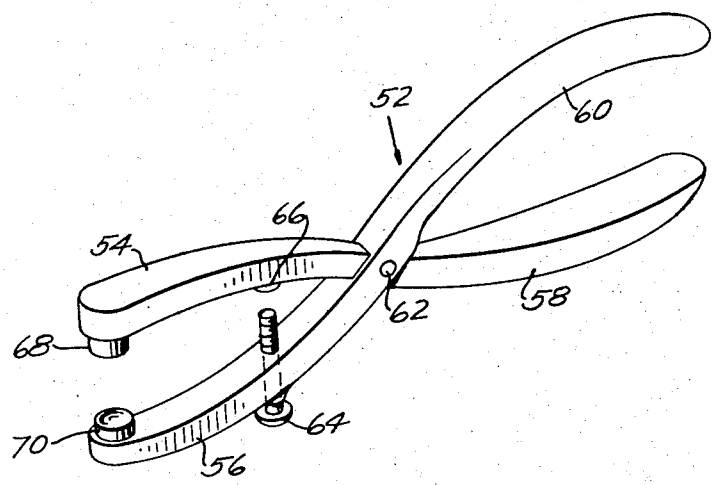
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Primary Examiner—Granville Y. Custer, Jr.
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[57] **ABSTRACT**

A label attachment arrangement comprising a tack-like element whose shank passes through a label and an article of merchandise. The shank is encased by and interlocked in a button. A plier-like attachment tool and a cutting tool for label removal.

2 Claims, 16 Drawing Figures



PATENTED APR 18 1972 3,656,679

SHEET 1 OF 3

Fig. 1.

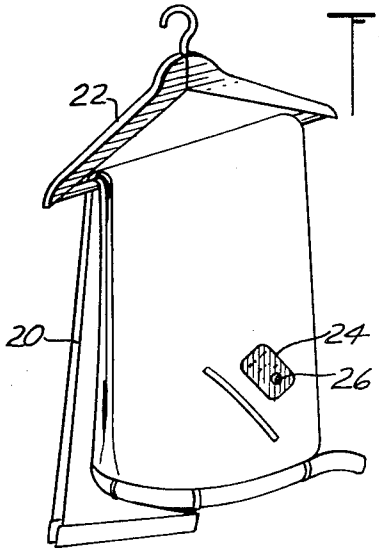


Fig. 2

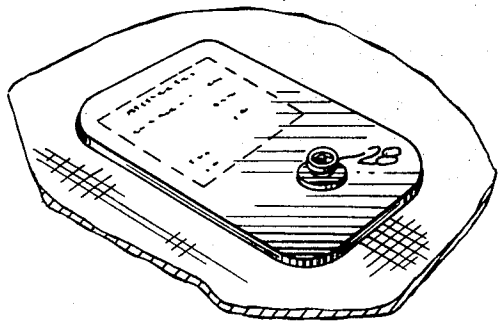


Fig. 5.

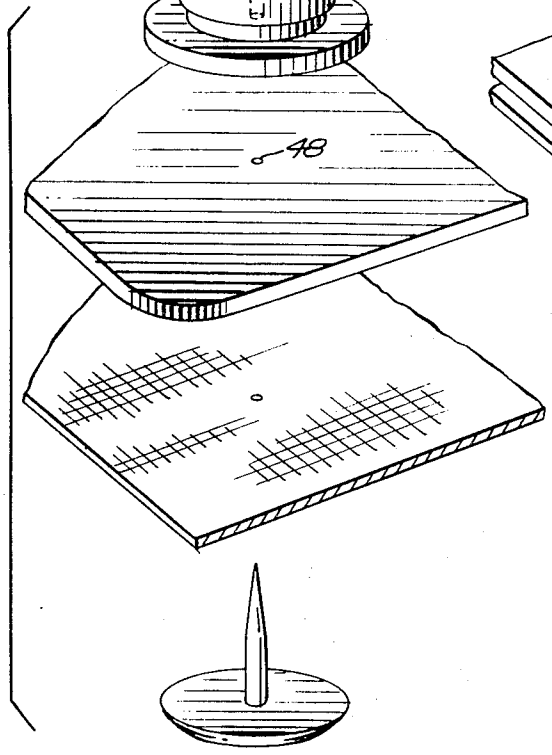


Fig. 3.

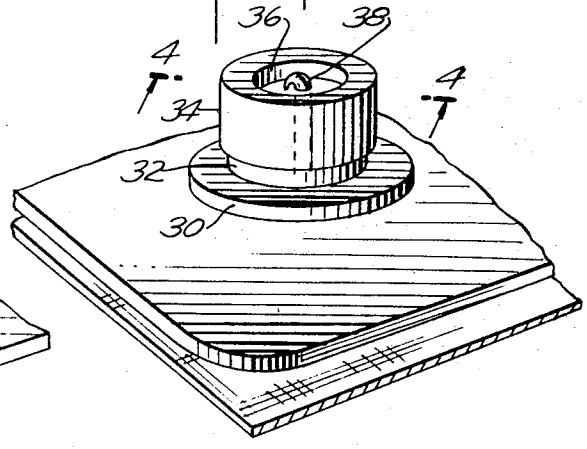
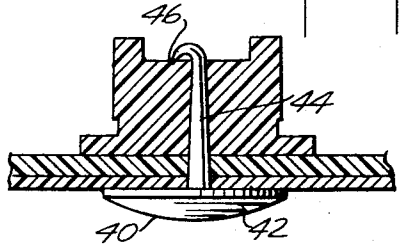


Fig. 4.



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Fig. 6.

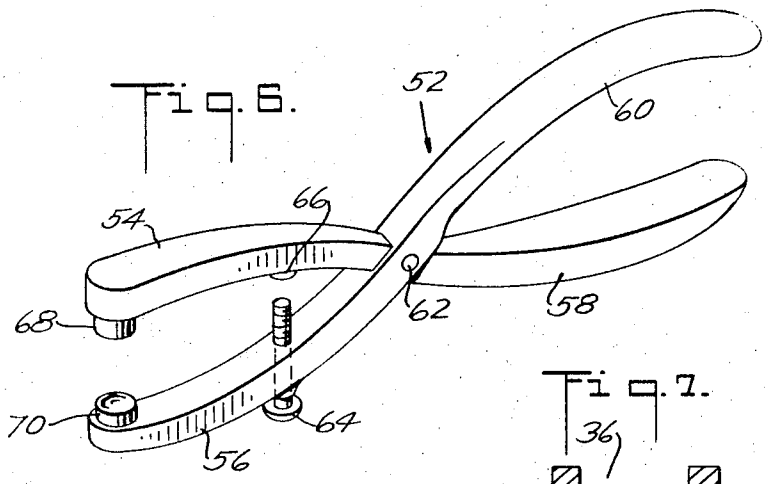


Fig. 7.

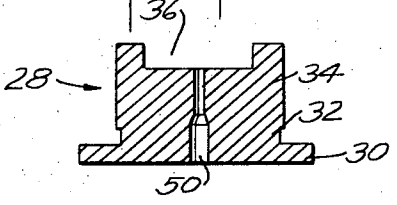
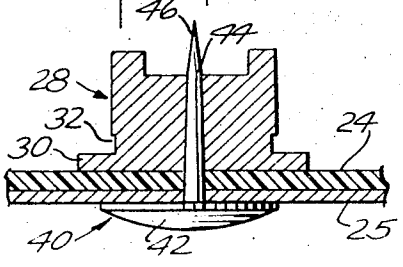
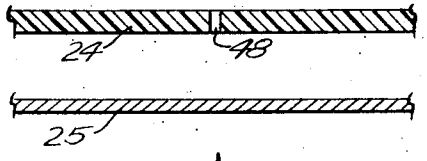


Fig. 8.





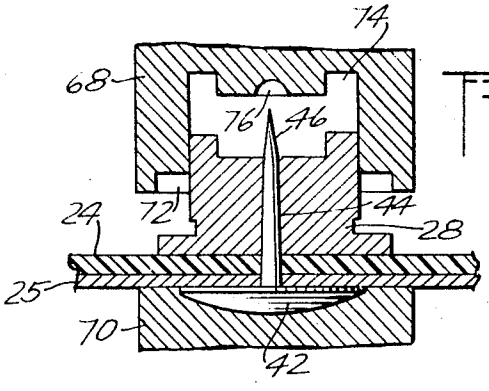


Fig. 9.

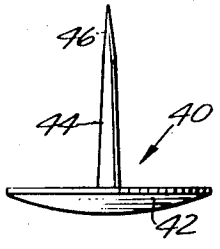


Fig. 11.

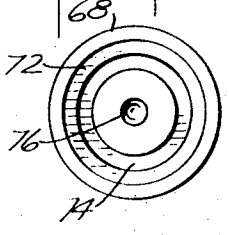
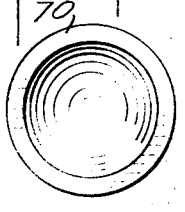


Fig. 12.



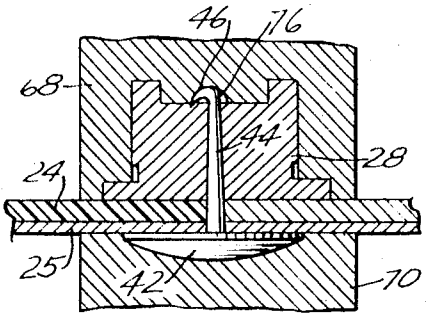


Fig. 10.

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Fig. 13.

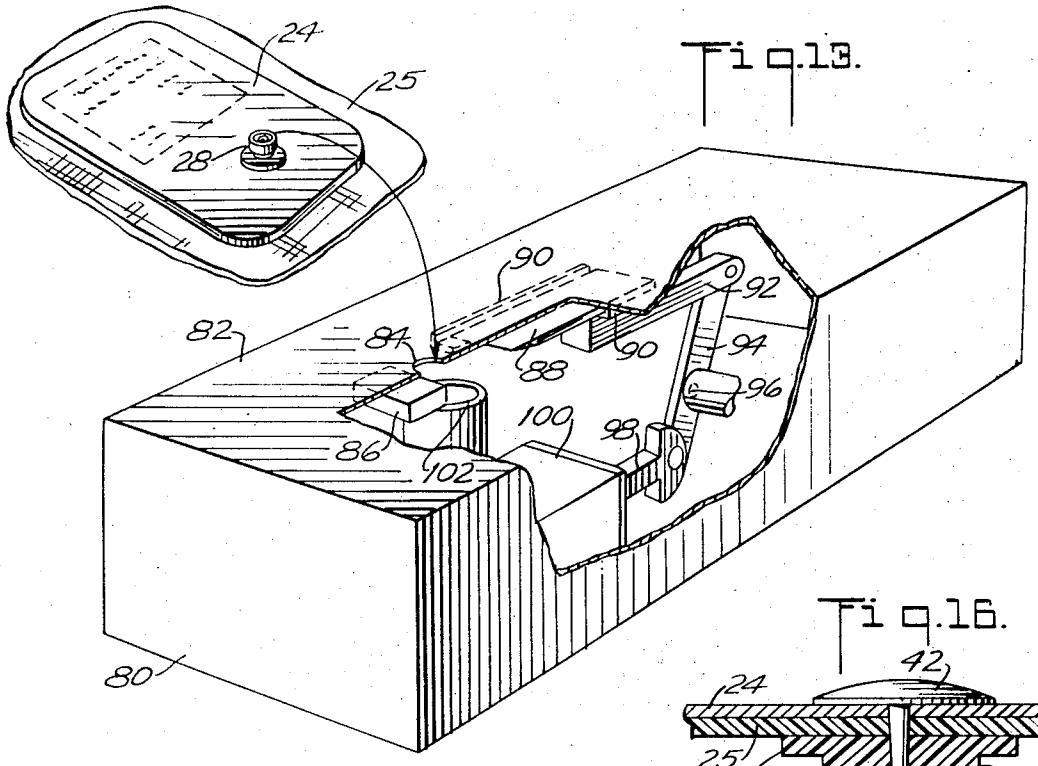


Fig. 16.

Fig. 14.

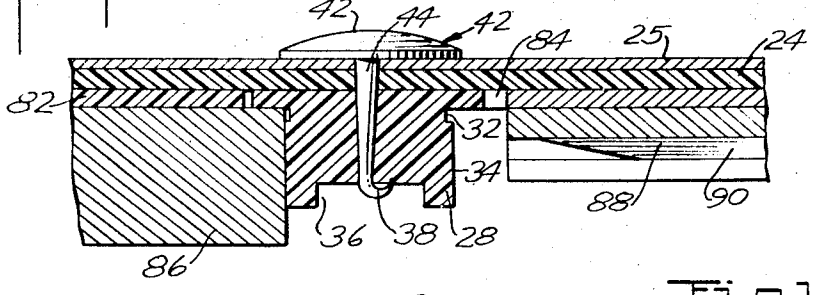
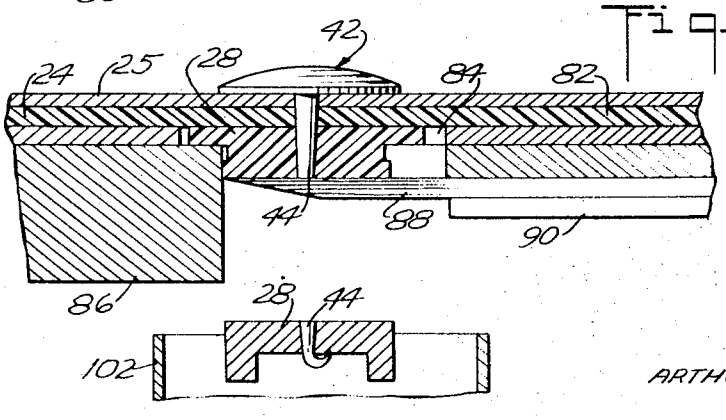


Fig. 15.



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LABEL ATTACHMENT

This is a divisional application of U.S. application Ser. No. 599,922 filed Dec. 7, 1966.

The foregoing "Abstract of the Disclosure" is solely for the purpose of enabling the Patent Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure, and the abstract shall not be used for interpreting the scope of the claims.

This invention relates to the fastening of articles and more particularly it concerns the attachment and removal of labels to and from certain articles of merchandise.

In retail marketing operations, goods to be sold are generally exposed to the public for personal observation and inspection. In many cases these goods are taken personally by a prospective purchaser from a display or supply counter over to a checkout stand or desk where the purchase is made. At the time of purchase, the store label is removed, thus indicating that the article is now the property of the purchaser.

A problem arises in connection with the use of labels. This problem involves the provision of a label which is inexpensive, or at least which is inexpensively secured to the articles of merchandise, and which at the same time is not susceptible to removal by a would-be shop-lifter. Conventional label fastening means, which are not inordinately expensive, can easily be broken off by small inexpensive tools such as knives, files, sissors, stable removers and the like.

According to the present invention there are provided arrangements for inexpensively fastening labels to articles of merchandise in such a manner that the labels cannot be removed except by means of a special large scale apparatus or except by severely damaging the article itself.

The label attachment arrangement of the present invention comprises a first tack-like fastening element having a broad, expansive, and substantially flat, head with a wire shank extending downwardly therefrom. The shank is passed through a thin sheet-like portion of the article of merchandise, (e.g., the fabric of an article of clothing). The shank then passes through a hole in the label and finally through a plastic button. The shank tip is then bent back and is embedded in the plastic button in a manner such that the shank is held in fishhook manner to the button with the button drawing up tightly with the label, the thin sheet-like portion of the article of merchandise and the head of the tack-like element. With this arrangement, the only way labels can be removed without destroying the article of merchandise is to sever the shank. However, no portion of the shank is exposed and in order to sever it, the plastic button also must be severed. Because of the large diameter of the button, simple plier-like cutting tools will not suffice and the button must be supported in a jig which holds it solidly while a knife-like blade is forced through it.

The present invention also involves the attachment and detachment of the label; these operations involving the use of novel tools hereinafter described in detail.

For attaching the label there is provided a large plier-like tool, one jaw of which is formed to accommodate the exposed surface of the head of the tack-like fastening member, and the other jaw of which is formed as an anvil with a curved surface. This curved surface, when pressed against the point of the shank of the tack-like fastening element, causes the point to bend around and back into the plastic button. Further squeezing embeds the shank tip into the button while at the same time it tightly squeezes the article of merchandise, the label and the plastic button together against the head of the tack-like fastener so that the label will be held securely in place.

For removing the label without destroying the article of merchandise, the attached label is laid on a surface having an opening therethrough which closely accommodates the button. A knife blade is guided for lateral movement just under the surface so that it passes through the button and through the shank. The upper part of the button is then removed and the tack-like fastener is withdrawn from the article and from the label.

There has thus been outlined rather broadly the more important features of the invention in order that the detailed description thereof that follows may be better understood, and in order that the present contribution to the art may be better appreciated. There are, of course, additional features of the invention that will be described hereinafter and which will form the subject of the claims appended hereto. Those skilled in the art will appreciate that the conception upon which this disclosure is based may readily be utilized as a basis for the designing of other structures for carrying out the several purposes of the invention. It is important, therefore, that the claims be regarded as including such equivalent constructions as do not depart from the spirit and scope of the invention.

Specific embodiments of the invention have been chosen for purposes of illustration and description, and are shown in the accompanying drawings, forming a part of the specification, wherein:

FIG. 1 is a perspective view showing a label attachment arrangement according to the present invention;

FIG. 2 is an enlarged fragmentary view of the label attachment arrangement of FIG. 1;

FIG. 3 is a further enlarged perspective view illustrating a portion of a fastening means utilized in conjunction with the label attachment arrangement of FIGS. 1 and 2;

FIG. 4 is a section view taken along lines 4—4 of FIG. 3;

FIG. 5 is an exploded perspective view illustrating the assembly of elements making up the label attachment arrangement of FIGS. 1–4;

FIG. 6 is a perspective view of a tool used in attaching a label to an article of merchandise according to the present invention;

FIGS. 7–10 are section views illustrating a succession of steps used in attaching a label to an article of merchandise according to the present invention;

FIGS. 11 and 12 are plan views showing, respectively two anvil portions of the tool of FIG. 6;

FIG. 13 is a perspective view, partially cut away, illustrating a tool used in removing a label according to the present invention;

FIG. 14 is a fragmentary section view taken along lines 14—14 of FIG. 13 and showing an attached label in place just prior to actuation of the tool of FIG. 13;

FIG. 15 is a view similar to FIG. 14 showing the tool subsequent to actuation; and

FIG. 16 is a view showing the label arrangement following operation of the tool of FIG. 13.

In FIG. 1, an article of merchandise, such as a pair of trousers 20, are shown hung over a hanger 22. The trousers 20 may thus be set out for display in a retail establishment for perusal and inspection by prospective customers. Information concerning brand name, size, type of material and price of the trousers, is presented on a label 24 which is secured to the trousers 20 by means of a label attachment arrangement indicated at 26. The label 24 thus serves the dual function of (a) providing the customer with pertinent information and (b) of identifying the trousers 20 as being unsold. At the time of sale, the label 24 is removed, thus indicating that the trousers 20 are now the property of the purchaser.

As shown in FIG. 2, the label 24 is held to a layer 25 of fabric material forming a portion of the trousers 20. The label 24 is secured to the trousers by means of the label attachment arrangement 26. Only a portion of this label attachment arrangement is visible in FIG. 2.

The label attachment arrangement 26 includes a button 28 which rests against the outer surface of the label 24. As shown in FIG. 3, the button 28, which may be made of a plastic material, for example, Delrin (registered trademark) or some other high density thermoplastic material, is shaped with an expansive flange 30 which rests flat against the outer surface of the label 24. A recess 32 is formed about the outer surface of the button 28 immediately adjacent the expansive flange 30. The button 28 extends out beyond the recess 32 with a central recess 36. As can be seen in FIG. 3, a bent-over por-

tion 38 of a metal shank forming a cooperative fastening element, is located within the recess 36.

Each of the parts forming the label attachment assembly 26 can be seen in the section view of FIG. 4. As there shown, there is provided a tack-like fastener element 40 having a generally flat expansive head portion 42, and a wire-like shank portion 44 extending centrally therefrom. The shank portion 44, as shown, passes through the fabric layer 25, the label 24, and the button 28. The shank portion 44 is formed with a pointed tip 46 which is bent back around and is forced into the plastic material of the button 28 within its central recess 36. Thus only the bent-over portion 38 of the shank is visible inside the central recess 36. The tack-like element fastener 40 is thus secured in fishhook fashion to the button 28.

This arrangement secures the label 24 and fabric layer 25 tightly together in a manner such that under normal handling neither is likely to be damaged. This is because the expansive head 42 of the tack-like fastener element 40 and the expansive flange 30 of the button 28 distribute pressure over a rather large area of the fabric layer 25 and the label 24. Moreover, the label 24 cannot be removed from the fabric material 25 with conventional hand tools such as knives, sissors and the like, without destroying either or both the label 24 and fabric material 25. This is because the entire shank portion 44 is covered by the button 28; and only by severing the button 28 itself, can the shank 45 be cut. However the large diameter of the cylindrical portion 34 of the button 28, together with its high density low friction plastic quality render it nearly impossible to sever except by supporting it in a special jig and applying a heavy cutting force in a particular direction.

FIG. 5 illustrates the manner in which the various elements making up the attachment assembly 26 are put together. As shown in FIG. 5, the tack-like fastener element 40 is caused to pierce the fabric layer 25. It then passes through an opening 48 formed in the label 24 and finally passes through a central opening 50 formed through the button 28. Thereafter the various elements are squeezed together in their configuration as shown in FIG. 4 and the pointed tip 46 of the tack-like fastener element 40 is bent over and embodied into the button 28 within its central recess 36.

The tool for forming the label attachment arrangement described above is shown in FIG. 6. This tool, illustrated generally at 52, is basically a plier-like device comprising upper and lower jaw elements 54 and 56 integrally connected, respectively, with associated lower and upper handgrips 58 and 60. A pivot pin 62 is provided where the handgrips are connected to their associated jaw elements. By squeezing the handgrips 58 and 60, the jaw elements 54 and 56 may be made to close upon each other. The position of the pin 62 establishes the mechanical advantage or closing force which may be exerted on the jaw elements 54 and 56. A jaw closure adjustment pin 64 is threaded through the lower jaw element 56 and is aligned with an abutment 66 on the upper jaw element 54. By turning the adjustment pin 64, the minimum jaw opening, (i.e., the displacement of the jaws when the pin 64 touches the abuttment 66), can be varied. This permits the device to accommodate different size label attachment elements.

Upper and lower anvil elements 68 and 70 are attached in mutually facing positions near the tips of the upper and lower jar elements 54 and 56 respectively. The anvil elements 68 and 70 have specially shaped facing surfaces which serve to form the bent over portion 38 of the tack-like fastener element 40 in such a manner that the cylindrical button 28 will urge the label 24, the fabric layer 25 of the trousers 20, and the head portion 42 of the tack-like fastener element 40 together in mutually squeezing arrangement.

FIG. 7 illustrates the arrangement of the label, fabric material of the trousers and the fastener elements in their relative positions immediately prior to attaching the label 24 to the trousers 20. As shown in FIG. 7, the shank portion 44 of the tack-like fastener element 40 is positioned so that it will first of all pierce the fabric layer 25 of the trousers 20, and will thereafter pass through the opening 48 in the label 24 through the central opening 50 in the button 28. The parts in this partially assembled condition are illustrated in FIG. 8. It will be noted that in this arrangement, the pointed tip 46 of the tack-like fastener element is entirely clear of the central opening 50 in the button 28 and proceeds out from the recess portion 36 of the button. Thereafter, as shown in FIG. 9, the tool 52 is placed into position with its upper and lower anvil elements 68 and 70 resting respectively on the button 28 and on the head portion 42 of the tack-like fastener element 40. As shown in FIG. 9, the lower anvil element 70 is contoured to receive the head portion 42 of the tack-like fastener element 40 in such a manner as to support it securely in fixed position while at the same time allowing the fabric layer 25 and the label 24 to be urged closely against the underside of the head portion 42. The configuration of the upper anvil element 68 on the other hand includes a pair of cylindrical recesses 72 and 74 which accommodate respectively the expansive flange 30 and the cylindrical portion 34 of the button 28. Additionally, the upper anvil element 68 is provided with a centrally positioned rounded recess 76 which is engaged by the pointed tip 46 of the tack-like fastener element 40. Thereafter, when the jaws 54 and 56 of the tool 52 are closed upon each other to bring the anvil elements 68 and 70 even closer together, the rounded recess 76 in the upper anvil element causes the pointed tip 46 of the tack-like fastener element 40 be bent around and to become embedded back into the button material.

It will be noted from the above that with a single, simple operation a very secure label attachment arrangement may be effected; and such arrangement will very securely hold a label to an article of merchandise without destroying or damaging the merchandise. On the other hand, should any attempt be made to remove the label from the merchandise, it would be necessary either to tear the fabric or otherwise damage or destroy either the merchandise or the label. The only way to remove the label without damage is to sever the shank 44 of the tack-like fastener element 40. However, because of the configuration of the attachment assembly, it becomes necessary first to sever the button 28 in order to gain access to the shank portion 44. This is very difficult to accomplish with conventional hand held tools however, because the button 28 is too hard and smooth to permit application of sufficient force for cutting. The knife or tool merely slips around when heavy pressure is applied between it and the button.

FIGS. 13–16 illustrate the manner and means by which the label 24 may be removed from the trousers 20 without destroying or damaging either of these elements. As shown in FIG. 13, there is provided an enclosure 80 having an upper surface 82 which may form a portion of a counter or desk used by a sales clerk. The upper surface 82 is formed with a round opening 84 which closely accommodates the exposed portion of the button on an attached label 24. Just under the surface 82, and immediately behind the opening 84, there is provided an abutment block 86. When the label 24 is placed flat against the surface 82 with the button 28 protruding down into the opening 84, the cylindrical surface 34 of the button becomes laterally supported by the block 86.

There is additionally provided a knife-like cutter element 88 which is guided in ways 90 for back and forth movement across the opening 84, immediately under the upper surface 82. The cutter element 88 is mounted on a connecting rod 92 which in turn is pivotally connected at one end to a crank rod 94. The crank rod 94 is centrally pivoted at a fixed pivot point 96. The opposite end of the crank rod 94 is connected to the armature 98 of a solenoid 100 mounted within the enclosure 80. When the solenoid is energized by actuation of various switch means (not shown), the armature 98 will move forwardly causing the crank rod 94 to pivot and this in turn will move the cutter element 88 across the opening 84. The effect of this is shown in FIGS. 14 and 15. As seen in FIG. 14, the label 24 with the button 28 and tack-like fastener element 40 in their assembled condition is placed on the upper surface 82

of the enclosure **80** with the exposed portion of the cylindrical button **28** extending down into the opening **84**. As can be seen in FIG. **14**, the cylindrical outer surface **34** of the button **28** rests against and is supported by the abutment block **86**. The cutter element **88** as shown in FIG. **14** is in its retracted condition. However, when the solenoid **100** is energized, the cutter element **88** moves toward the button **28** and passes through it as illustrated in FIG. **15**, thereby severing the button and a portion of the shank **44** as it does so. The thus severed portions of the button **28** and the shank **42** drop into a dispoal chute **102**. Thereafter the label arrangement is removed as illustrated in FIG. **16** and remaining portion of the cylindrical button **28** is easily slipped off from the severed shank **44** of the tack-like fastener element **40**. Thereafter the fastener element **40** may be removed from the material of the trousers **20** and from the label **24** without damaging either of these elements.

The label **24** may thereafter be reused on other articles of merchandise inasmuch as the fastening arrangement of the present invention also protects the label itself from damage. This is an important consideration and allows the use of more expensive labels of plastic and laminated materials. For example, such labels may be outfitted with embedded electronic circuits as described in co-pending applications Ser. No. 437,383 filed Mar. 5, 1965 and Ser. No. 548,314 filed May 6, 1966. These labels, when not removed from the articles, secure electronically to actuate alarms when the merchandise bearing the label is attempted to be removed from the premises. Since the labels are rather expensive and their removal would be important to a potential shoplifter, the label attachment and detachment arrangements of the present invention are especially desirable.

Having thus described my invention with particular reference to the preferred form thereof, it will be obvious to those skilled in the art to which the invention pertains, after understanding my invention, that various changes and modifications may be made therein without departing from the spirit and scope of my invention, as defined by the claims appended thereto.

What is claimed as new and desired to be secured by Letters Patent is:

1. A tool for attaching labels to a fabric layer, said tool comprising upper and lower jaws, means mounting said jaws in a manner such that they may be squeezed together, a first anvil on one said jaw and having a surface facing the other jaw shaped to accommodate the expansive head of a tack-like fastener element to be mounted on one side of said fabric layer while allowing said fabric layer to be urged closely against the underside of the head portion, a second anvil on said other jaw and having an outer cylindrical recess facing said first anvil for receiving a thick cylindrically shaped button element to be mounted on the other side of said fabric layer, and through the center of which the shank of said fastener element projects, and an inner curved recess formed centrally within said outer recess to be engaged by and to bend back the pointed tip of such tack-like fastener element and embed it in said button element while said jaws are closed to force said heat portion and said button element into mutually squeezing arrangement with said fabric layer and said label held tightly therebetween.

2. A tool as in claim **1** wherein said means mounting said jaws comprises a plier-like tool having handles extending from said jaws, said handles being pivotally interconnected, and further including adjustable spacer means limiting the minimum spacing of said anvils.

* * * * *