Nov. 29, 1949 I. E. HELLER 2,489,640

METHOD OF MARKING LAYERS OF MATERIAL

Filed Jan. 22, 1946

Fig. 1

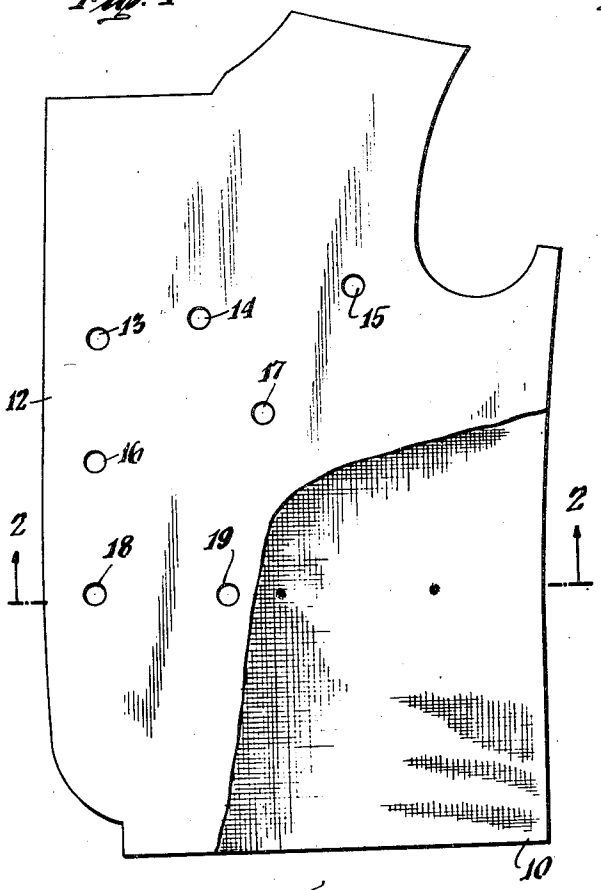



Fig. 2

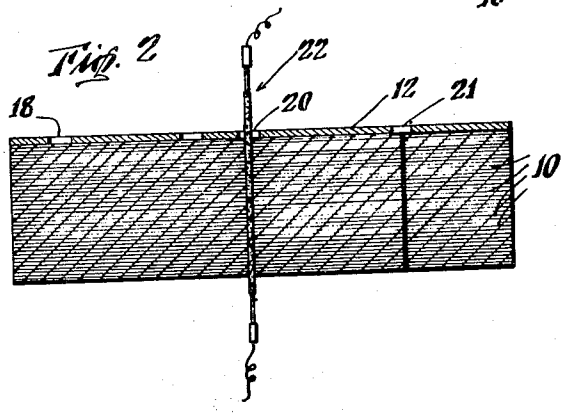



Fig. 3

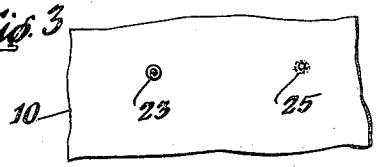



Fig. 4

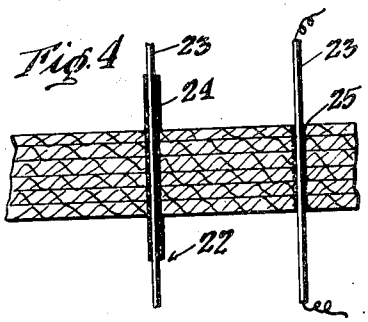



Fig. 5

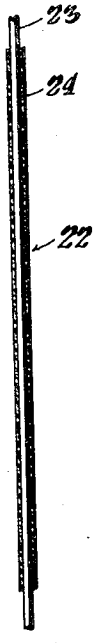



Fig. 6




Fig. 7




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## METHOD OF MARKING LAYERS OF MATERIAL

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1 Claim. (Cl. 101—32)

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This invention relates to the field of position marking in connection with fabrics or other material. In its major application, the invention relates to the position marking device as well as a method thereof especially useful in the marking of positions for seams, pockets, buttons, etc., during the process of making garments.

In the manufacture of men's and women's clothing, as well as the manufacture of many other articles from cloth, fabric or similar material, it is customary to stack layers of material and then cut them to proper size and shape.

In order for the operators to subsequently handle this material, to stitch and place buttons, fasteners and the like at the correct places as required, it has been customary to mark these positions in some manner.

Generally this is accomplished by a process known as "stitch marking." This process consists of drawing a soft cotton yarn through the plies of material when they are in their stacked position. The operator then pulls this cotton yarn and cuts it between each of the layers. This then leaves a thread which protrudes or extends on either side of a ply of material, which thread is left in place to indicate where buttons, etc., are to be sewn.

The need for a position marking device and method to improve the heretofore slow and tedious processes has long been felt and it is precisely the answer to this problem which I have achieved by my invention.

In general, my invention consists in utilizing heat to melt and thus deposit upon the layers of cloth a suitable marking substance at each of the positions. The achieving of this marking in a simple and efficient manner constitutes a very great saving of time and expense.

While I propose to discuss my invention in connection with the position marking of garments, it should be recognized that the application of this invention to related fields is within the scope thereof and except as required by the appended claim, no limitations are intended by means of the description as applied to garment making.

The invention may be more clearly understood by reference to the accompanying drawings in which—

Fig. 1 is a plan view of a stack of cloth with a cutting and marking pattern in place;

Fig. 2 is a cross section taken along the lines 2—2 of Fig. 1, with a position marking device in place;

Fig. 3 is an enlarged plan view showing the position marking devices;

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Fig. 4 is a vertical cross section corresponding to Fig. 3;

Fig. 5 is an enlarged cross section of the type of position marking device shown in Figs. 1 to 4;

Fig. 6 is an enlarged cross section of a modified position marking device, and

Fig. 7 is an enlarged cross section of a further modified position marking device.

As shown in Figs. 1 and 2, a large number of layers of cloth 10 are superimposed one on the other forming a pile which is to be cut to size and properly marked. A suitable pattern 12, formed of paper, plastic or other substance, is placed on the top of the pile. The pile of fabric is cut to the line of the pattern 12, after which the proper marking of the various positions formed by the holes 13, 14, 15, 16, 17, 18 and 19, 20 and 21 as shown in the pattern is necessary.

Hole 20 is illustrated in Fig. 2 with the position marking device, generally referred to as 22, in position and ready for application of heat. Hole 21 is shown empty and the fabric in line with the hole is shown as marked due to the operation of the position marking device which had been previously inserted in that hole.

One form of the position marking device itself is shown in enlarged view Fig. 5. It consists essentially of a conducting wire 23 having suitable resistance for conducting the electricity intended to be conveyed and raising the temperature sufficiently to deposit the marking substance. Coated on this wire is a marking substance 24 which has a color to contrast with the color of the fabric through which the position marking device is to be inserted and which is composed of a substance having a suitably low melting point so that upon application of heat by means of the conductor 23 or otherwise, this substance will melt and be deposited upon the fabric without scorching the fabric. While many substances will be suitable for the purposes of this invention, wax or paraffin have the necessary and desirable properties required and may be used.

Conductor 23 may be sufficiently rigid so that of itself and without a further lead member it can be pressed through the pile of fabric. On the other hand, if conductor 23 is of a very fine and flexible type material, it can be threaded through the fabric layers by other means as for example, a needle.

While the application of heat by means of electrical resistance is the preferred manner of carrying out my invention, I also recognize that the depositing of the marking material can be ob-

tained by heat applied by steam, hot air or other similar means within the scope of my invention.

Referring now to Fig. 4, I have illustrated on the left hand side of the figure the position marking device 22 prior to the application of current thereto and the device on the right hand side after the current has been applied. As will be observed at 25, the coating has been melted and deposited on the fabric as a result of heat created by the resistance to the current flowing through wire 23. Being of a color in contrast to the fabric, it is obvious that upon removal of the wire the proper marking of the position 21 of the pattern has occurred. This marking, which is of a semi-permanent nature, is on both faces of the layers of fabric for ready handling by the operator. Whereas in the marking by means of cutting threads it is always possible for a thread to pull or fall out and thus have a loss of position, the present marking by means of a substance deposited on the material has the characteristics of semi-permanency. As a result, no delays due to a loss of position marking occur.

Alternative forms of utilizing my basic development for position marking are shown in Figs. 6 and 7. In Fig. 6, a twisted thread or cord 26 which in and of itself is a non-conductor is coated with an electrical conducting substance 27, which also contains a colored pigment or marking substance of low melting point such that upon the application of current to the strand the electricity is carried in the coating, which is either on the surface or which may be impregnated directly into the cord 26. The depositing of the marking substance on the material occurs as previously described.

In Fig. 7, a fine metallic wire 28 is twisted with an impregnated cord 29 into a suitable thread for drawing through the layers of fabric. The cord 29 is impregnated with a substance of sufficiently low melting point such that upon passage of current through the wire 28 this substance is melted and deposited on adjacent material. As in all of the previous discussions, the color of the pigments is such as to contrast with the material on



which they are deposited so that a proper position marking occurs.

It is thus to be seen that in any form of my invention, only the application of heat is required to get instantaneous position marking on both faces of each layer of a large pile of fabric or other material through which my position marking device has been inserted.

Having then described my invention, what I desire to cover is as in the following claim.

I claim:

A method of marking plies of material comprising inserting through said plies a thin electrical conductor carrying a suitably colored pigment of low melting point, applying a current to said conductor, thereby melting and depositing said pigment on said plies of material.

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## REFERENCES CITED

The following references are of record in the file of this patent:

### UNITED STATES PATENTS

| Number | Name | Date |
|---|---|---|
| 71,688 | Bishop | Dec. 3, 1867 |
| 514,460 | Hayward | Feb. 13, 1894 |
| 597,373 | Green | Jan. 11, 1898 |
| 681,121 | Hudson | Aug. 20, 1901 |
| 1,363,897 | Morgans | Dec. 28, 1920 |
| 1,374,329 | Smith | Apr. 12, 1921 |
| 1,771,399 | Christophel | July 29, 1930 |
| 1,977,460 | Thompson | Oct. 16, 1934 |
| 2,004,041 | Driver | June 4, 1935 |
| 2,032,047 | Burke | Feb. 25, 1936 |
| 2,047,373 | Kingsley | July 14, 1936 |
| 2,118,718 | White | May 24, 1938 |
| 2,135,228 | Wolkan | Nov. 1, 1938 |
| 2,231,766 | Leibowitz | Feb. 11, 1941 |
| 2,347,333 | Phillips | Apr. 25, 1944 |

### FOREIGN PATENTS

| Number | Country | Date |
|---|---|---|
| 547,481 | Great Britain | Aug. 28, 1942 |