April 25, 1944. S. H. PHILLIPS 2,347,333

MARKING TOOL

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Fig. 1.

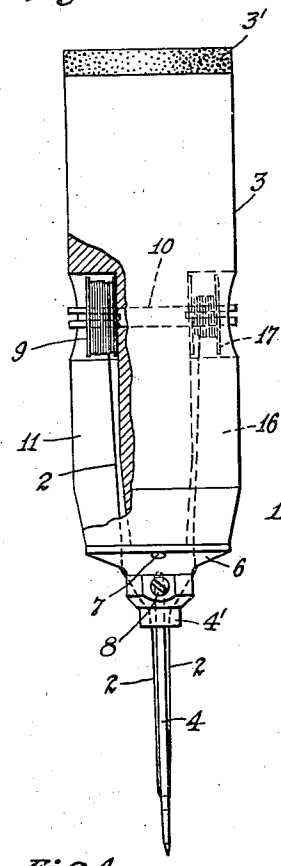


Fig. 2.

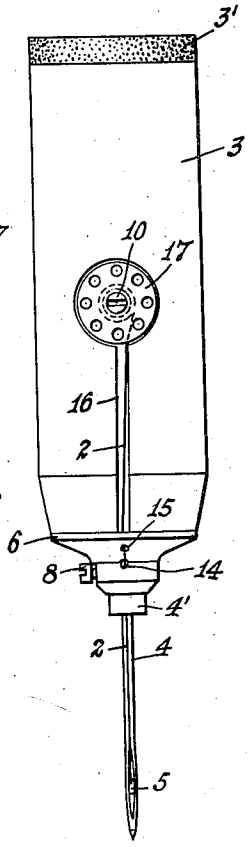


Fig. 3.

Fig. 4.

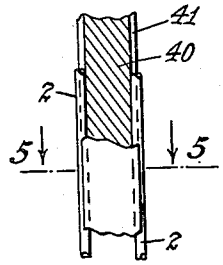
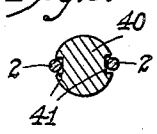


Fig. 5.



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Fig. 7.

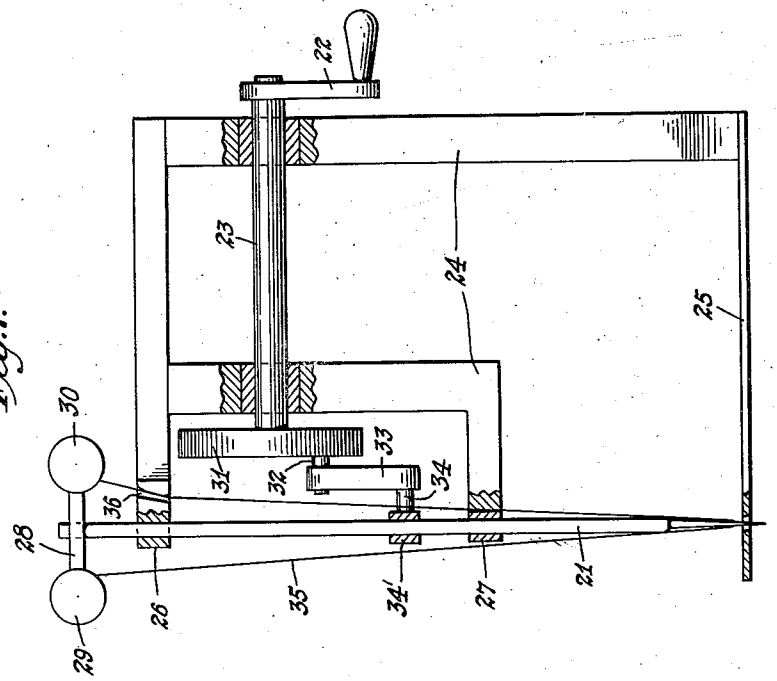
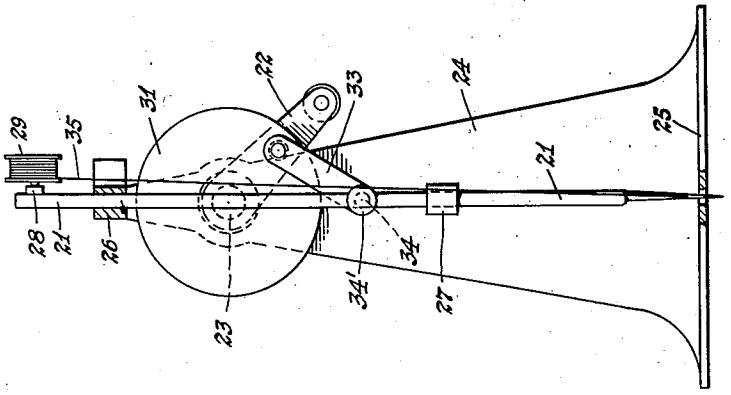


Fig. 6.



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UNITED STATES PATENT OFFICE

2,347,333

MARKING TOOL

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Application June 26, 1942, Serial No. 448,574

12 Claims. (Cl. 101—26)

This invention relates to the marking of material. It was developed in conjunction with the marking of multiple layers or pieces of cloth intended for assembly into garments, and will be particularly described in that connection; although, as hereinafter further noted, it may be applied to the marking of materials of widely varying types.

Where piles of material are cut to patterns or from a marked lay, for subsequent assembly into an article such as a garment; it is desirable that the identity of each of the cut pieces be clearly indicated; and to avoid confusion it has long been the custom to punch holes in the different piles to indicate, for example, which pieces are to be "top and left," "piece No. 1," "piece No. 2," etc., in the assembled garments. Punched holes are also used to indicate, for the information of the assembling operators, the location of ornaments to be sewed on to the material, buttons, lines for reinforcing strips, hems, folds, laps, darts, plus and minus tolerance, and location of superimposed pieces.

The punching of holes simultaneously in a pile of fabric pieces to indicate data such as above specified is regular procedure in many factories and is satisfactory so far as some materials are concerned. However, in soft, spongy, open weaves, and in certain types of knit materials, particularly nets and laces, such holes are practically worthless because they tend to close up and are not discernible. To overcome this disadvantage it has become the custom to effect the required marking with a colored pencil, but this is disadvantageous since it involves marking each piece separately, layer by layer, and is a time-consuming process.

It has been proposed to provide marking machines having ink reservoirs in conjunction with mechanism for piercing the layers of material and applying ink thereto from the reservoir. Such machines, however, are of complicated character. The practice of marking pieces individually as above referred to, continues to prevail in factories generally.

An object of my invention is to provide for the simultaneous marking of multiple layers of material in a novel and highly effective manner. Through my invention the multiple layers may be marked speedily and efficiently, without the need for complex mechanisms, and with particular economy and simplicity. In carrying out my invention I impregnate a thread with a color-imparting material, such as an ink of the type employed in typewriter ribbons, and pass the thread into and out of the multiple layers so that a colored mark is imparted to each of the layers in the desired locations.

The invention also comprises a novel method of and means for passing the thread into and out of the layers. Other objects and advantages will be hereinafter described and claimed.

In the accompanying drawings:

Fig. 1 is a view in elevation, partly in vertical section, of a marking implement embodying my invention.

Fig. 2 is an elevational view of said implement viewed from a direction at right angles to Fig. 1.

Fig. 3 is an enlarged vertical sectional view of a portion of said implement.

Fig. 4 is a detail view showing a modified form of awl for carrying the thread through a pile of fabrics.

Fig. 5 is a detail sectional view on line 5—5 of Fig. 4.

Fig. 6 is a view in end elevation of another form of marking apparatus.

Fig. 7 is a view in side elevation, with parts in vertical section, of the apparatus shown in Fig. 6.

As stated above, in carrying out my invention I impregnate a thread with a suitable coloring compound. The latter may conveniently be an ink, preferably of the type which, over a considerable period of time, does not evaporate sufficiently in the material which carries it to lose its color-imparting property. Examples of such inks are those commonly employed in typewriter ribbons and stamp pads. The ink may be of black, blue, red, or any other desired color and may be either indelible or readily removable by washing. The coloring compound employed may, of course, vary widely, depending upon the character of the mark desired. The thread may also be of any suitable and well-known type. Ordinary cotton threads may be used.

In the drawings the thread is designated by the numeral 2. A particularly convenient hand tool for applying the thread to the marking of fabrics is shown in Figs. 1–3; wherein said tool is illustrated as comprising a haft 3, which may be of wood or other suitable material, to which is secured an awl or needle 4 having an eye 5 through which the thread is passed. Said awl 4 may conveniently be fitted into an opening in a cap 6, which may be of metal and secured to the end of the haft 3 by screws 7. A bolt or screw 8 serves to maintain the awl 4 securely in position

in said cap 6. A color 4' fits over the butt end of the awl, as shown, and is provided with openings 4'' for the passage of the thread.

A reel 9 containing a supply of the thread is mounted rotatably on a pintle 10 which is fixed in position in the haft 3. From said reel 9 the thread is led through a groove 11 in said haft, and thence through passages 12 and 13 in the cap 6, one of the openings 4'' in collar 4', the eye 5 of said awl, the opposite passage 4'', passages 14 and 15 of cap 6, groove 16 in the haft, and finally on to a take-up reel 17 on said pintle 10.

The pintle 10 is split at each of its ends, and the reels 9 and 17 may conveniently be maintained in assembled position by slightly spreading or peening the respective split ends of said pintle, as shown in Fig. 3. In order to provide effectively for the unwinding of the thread from the supply reel the latter may be mounted more freely for rotation on the pintle than is the reel 17. To this end the split end of said pintle adjacent the reel 17 is spread or peened over to a greater extent than is the split end adjacent the reel 9, thus maintaining the reel 17 with somewhat greater force in engagement with the adjacent wall of the haft, but without preventing manual rotation of the reel 17.

To mark simultaneously a pile of fabrics, such as shown at 18, a pattern 19 is placed over said fabrics and the pile placed upon a cutting board or block 20, on which said fabrics may be cut to the shape of said pattern. Said pile may be held in position by downward pressure applied through weights or clamps in the usual manner. The haft 3 may then be forced downwardly to pass the awl 4, together with the associated portion of the thread 2, through the pattern and fabrics on said cutting block. In this downward travel of the awl and the thread, no unwinding of the thread from the supply reel 9 occurs. However, upon raising the haft 3 to withdraw the awl and thread against the resistance provided by the engagement of the thread with the downwardly pressed fabrics, a downward pull of the thread is produced with respect to the haft. A small increment of the thread is thus unwound from the supply reel, the take-up reel 17 remaining held against rotation since it is held more tightly against the haft as above stated. When desired, the operator may readily rotate the reel 17 manually to take-up thereon the slack in the thread resulting from marking operations.

The end of the haft may, if desired, be provided with padding 3' for receiving blows from a hammer to force the needle into a pile of fabrics to be marked.

On the withdrawal of the thread from the fabrics, all of the layers of the latter are plainly marked by the coloring compound in the thread. The operation is repeated for each additional location to be marked in the fabric pile.

The piercing of the fabrics to pass the thread therethrough may of course be accomplished by a wide variety of means. A further example of apparatus for this purpose is illustrated in Figs. 6 and 7, in which the awl 21 is reciprocable by the turning of a crank handle 22 secured to a shaft 23 journaled in bearings in a suitable frame 24. The latter includes a base plate 25 on which the fabrics may be piled and having a perforation through which the awl is adapted to pass.

In this arrangement the awl is slidably mounted in extensions 26, 27 of the framework 24, and said awl carries near its upper end a cross bar 28 on which are journaled a thread supply reel 29 and a take-up reel 30.

For reciprocating the awl or needle 21, the shaft 23 has a disk 31 secured thereto, which disk carries a crank pin 32 connected by link 33 a pin 34 suitably fastened to said awl, as by an integral sleeve or collar element 34' in which said awl is securely fastened.

The thread 35, impregnated with a suitable coloring compound, is passed downwardly from the supply reel 29 through an eye in the awl and thence upwardly to the take-up reel 30. While various provisions may be made for providing greater resistance to rotation of the reel 30 than to rotation of reel 29 as the awl is raised from the fabric pile, so that an increment of thread is withdrawn from said reel 29, one convenient way in which this may be accomplished is to pass the thread through an inclined opening 36 in the frame so that said thread, in its passage to the take-up reel, bears frictionally against a wall of said inclined opening. Thus, as the awl rises from the fabric, the thread unwinds from the supply reel in preference to the take-up reel. The operator may from time to time rotate the take-up reel manually to take up slack in the thread.

In Figs. 4 and 5 there is shown a modified form of awl 40 which may be employed, in which grooves or channels 41 are provided along opposite sides of said awl for guiding the thread to and from the eye of the awl. The depth of said channels should be such as to enable the thread 2 to extend outwardly beyond said channels, as shown, so that marking of the fabrics may be effected by the thread.

It will be apparent that the utility of my invention is not restricted to the marking of textile fabrics and that it may be used for the marking of other materials such as paper or leather. The term "fabric" as used in the appended claims is employed generically as including such materials.

Also, my marking thread may be employed, without any needle or awl, for external marking. It has proven distinctly effective, for example, for the marking of parachute shroud lines. In such marking, the shroud line is held under tension, the thread passed around the line for a full turn, and the ends of the thread pulled alternately in a sawing motion. One such sawing motion of the thread has been found sufficient to produce a distinctive and satisfactory mark around the shroud line. The thread may similarly be employed for marking ropes.

Another example of the uses of my marking thread is as a stencil. The colored thread may, for instance, be placed in the bobbin of a sewing machine and used for stitching a desired pattern into a piece of fabric. The pattern formed by the bobbin thread may then be pressed against the article to be marked.

The terms and expressions which I have employed are used as terms of description and not of limitation, and I have no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described or portions thereof, but recognize that various modifications are possible within the scope of the invention claimed.

I claim:

1. In combination, a thread of absorbent material having a transferable coloring substance therein, a needle having an eye through which said thread is passed, supply and take-up means for said thread, and means for passing said nee-

dle and said thread into and out of a plurality of fabric layers for imparting color thereto.

2. In combination, a thread of absorbent material having a transferable coloring substance therein, a needle having an eye through which said thread is passed, means for supporting said needle and adapted for movement to carry said needle and said thread into and out of a plurality of fabric layers for imparting color thereto, and supply and take-up means for said thread, said supply and take-up means being mounted for movement with said needle.

3. In combination, a thread of absorbent material having a transferable coloring substance therein, a needle having an eye through which said thread is passed, means for supporting said needle and adapted for movement to carry said needle and said thread into and out of a plurality of fabric layers for imparting color thereto, thread supply means movable with said needle and adapted to be operated to release an increment of thread during withdrawal of said thread from said layers, and thread take-up means movable with said needle.

4. In combination, a thread of absorbent material having a transferable coloring substance therein, a needle having an eye through which said thread is passed, means for supporting said needle and adapted for movement to carry said needle and said thread into and out of a plurality of fabric layers for imparting color thereto, and supply and take-up means for said thread, said supply and take-up means being mounted for movement with said needle, and means providing for less resistance to operation of said supply means than said take-up means for releasing an increment of thread from said supply means during withdrawal of said needle and said thread from said fabric layers.

5. In combination, a thread of absorbent material impregnated with a transferable coloring substance, a needle through which said thread is adapted to be passed, means for passing said needle and thread into and out of a pile of fabric layers, thread supply means responsive to withdrawal of said thread from said fabric for releasing an increment of said thread, and take-up means operable to remove slack from said thread.

6. A hand marking tool for passing through a pile of fabric layers a thread of absorbent material having a transferable coloring substance therein, said tool comprising a body portion adapted to be grasped by the hand of an operator, a needle carried by said body portion and having an eye for receiving said thread, and thread supply and take-up means carried by said body portion for movement therewith and with said needle.

7. A hand marking tool for passing through a pile of fabric layers a thread of absorbent material having a transferable coloring substance therein, said tool comprising a body portion adapted to be grasped by the hand of an operator, a needle fixed to said body portion for movement therewith and having an eye for receiving said thread, and thread supply and take-up means carried by said body portion for movement therewith and with said needle.

8. A hand marking tool for passing through a pile of fabric layers a thread of absorbent material having a transferable coloring substance therein, said tool comprising a body portion adapted to be grasped by the hand of an operator, a needle carried by said body portion and having an eye for receiving said thread, and thread supply and take-up means carried by said body portion for movement therewith and witn said needle, and means providing for less resistance to operation of said supply means than said take-up means for releasing an increment of thread from said supply means during withdrawal of said needle and said thread from said fabric layers.

9. A hand marking tool for passing through a pile of fabric layers a thread of absorbent material having a transferable coloring substance therein, said tool comprising a body portion adapted to be grasped by the hand of an operator, a needle carried by said body portion and having an eye for receiving said thread, thread supply means carried by said body portion and responsive to withdrawal of said thread from said fabric for releasing an increment of said thread, and take-up means carried by said body portion for removing slack from said thread.

10. A hand marking tool for passing through a pile of fabric layers a thread of absorbent material having a transferable coloring substance therein, said tool comprising a body portion adapted to be grasped by the hand of an operator, a needle fixed to an end of said body portion and having an eye for receiving said thread, and thread supply and take-up means mounted within said body portion for movement therewith and with said needle.

11. A hand marking tool for passing through a pile of fabric layers a thread of absorbent material having a transferable coloring substance therein, said tool comprising a body portion adapted to be grasped by the hand of an operator, a needle fixed to an end of said body portion and having an eye for receiving said thread, and thread supply and take-up means mounted within said body portion for movement therewith and with said needle, said body portion having passageways therein for conducting said thread from said supply means to said needle and thence to said take-up means.

12. A hand marking tool for passing through a pile of fabric layers a thread of absorbent material having a transferable coloring substance therein, said tool comprising a body portion adapted to be grasped by the hand of an operator, a needle carried by said body portion and having an eye for receiving said thread, and thread supply means carried by said body portion and responsive to withdrawal of said thread from said fabric layers for releasing an increment of said thread.

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