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CLOTH ERASING TOOL

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FIG. 1.

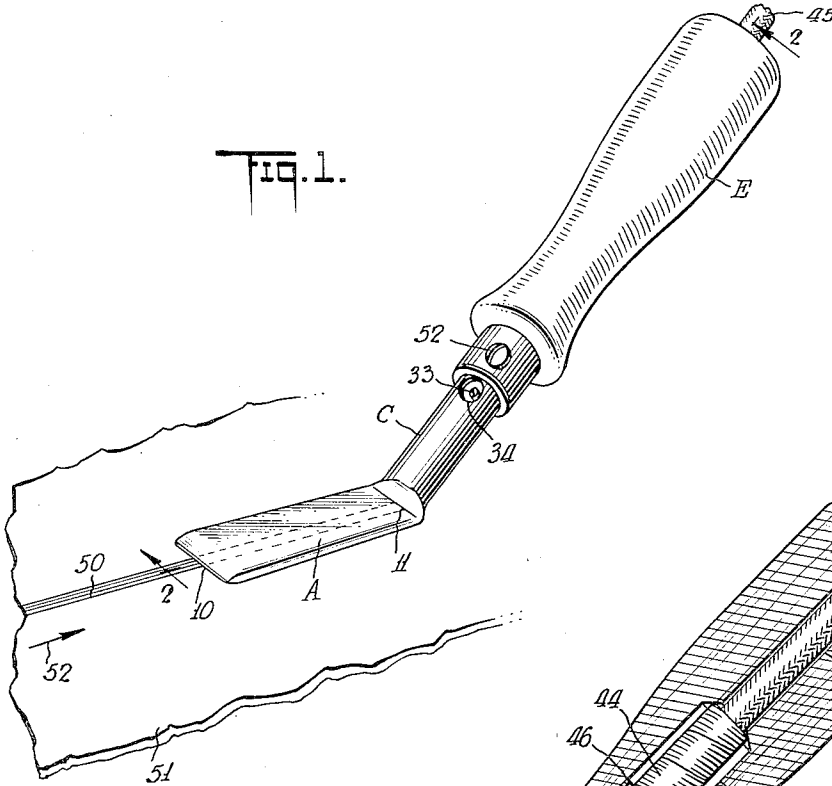


FIG. 2.

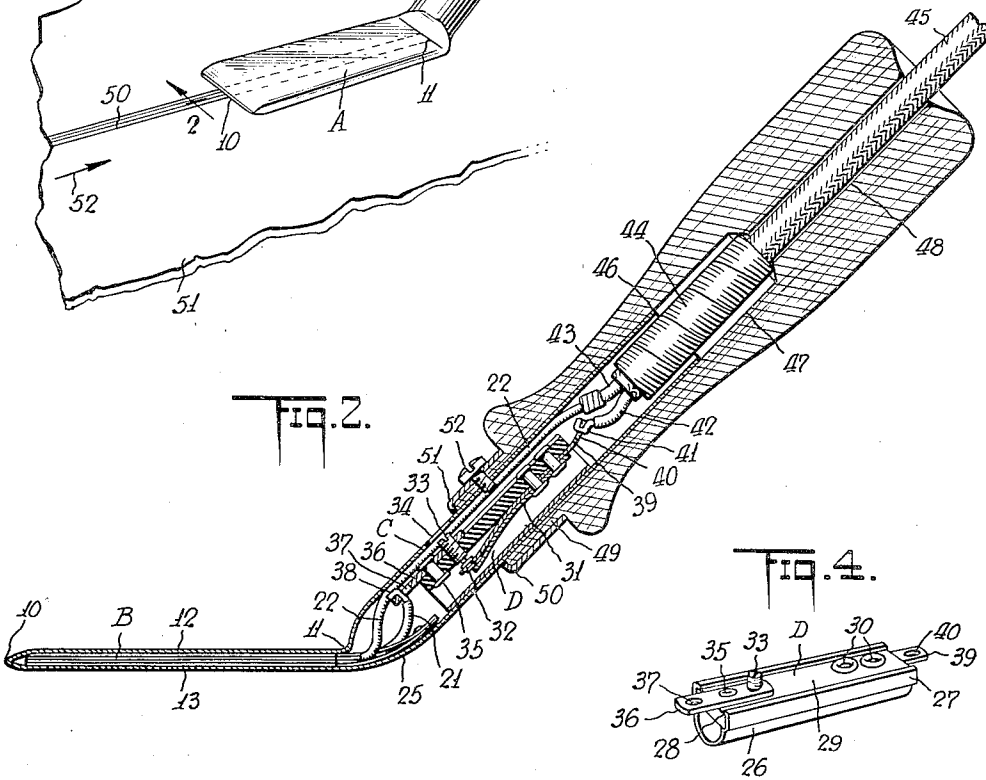


FIG. 4.

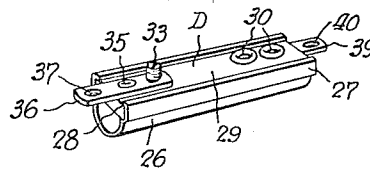
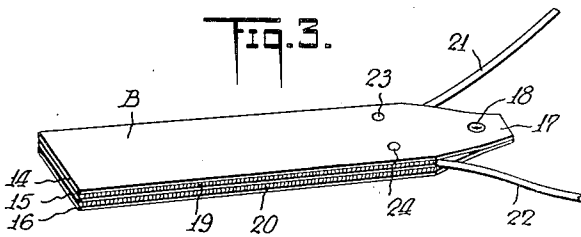


FIG. 3.



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CLOTH ERASING TOOL

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6 Claims. (Cl. 219—21)

The present invention is directed to an erasing tool and is particularly directed to a cloth erasing tool.

In the manufacture of clothing from woolen, 5 worsted and similar fabric materials, which may be utilized for clothing for men and women or for other purposes, it is quite customary to lay a pattern out upon the cloth with a waxy chalk and then to utilize an electrically operated cutting device with either a reciprocatory or rotating 10 blade to cut the fabric along the chalk line.

Often it becomes desirable to correct the layout or to change the lines or even to remove the lines altogether and this has been found most 15 difficult because of the tendency of the waxy chalk to adhere quite closely to the fuzzy or fibrous surface of the woven fabric.

It has been found that the application of matches or hot irons to obtain erasure often injures the cloth and is quite laborious and time 20 consuming.

It is among the objects of the present invention to provide an improved process and tool for enabling removal, erasure and correction of 25 waxy chalk marks of the character above described without prolonged and tedious erasing operations and without the necessity of using matches or other unsatisfactory heating devices.

A further object is to provide an improved 30 erasing tool of simple, inexpensive and durable construction which may be readily employed by skilled or unskilled labor to remove chalk marks with accuracy and at predetermined positions without injury to the cloth and without decrease 35 to its quality.

Other and further objects and advantages will also appear from the more detailed description given below, it being understood however, that this more detailed description is given by way of 40 illustration and explanation only and not by way of limitation, since various changes therein may be made by those skilled in the art without departing from the scope and spirit of the present invention.

In accomplishing the above objects it has been 45 found most satisfactory to apply a heat just slightly above the melting point of the waxy chalk, which varies from 250 to 350° F. on both sides of the chalk line, for example to a distance 50 of about 1/4 to 1/2 or an inch on each side. This heat is applied preferably for a period of less than a minute and desirably from several to 5 or 10 seconds.

It is found under these conditions that the 55 woolen, worsted or similar fabric material absorb

the chalk without grease stains and without leaving any residual deposits upon the surface of the cloth and without burning of either the waxy chalk or the cloth.

It is most important that the heat be uniformly applied to the surface of the fabric over a relatively large area, in the center or in the middle portion of which area is located the chalk mark which it is desired to remove. When this occurs, it appears that the chalk mark is absorbed and does not leave any particular stain or char upon the surface of the wool or worsted. 10

In designing a tool for this purpose it has been found most satisfactory to provide a tool with an elongated foot, preferably formed of a flattened 15 metallic tubing, such as a copper or brass tubing. The flattened foot is preferably completely filled by a resistance element consisting of a flat strip wrapped with a resistance wire, the upper and lower sides of which are encased in mica or some 20 other suitable material.

It is desirable that the heat over the entire foot element be substantially uniform without maximum concentration at the center of the foot. The foot is preferably of rectangular contour and 25 it may have a width varying from 1/2 to 1 inch and a length from 1 to 5 or 10 inches, as may be desired.

The unflattened portion of the tube preferably extends upwardly at an angle of 30 to 60° from the flattened foot. In said tube is preferably 30 provided an air space into which will ascend the hot air or the heat from the resistance element, substantially completely filling the foot.

In this space substantially above the foot is 35 placed an automatic thermostatic cut-off element, which may be adjusted from the exterior of the tube through an opening to enable regulation of the operating temperature.

Connected to the tube may be an insulating 40 handle of wood or Bakelite having the central bore through which may extend the electrical connection for the thermostat and a heater element.

In the drawing which shows one of the various 45 possible embodiments, which may be constructed according to the present invention, but to which the invention should not be restricted, since this embodiment is merely illustrative,

Fig. 1 is a top perspective view of the tool, 50
Fig. 2 is a transverse sectional view upon the line 2—2 of Fig. 1 upon an enlarged scale as compared to Fig. 1,

Fig. 3 is a perspective view upon an enlarged 55

scale of the heating unit removed from the tool of Fig. 2.

Fig. 4 is a top perspective view of the thermostatic unit upon an enlarged scale removed from the tool of Fig. 2.

Referring to Figs. 1 and 2, the tool is provided with a foot element A containing the heating element B with a tubular extension C containing the thermostat element D, and with the handle member E.

The structures A and C may be made integrally out of a single piece of brass tubing varying from 3/8 to 3/4 inch in diameter, which is collapsed at the foot portion A and sealed at its end 10. The uncollapsed portion extends upwardly from the bend 11 in the foot portion A.

As indicated in Figs. 2 and 3, there is sufficient space between the upper wall 12 and the lower wall 13 of the foot portion snugly to receive the thermostatic element B, which may consist of single or multiple mica plates 14, 15 and 16. These mica plates are preferably of the same width and length as the foot B and they have end extensions 17 which are riveted together at 18.

Between the upper and middle mica plates 14 and 15 and the middle and lower mica plates 15 and 16 are positioned the flat coils 19 and 20, each of which consist of a resistance wire closely wound upon an intervening mica plate of somewhat smaller width than the mica plates 14, 15 and 16.

The electrical connections 21 and 22 to the mica plates extend to the rivets 23 and 24, which are connected to the ends of the coils 19 and 20.

As shown best in Fig. 2, heating resistance elements 19 and 20 terminate at the bend 11, while the tail portion 17 extends upwardly into the tubular section C and presses against the curved portion 25 (see Fig. 2) of said tubular portion C, which affords a frictional lock.

Substantially above the foot B is positioned the thermostatic element D, which consists of a half tubular member 26 having the embossed side portions 27 with the inturned edge flanges 28.

The bosses 27 and the flanges 28 hold the Bakelite or fiber insulating piece or board 29 in position. This board 29 carries the rivets 30 which hold the double thermostatic strip 31 in position. The other end of the double thermostatic strip is provided with a contact piece 32 which may be adjustably tensioned by the screw 33, the fillister slot of which is accessible through the opening 34 in the tubular section C.

The rivet 35 holds the plate 36 in position on the board 29. The plate 36 carries the screw 33. The plate 36 has an opening 37 which receives the end portion 38 of the electrical conduit 21.

The other conduit 22 extends past the thermostatic element D. A portion of the thermostatic strip 31 is also provided with an extension 39 having an opening 40 receiving the end 41 of the conduit 42. The conduit 42, together with the conduit 43, extends through the sleeve member 44 and then through the cable 45 to a source of electrical energy which may, for example, consist of 110 to 120 volts A. C. or D. C.

The sleeve C extends up to the point 46 in the bore 47 in the handle E, which is shown as being made of wood. A smaller bore 48 is provided to receive the cable 45.

The lower portion of the handle E has a small diameter projection 49 upon which is received the metallic sleeve 50 having the inturned end portion 51 and having the set screw 52 which

locks the thermostatic unit D in position, as shown in Fig. 2.

In operation a switch (not shown), which may be upon the handle E or at some remote point, may be operated to supply electrical energy to the conduits 42 and 43. This will set up a flow of current through the resistor elements 19 and 20 heating up the foot and this will heat up the air within the upper tubular portion C until the predetermined temperature is achieved.

This predetermined temperature may vary from 220° F. to 350° F. and at the maximum predetermined temperature, the thermostatic strip 31 will remove itself from the inside end of the screw 33, breaking the circuit and discontinuing the heating of the element B. As soon as the air cools down in the tube C, the circuit will be reconstituted by the thermostatic element 31 returning to its contact with the screw 33.

The opening 34 not only permits access to the screw 33 to adjust the device to a constant temperature, which it is desired to maintain, but also enables ventilation in the sleeve element C. By loosening the set screw 52 it is also possible to remove the entire unit A-B-C-D from the handle E for repair or adjustment.

The heating unit when positioned as indicated in the foot (see Fig. 2) will assure disappearance of the waxy chalk marks and dispersion thereof into the fabric without burning or charring of the fabric.

In Fig. 1 is indicated the best way of removing the chalk marks 50 upon the fabric 51, the erasing tool being preferably moved in the direction 52.

For example, when using a tool having a foot about 3 inches in length and about 3/4 of an inch in width, with a chalk mark say of 1/8 to 1/2 of an inch in width, it is desirable to draw the foot over the fabric with a contact of a few pounds per inch so that the time of contact will be about 1 or 2 seconds up to about 10 or 15 seconds.

The pressure may be increased up to 5 or 10 pounds, but as a general rule a light pressure is preferred and gives best removal or erasure of the chalk marks.

The erasing tool as shown has been found particularly satisfactory with all types of cloth-marking chalks containing from 10 to 50 or more per cent of paraffin wax, carnauba wax, beeswax, montan wax, spermaceti and so forth.

Even where a pigment, such as titanium oxide, chrome oxide or so forth, is used in the chalk in amounts up to 1 to 5%, a most satisfactory dispersion of the chalk is obtained.

Many other changes could be effected in the particular features of erasing tool designed, and in methods of operation set forth, and in specific details thereof, without substantially departing from the invention intended to be defined in the claims, the specific description herein merely serving to illustrate certain elements by which, in one embodiment, the spirit of the invention may be effectuated.

What is claimed is:

1. An erasing tool for removing wax chalk marks from cloth comprising a flat elongated thin metal wall hollow foot member, a rectangular wafer-like heater element in and substantially completely filling said foot member, said foot member being closed at its forward end, an upward oblique cylindrical extension from said foot member, integral with said foot member and communicating with the interior of said foot member through the rear end of said foot member, a thermostatic control positioned in said ex-

tension substantially above said foot member and a handle connected to said extension, said foot member and extension consisting of a single piece of tubing.

- 5 2. An erasing tool for removing wax chalk marks from cloth comprising a flat elongated thin metal wall hollow foot member, a rectangular wafer-like heater element in and substantially completely filling said foot member, said foot member being closed at its forward end, an upward oblique cylindrical extension from said foot member, integral with said foot member and communicating with the interior of said foot member through the rear end of said foot member, a thermostatic control positioned in said extension substantially above said foot member and a handle connected to said extension, said handle being provided with central passageways and electrical conduits in said passageways.
- 10 3. An erasing tool for removing wax chalk marks from cloth comprising a flat elongated thin metal wall hollow foot member, a rectangular wafer-like heater element in and substantially completely filling said foot member, said foot member being closed at its forward end, an upward oblique cylindrical extension from said foot member, integral with said foot member and communicating with the interior of said foot member through the rear end of said foot member, a thermostatic control positioned in said extension substantially above said foot member and a handle connected to said extension, said heater element consisting of two mica plates closely wound with a resistance wire and insulated from each other closely fitted into said hollow foot member.
- 15 4. An erasing tool for removing wax chalk marks from cloth comprising a flat elongated thin metal wall hollow foot member, a rectangular wafer-like heater element in and substantially completely filling said foot member, said foot member being closed at its forward end, an upward oblique cylindrical extension from said foot member and a handle connected to said extension, said extension containing a bimetallic metal strip and a contact point and means accessible from the exterior of said extension for adjusting the position of said contact point.
- 20 5. An erasing tool for removing and correcting wax chalk marks from cloth, which chalk marks have been applied thereto preparatory to cutting operations, comprising a thin brass tubular member, having an obliquely bent and flattened end portion, and sealed off, a heater element fit-

ting closely in the flattened portion of said tubular member, said heater element consisting of five superimposed mica strips, the second and fourth strips closely wound with heat resistant wire, said strips having a tail extending beyond said flattened portion into the unflattened portion, said tail provided with a rivet holding said strips together and electrical connections extending to said tail, said flattened portion bent at an angle of 45° to the axis of the unflattened portion of the tubular member, a semi-cylindrical enclosure in said unflattened portion formed of a semi-cylindrical metal member and a flat insulating board closing off one side of said metal member, a bimetallic leaf extending along said board, said leaf riveted to said board at one end and said board carrying a contact post at the other end of the leaf, adjustably threaded into said board, said unflattened portion having an opening permitting access to said contact post, and a handle member carrying said tubular member.

6. An erasing tool for removing and correcting wax chalk marks from cloth, which chalk marks have been applied thereto preparatory to cutting operations, comprising a thin brass tubular member, having an obliquely bent and flattened end portion, and sealed off, a heater element inserted into and fitting closely in the flattened portion of said tubular member, said heater element consisting of five superimposed mica strips, the second and fourth strips closely wound with heat resistant wire, said strips having a tail extending beyond said flattened portion into the unflattened portion, said tail provided with a rivet holding said strips together and electrical connections extending to said tail, said flattened portion bent at an angle of 45° to the axis of the unflattened portion of the tubular member, a semi-cylindrical enclosure in said unflattened portion formed of a semi-cylindrical metal member and a flat insulating board closing off one side of said metal member, a bimetallic leaf extending along said board, said leaf being riveted to said board at one end and said board carrying a contact post at the other end of the leaf, adjustably threaded into said board, said unflattened portion having an opening permitting access to said contact post, and a hollow wooden handle receiving the upper end of said unflattened portion and receiving said electrical connections.

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