

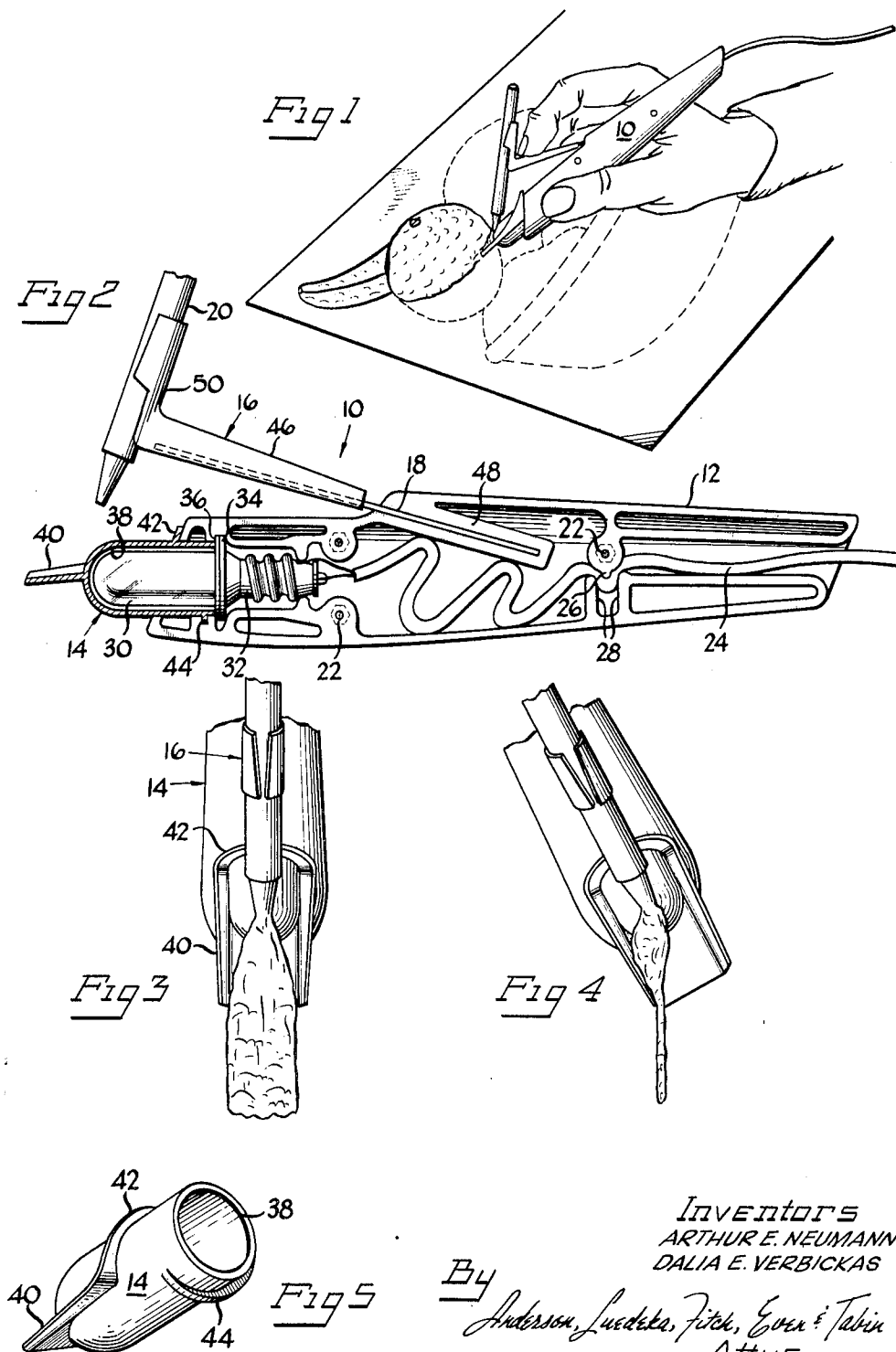
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ELECTRICALLY HEATED DRAWING INSTRUMENT

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1

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ELECTRICALLY HEATED DRAWING INSTRUMENT

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This invention relates generally to a drawing and decorating instrument and is more particularly concerned with the provision of an electric instrument or tool for use in connection with thermoplastic drawing materials, such as wax base crayons and the like.

Many forms of art kits have been developed in recent years to serve as a stimulus for interest in drawing and painting, and such kits have included some rather interesting and novel devices such as the paint-by-number arrangement. The present invention is particularly concerned with the provision of a tool or instrument which can be used with ordinary wax base crayons or similar thermoplastic materials to provide a three-dimensional effect in drawing. Generally, an embodiment of the invention disclosed herein can be used to flow colored crayon material on to almost any surface and thereby either create a picture having actual depth or otherwise decorate the surface in any desired manner.

It is, therefore, the primary object of this invention to provide means for selectively and controllably converting a normally solid, pigmented, thermoplastic material to a fluid and applying such fluid as desired to achieve a particular effect when the material again solidifies. A further object of the invention is to provide a heated drawing instrument, including means for movably supporting a crayon or the like in position for contact with the heated portion of the instrument. A still further object of the invention is to provide a drawing instrument adapted to be held in the hand and including a heated tip portion and means for supporting a crayon for movement into and out of engagement with the heated tip portion. Other objects and advantages will become apparent from the following description of the selected embodiment of the invention illustrated in the drawings, wherein:

FIGURE 1 is a perspective view of the embodiment illustrating one of its uses;

FIGURE 2 is an enlarged, sectional view of the instrument taken generally along its longitudinal axis;

FIGURE 3 is a large, fragmentary top plan view of the tip portion of the instrument, illustrating the application of a broad band of material;

FIGURE 4 is similar to FIGURE 3, but illustrates the use of the tip to apply a rather thin line of material; and

FIGURE 5 is a perspective view of the tip shown in FIGURES 3 and 4.

With reference to the drawings, it will be seen that the selected embodiment of this invention includes a manual drawing instrument or tool 10 which is elongated in shape and sufficiently slender to be held comfortably between the thumb and forefingers, as seen in FIGURE 1. The tool comprises a frame or case 12 which may be of plastic or other suitable material, a tip portion 14 and a crayon holder 16. The tip portion 14 is of a heat conductive material and the crayon holder is supported on a flat spring 18 or the like. Consequently, a crayon 20 can be brought into engagement with the heated tip to cause the crayon material to flow, as seen in FIGURE 1, and the holder 16 can be released when desired to remove the crayon from the tip to assume the position seen in FIGURE 2.

With reference particularly to FIGURE 2, it will be noted that the case 12 is preferably made of two elon-

2

gated, similar sections which are secured together by screws 22 or other suitable fastening means. In the illustrated embodiment, the case 12 is of molded plastic, but other suitable materials might be used. The interior of the case includes a number of reinforcing ribs, some of which define a conduit or channel for receiving an electric cord 24. The cord is clamped against axial movement by a lug 26 on the upper portion of the case which fits down against the wire and clamps the latter within a pair of ribs 28 on the lower portion of the case. The forward end of the electric wire 24 is connected to a heating element which, in the illustrated embodiment, is in the form of an ordinary light bulb 30. This light bulb is received in a socket member 32 held in place between the two sections of the case by an annular groove engaging a flanged portion 34 of the socket. This groove also serves to retain a rubber gasket or the like which provides a resilient seat for the metal tip 14 which projects outwardly from the forward end of the case. This metal tip may be of copper, aluminum, or other heat conductive material, it being understood that the metal tip and heating element combine to preferably provide only enough heat to melt the wax crayon, and do not provide a sufficiently high temperature at the tip to cause a serious burn if placed in contact with the flesh of the user.

In the illustrated embodiment, it was found that an ordinary four (4) watt pilot light bulb could be used effectively in conjunction with a tip of relatively light weight aluminum alloy having a thickness of .040 inch. The tip 14 has its inner surface 38 coated with black paint or the like so as to better absorb the heat from the bulb. The resultant temperature at the tip is about 145° F. The use of a bulb is particularly advantageous in that it is readily replaceable and, also, in that it provides a constant source of heat for the tip.

The tip 14 is generally cylindrical in form, being open at one end and being rounded at the other end. The forward rounded end also has fixed thereto or formed therewith a scoop or channel 40 which provides the drawing tip or point, and this channel 40 extends rearwardly and upwardly over the top of the cylindrical portion, with the rear edge 42 of the channel abutting the forward wall of the case 12. The rearward end portion of the cylindrical member includes a projecting annular flange 44 which extends only partially around the cylinder. As seen particularly in FIGURE 2, the interior of the case is formed so that the cylinder is inserted between the forward ends of the two halves of the case 12 with the flange 44 extending into an arcuate groove within the casing to hold the tip 14 in place.

The crayon holder 16 is generally an L-shaped bracket having one leg 46 secured to the flat spring member 18 which projects outwardly from a seat 48 formed in an intermediate portion of the casing. The other leg 50 includes a section which is arcuately shaped so that an ordinary crayon, illustrated at 20, can be readily inserted with the tip or end of the crayon projecting outwardly from the support in the direction of the heating tip 14 of the tool. As noted in FIGURE 1, the forefinger of the user can be utilized to depress the crayon into engagement with the heated tip. The period of such engagement will be determined by the amount of flow of material desired. In this latter respect, it will be noted from FIGURES 3 and 4 that the breadth of the area covered by the fluent crayon material can be varied by tilting the channel shaped tip 40 of the tool.

While the crayon material or the like is applied in a molten or fluid state, such material readily solidifies in essentially the exact area in which it is applied. Consequently, well defined lines and areas can be covered as desired, and the depth of the applied material can be also

readily varied. While FIGURE 1 illustrates the use of this instrument in connection with the drawing or painting of a picture, there are many other uses for the instrument. For example, three-dimensional articles can be readily decorated since the fluid wax material readily adheres to almost any surface. Bottles, vases and the like have been attractively decorated with this instrument. Attractive Christmas tree ornaments have also been made by using various shapes of a foam plastic material, such as "Styro-foam," and applying any desired decoration to such base material.

Although shown and described with respect to particular apparatus and material, it will be apparent that various modifications might be made without departing from the principles of this invention. Further, it is to be understood that the term "crayon" as used herein is intended to refer to any normally solid, colored or pigmented material which can be caused to flow upon the application of heat thereto.

What is claimed is:

1. A drawing and decorating instrument comprising an elongated case adapted to be held in the user's hand, a heating element within said case comprising a light bulb, a socket within said case receiving said light bulb, an electric wire connected with said socket and extending outwardly from said case for connection with a source of electrical current, a heat conductive metal drawing tip including a metal casing disposed in enclosing relation to said light bulb, said elongated case comprising a pair of elongated section members each forming half of the case and being joined together to form a hollow casing, means for releasably holding said hollow casing and drawing tip together including a circumferential flange on said drawing tip which is received in an arcuate groove formed in each of said section members, a channel shaped tip element integral with said metal casing and projecting forwardly therefrom outside of said elongated case, and a drawing crayon support means including a spring member fixed to said case in a manner affording movement of said support means relative to said case between a position closely adjacent to said tip element and a position away from said tip element, whereby the end of the crayon

placed in contact with the heated tip element can be caused to melt and flow from said tip.

2. A drawing and decorating instrument comprising an elongated case adapted to be held in the user's hand, a heating element within said case, an electric wire connected with said heating element and extending outwardly from said case for connection with a source of electrical current, a heat conductive metal drawing tip including a metal casing disposed in enclosing relation to said heating element, said elongated case comprising a pair of elongated section members each forming half of the case and being jointed together to form a hollow casing, said case and drawing tip including cooperable parts to releasably hold said drawing tip in position including a circumferential flange on said drawing tip which is received in an arcuate groove formed in each of said section members, a channel shaped tip element integral with said metal casing and projecting forwardly therefrom outside of said elongated case, and drawing crayon support means fixed to said case for movement relative thereto from a position closely adjacent to said tip element to a position away from said tip element, whereby the end of the crayon placed in contact with the heated tip element can be caused to melt and flow from said tip.

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