United States Patent

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[54] **CRAYON AND COLOR MEDIA**
4 Claims, 3 Drawing Figs.

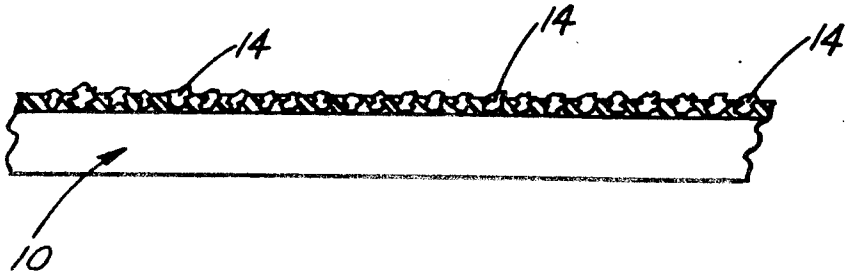
[52] **U.S. Cl.** **401/49,** 35/26, 283/63
[51] **Int. Cl.** **B43k 19/00,** B42d 15/00
[50] **Field of Search** 35/26; 401/49, 52, 88; 283/63

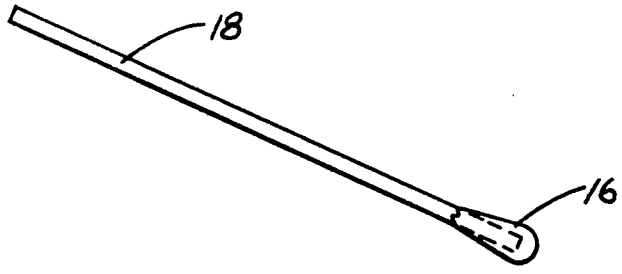
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ABSTRACT: A marker which is harder than most household objects, and hence will not abrade to leave a color mark. Abrasive surface sharp enough to abrade the marker. The surface is filled with a wax which will cause pigment abraded by the sharp surface to be compounded therein as crayon color marking.





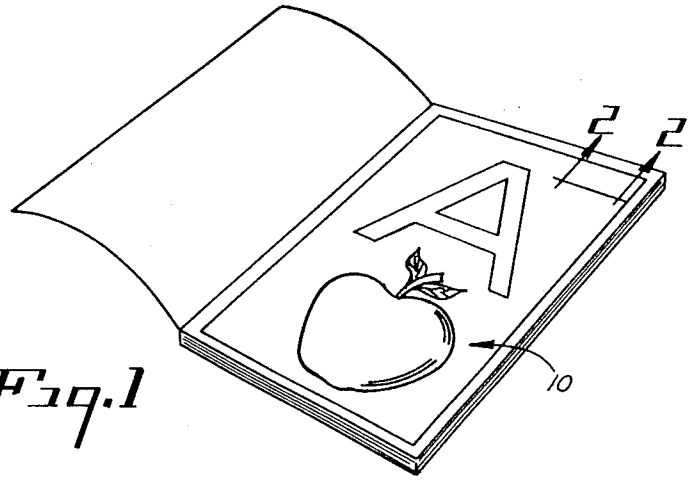


Fig. 1

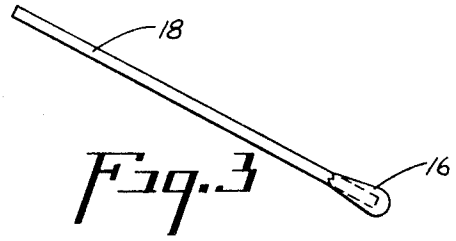


Fig. 3

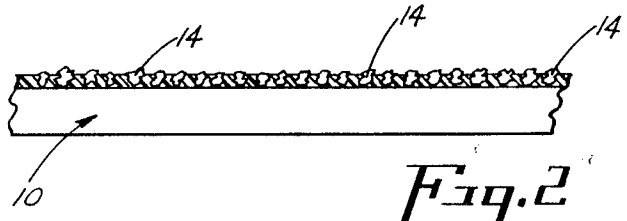


Fig. 2

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CRAYON AND COLOR MEDIA

BACKGROUND OF THE INVENTION

Coloring pencils and marking sticks, not of liquid or oil nature, are usually a pigmented wax hard enough to be held in the hand, but are abradable by rubbing upon substantially any surface. Thus, the color may be applied to plain surfaces, or to preprinted surfaces. The former allows the creative spirit to establish the pattern, whereas the latter encourages only dexterity control.

Unfortunately, such items, especially of the wax nature, are not always confined to appropriate surfaces by the young person who does not understand the potentially destructive effect of coloring furniture and walls.

Pigmented or colored soap has been promoted as a coloring media, because the soap is water soluble and ostensibly will enable facile cleaning whenever the substance is applied to inappropriate surfaces.

SUMMARY OF THE INVENTION

The object of the invention is to provide a pigmented marker which is substantially incapable of marking on common household objects and clothing.

A further object of the invention is to provide a sheet, either preprinted or plain, which has a surface of abrasive nature interphased with a substance which will accept and mix with abraded pigment particles removed from a pigment object by the abrasive surface.

A specific object, therefore, is to provide a very hard chalk or plaster color pigment body which will not rub off on household items or clothing, and a sheet of paper with sharp abrasive particles filled with a wax which will allow the abraded matter to compound into the wax and form a wax-pigment admixture in situ.

DESCRIPTION OF THE FIGURES

FIG. 1 is a perspective view of a coloring book with one page in position to be colored, said page being a sheet with a preprinted outline form, and a surface prepared according to the precepts of this invention;

FIG. 2 is a greatly enlarged and exaggerated cross section of a portion of the sheet; and,

FIG. 3 is a marker of hard pigment material according to this invention, on the end of a stick used as a holding handle.

DESCRIPTION OF THE PREFERRED EMBODIMENT OF THE INVENTION

The illustrated embodiment is a book having a sheet **10** printed with the letter A and a pictorial representation of an apple. The sheet may be plain, because many modern teachers reject the concept of providing objects to color. The guidelines are not a part of the invention.

The surface of sheet **10** is coated, at least in the area to be colored, with a very fine series of projections, which must be sharp. The most satisfactory material from the standpoint of usefulness and and price, is white silica. If a preprinted pattern is used, it is necessary to avoid dark colored abrasive material. White silica will allow the printing to show through. The silica is a very sharp abrasive, and is considered to be preferred. Such particles are suggested in FIG. 2 by the objects **14** shown in profile.

The abrasive may be secured by an adhesive directly to the surface of sheet **10**, or captured by the substance used to accept and mix with abraded pigment.

This invention may be considered as the creation of crayon in situ. "Crayon" is a word of French origin generic to a variety of marking devices, but at least in the United States, has come to be the name associated with a pigmented wax. The wax is easily abraded or rubbed onto substantially any surface, and will adhere the coloring material onto the surface.

Rather than a wax crayon, this invention provides a marking device which is very hard, and can be abraded only by a sharp abrasive surface In a generic sense it is a crayon, but not in the popular sense of a wax-pigment.

A filling material is coated over the surface of the sheet among the projecting particles on the surface. The filling material is capable of entrapping particulate material abraded from the marking device. The preferred filling material is microcrystalline wax.

The wax is floated over the surface of the sheet **10** to fill the area among the abrasive particles, but not to cover them. The wax may fill around particles **14** previously adhered to the surface, or the particles may be carried by, and secured by, the wax.

Then, by abrading any material on the abrasive projections **14**, the abraded particles will be forced into the wax by the remainder solid portion of the pigment material and will be mixed into the wax to form a compound of the wax and pigment. Preferably, the material abraded is dyed to an intense degree, or is a color pigment. Any material that will cling to the surface and reflect light to the eye of the observe will serve as a pigment. Even a conventional wax crayon would function in this capacity. The wax on the surface simply holds the color material in place as is done by conventional crayons. The act of compounding the pigment into the wax creates, in situ, the equivalent of the common crayon of pigmented wax. Preferably, of course, a very hard chalk or plaster dyed with an intense dye, or pigment, is the preferred marker.

The crayon marker may be made in any of many useful and artful forms. FIG. 3 illustrates a from which has sufficient pigment for a coloring book of several pages. The pigment is in the form of a rounded head **16** on the end of a stick-handle **18**. The size of the head **16** should be large enough to provide all the color needed for the book, but not enough to be wasteful. The marker is discarded after the book is finished.

The pigment material represented in FIG. 3 is composed of:

	Parts by weight
Calcium Sulphate	99. 5–98
Gum Acacia	9–11
Water soluble dye	. 5–1

It is important to understand that any material that is colored, abradable by silica, compatible with wax materials, and is harder than most household items, will serve as a satisfactory marker. The above example is one suitable composition made specifically for the purpose of this invention.

Another example is common chalk soaked in gum acacia to absorb all it will hold. White chalk will normally become much more hard than colored chalk. High pigment tends to produce a softer marker. The degree of marking tolerable, and the intensity of color, are matters of choice, not of principle.

Gum acacia is a common item of commerce, and is one of a variety of natural gums. See any Merck Index, or other chemical dictionary for further detail if necessary.

The wax material chosen as the most suitable for effectiveness and cost to fill the surface of sheet **10** is a microcrystalline product sold by Witco Corporation as W–835. Other sources are readily available. Microcrystalline wax is a cold tack material which may be mixed with the abraded pigment without fracturing.

An example of a suitable sheet coating is:

Abrasive Coat:
Acacia 30 percent solution 17 cc.
Silica 219 (WCD) 10 gm.
Glycerin 1 gm.
Water to make 100 cc.
Mix well, paint on paper, heat dry.
Wax coat:
W–835 (Witco) 5 gm.
Silica 219 (WCD) 10 gm.
Mineral spirits to make 100 cc.

Mix well and paint on dried abrasive-coated paper. Dry. The wax will adhere to the surface, but in use does not present a surface which is sticky. In this sense it is characterized by a substantial lack of adhesion.

Silica need not be pure, but white silica is preferred. Designation 219 (WCD) is that of Whittaker Clark and Daniels, 100 Church St., New York, N. Y. 10007.

W-835 is made by the Sonneborn Division, Witco Corporation, 75 E. Wacker Drive, Chicago, Ill., U.S.A. 60600.

"Cold Tack" is a term of art. Refer to such publications as a bulletin "Multiwax Microcrystalline Waxes" by Witco Corporation. This term defines a product which is pliable or plastic in the sense of being modeled, and mixable at room temperature.

It has been found that just the wax coat will bond sufficient silica to produce a satisfactory coat for softer markers.

Other modifications will be suggested within the frame of reference set forth in the objects and the above examples.

We claim:

1. In combination, a receiver body for accepting a pigment in display, and a pigment applicable to said body, characterized by:

means superimposed upon said body to provide a pigment abrasive surface characterized by sharp grip members projecting from the surface thereof with spaces therebetween;

a waxlike surface coating of material between said grit members characterized by cold tack and substantial lack of adhesion, but which may be compounded by mixing while cold with a pigment to create a pigmented composite coating; and

a nonwax pigment member characterized by becoming powder when abraded and having a hardness above a capability of being abraded by surfaces lacking a cutting grit nature, and may be abraded by said sharp grit members, whereby said pigment member may be abraded on said body surface to produce a fine particulate condition, and the removed substance thereof is captured and compounded into the body surface coating material during the abrading act as a coloring media.

2. A combination as defined in claim 1, wherein said surface coating is a microcrystalline wax.

3. In the combination as defined in Claim 1, said pigment member comprising:

a color pigment; and,

a hardening agent which renders said pigment harder than the abrading characteristics of household furnishings.

4. A crayon marker as defined in claim 3 wherein said pigment is calcium sulfate and the hardening agent is acacia gum.