

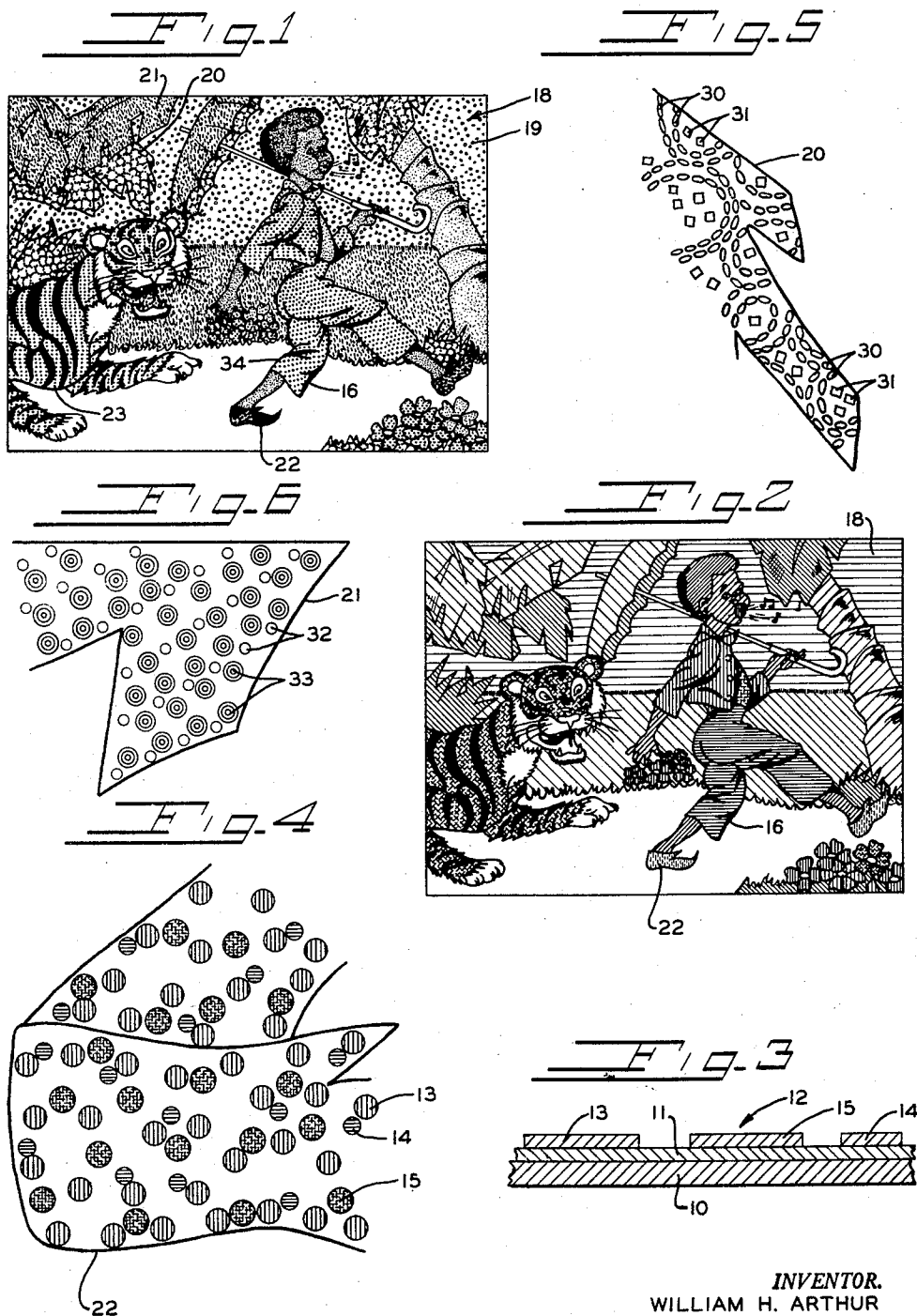
Oct. 28, 1958

W. H. ARTHUR

2,857,698

WATER COLOR PICTURE

Filed Feb. 21, 1955



INVENTOR.
WILLIAM H. ARTHUR

BY
DES JARDINS, ROBINSON & KEISER

Howard Keiser
HIS ATTORNEYS

2,857,698

WATER COLOR PICTURE

William Hamilton Arthur, Cincinnati, Ohio, assignor, by mesne assignments, to Western Printing and Lithographing Company, Racine, Wis., a corporation of Wisconsin

Application February 21, 1955, Serial No. 489,357

5 Claims. (Cl. 41—26)

This invention relates to a new type of water color picture and to a novel method devised for making the same.

Heretofore there has been no way known, as far as I am aware, of making the so-called "paintless" pictures for children's paint books in a large variety of gay and vivid colors so as to render them attractive and appealing to the children who use them. I know of no case in which any of these "paintless" pictures have been available in more than one color per picture. Also, the colors resulting from the application of water to the pictures in the known form of "paintless" coloring books are pale and lifeless and, for this reason, this type of product has not been successful. Therefore, it is an object of the present invention to provide an improved type of water color picture which may be colored in a number of bright, lustrous hues by brushing over the different component areas of the picture with a brush wet with water. To provide such a picture, I first coat the sheet of paper on which the picture is to be made with a layer of water-insoluble material which serves as a barrier layer between the coloring material and the paper and prevents the water-soluble coloring material thereafter applied to the surface from striking into fibers of the paper. This is undesirable since the localized spots of color applied to the surface in preparing the picture for use will remain as such after the picture is brushed with water if the color is permitted to strike into the paper. This layer of insoluble material is also preferably formed of a hygroscopic material so as to take up the water applied to the picture and thereby prevent the formation of puddles or beads of water on the surface of the picture.

On the surface thus provided, I then apply the various colors of the coloring material which is so composed and arranged as to produce the particular pictorial representation desired. The coloring material used for this purpose may be of any desired type so long as it has the capability of being readily soluble in water after having been permitted to dry on the picture. The different colors of the coloring material are distributed over the surface of the sheet in the form of discrete figures so as to permit the amount of any particular color impressed on a given area of the picture to be accurately controlled. In this way, several colors may be applied in predetermined amounts to a given area so that when water is applied thereto and the colors mixed together by brushing, a color of the desired hue will be produced. By thus combining a limited number of basic colors, a large variety of different hues and shades of color may be obtained on the various component areas of the picture.

The coloring materials may be applied to the base sheet by any of the known printing methods such as intaglio, rotogravure, engraving, or by the silk screen printing process. I prefer to use the latter method since it is less costly and more flexible than the others. In

order to use the silk screen method, a stencil is first prepared for each of the basic colors to be used in printing the picture. These stencils are preferably made by the photo method from an original drawing prepared for each of the colors to be applied to the picture. In the case of the stencil for the outline representation of the subject matter of the picture, however, it may be found more expedient to make a film stencil for this portion of the picture since the solid lines forming the outline of the pictorial representation may be fairly simple in character. In connection with the preparation of the photo stencils, Ben Day tints may be used in making up the original drawings so as to facilitate the point-by-point distribution of the various basic colors in the different areas of the picture. In composing the various portions of the picture to which one or more of the basic colors is to be applied, a careful selection of the proper Ben Day pattern will be necessary in order to obtain the proper distribution of color for the particular area of the picture under consideration. Some trial and error will be involved in this respect until sufficient experience is acquired by the artist to enable him to accurately judge the character and quantity of the colors required to provide the desired hues in the various sections of the picture. No concern need be given, however, with regard to the registration of the various colors in a given area since overlapping of the colors will have no effect on the ultimate picture produced by the application of water thereto to mix the colors together.

The coating which is applied to the paper in preparing it for use, as heretofore mentioned, will prevent the coloring material printed on the surface of the sheet by use of the stencils from "wicking in," that is, from penetrating into the fibers of the paper so as to prevent their uniform dispersal over the surface of the sheet when water is thereafter applied thereto. In other words, if it were not for the barrier layer of water-insoluble material applied as a coating to the paper sheet, it would be impossible to brush out the spots or dots of color impressed on the surface of the sheet during the printing operation. This would be detrimental insofar as the final picture is concerned since it would result in a mottled effect which would spoil its appearance. By using a material for the barrier layer which is hygroscopic in character, the water applied thereto with a brush will not stand in beads or puddles on the surface of the sheet but will be taken up by the absorbent coating and thereby aid in wetting, dissolving and mixing the water-soluble coloring material.

The solid lines forming the outline representation of the subject matter of the picture are preferably printed with a coloring material which is insoluble in water. Thereby, these lines will provide barriers between the different colored areas of the picture and prevent ragged and unsightly margins at the confluence of the different colors.

Accordingly, it is a further object of my invention to provide a picture formed of water-soluble coloring material which is impressed on a fibrous sheet coated with a water-insoluble material which is preferably hygroscopic in character so as to present an absorbent surface to the water used for dissolving the coloring material.

Another object of my invention is to provide a novel method for producing water color pictures composed of a large number of different colors from a limited number of basic colors.

With these and other objects in view which will become apparent from the following description, the invention includes certain novel methods and features of construction the essential elements of which are set forth in the appended claims and a preferred form or embodiment of

3

which will hereinafter be described with reference to the drawings which accompany and form a part of this specification.

In the drawings:

Fig. 1 is a view showing my water color picture as it appears before water is brushed thereon for mixing the colors together.

Fig. 2 is a view of the same picture showing its appearance after water has been brushed on the various component areas thereof.

Fig. 3 is a cross-sectional view showing the layer formation of the picture.

Figs. 4, 5 and 6 are enlarged views of portions of the picture shown in Fig. 1.

As mentioned earlier in the general description of my invention, the water color picture forming the subject matter of the present application is impressed on a base sheet 10 (Fig. 3) formed of paper or similar fibrous material which is provided with a layer 11 of water-insoluble material which serves as a barrier between the water-soluble coloring material 12 and the fibrous base sheet 10. The layer 11 may be composed of any suitable coating material for paper which is insoluble in water such as china clay, etc., though it is preferable, as explained earlier herein, to use a material which is also hygroscopic in character, for example starch or calcium carbonate. On the base sheet thus coated with the barrier layer 11, the water-soluble coloring material 12 is thereafter applied preferably by the silk screen printing process.

In the illustration shown in Fig. 1, a portion of which is shown greatly enlarged in Figs. 3 and 4, I have made use of three different colors of water-soluble coloring material, namely, red 13, blue 14 and yellow 15. A fourth color, i. e., black, is used for forming the solid lines 16 of the picture which provide the outline for the subject matter of the picture. The lines 16 are preferably formed of a water-insoluble material so as to provide permanent boundary lines which will assist the user in coloring the different areas of the picture and provide a separation between the colors of the different areas so as to result in a neat appearing product when the picture is completed.

As heretofore mentioned, various hues and shades of color may be obtained by the proper selection of the three basic colors employed for producing the different colored areas of the picture. For example, the area 18 of the picture comprising the sky may be given a light blue hue by applying a light distribution of small, blue figures 19 (Fig. 1) to this portion of the picture. This distribution of the blue coloring material may be obtained by using the proper Ben Day tint on this portion of the original drawing for the blue stencil.

In other places, such as on the boy's shoe 22, the colors red, yellow and blue may be combined to produce an orchid hue when the color deposits are mixed together by the application of water thereto. A portion of the shoe 22 is shown greatly enlarged in Fig. 4 to illustrate one possible arrangement of the color deposits in this area of the picture. It will be noted that the arrangement and frequency of distribution of the color deposits is such that the area covered by the red figures 13 and yellow figures 15 greatly exceeds that covered by the blue figures 14 so that the resultant color which is produced by mixing the three colors together will be of the desired hue. Obviously, patterns other than that shown in Fig. 4 might be used to produce the same final color so long as the relative proportions of the colors remain the same.

In other portions of the picture the blues may be combined with yellows to provide a green of the desired shade as shown in the leaves 20 and 21 in the upper left-hand corner of the picture (Fig. 1). For example, in the case of the leaf 20, a portion of which is shown greatly enlarged in Fig. 5, the small figures 30 comprising the blue pattern greatly exceed in size and in the frequency of their distribution the small figures 31 comprising the yellow pat-

4

tern so as to provide a dark, greenish blue color. The leaf 21, on the other hand, is comprised of a widely dispersed pattern of blue figures 32 (Fig. 6) and a closely spaced pattern of yellow figures 33 so as to produce a light, yellowish green color when this portion of the picture is gone over with a wet brush. In a similar manner, red and blue figures may be printed together in the area of the trouser leg 34 to provide a purple color thereon when this area of the picture is brushed with water. The leg may either be violet or purple depending on the proportion of red to blue applied thereto with the depth of the shade depending on the amount of color applied to this area. Likewise, the stripes of the tiger 23 are formed of a combination of yellow and red figures which when admixed with one another by the application of water will provide an orange shade, the particular hue of which depends upon the proportion of the yellow coloring material to the red coloring material.

It is here to be noted that the interspersing of the different colored figures on the picture before water is applied thereto (Fig. 1) is not such as to visually indicate the colors which will result when water is applied to the area. This is due to the fact that the figure patterns applied to the picture are not sufficiently minute to blend together and produce the resulting color as in the case of ordinary colored half tones. Hence, the picture retains the element of surprise for the child when he or she applies a wet brush to any given area to find out what color will result.

The water-soluble coloring materials are applied to the picture one at a time, each color being employed with its related stencil, there being four stencils required for the process used in producing the type of picture illustrated in Fig. 1. That is, there will be a stencil for the black lines forming the outline of the pictorial representation, one for the blue coloring material, one for the red coloring material, and one for the yellow coloring material. The coloring material may be in the form of a paint, dye, or other water-soluble coloring substance suitable for use with the particular process of printing utilized in making the pictures. It is important, of course, that the material remain water-soluble after it has dried and for an indefinite period thereafter.

When a wet brush is applied to the surface of the picture, the water applied by the brush will not tend to run or puddle on the surface of the sheet due to the hygroscopic character of the barrier layer of material applied to the top surface of the base sheet. This material will take up a portion of the moisture applied to the surface and tend to wet the coloring material from beneath and assist in its rapid and complete dispersal over the surface of the sheet as the brush is stroked thereacross. The even distribution of the color over the surface of the sheet is thereby facilitated, and the complete mixing of the several colors which may be applied to a given area in the form of a pattern of small, discrete figures or dots of the different colors is also more easily accomplished by virtue of sub-surface moisture which tends to float the coloring materials on the surface of the sheet.

In coloring the picture, each area involving a particular color or combination of colors is worked on separately and the brush should be rinsed in water after each area is completed and before commencing to brush a different area. This will preserve the purity of the colors and thereby insure that the completed picture will be neat and attractive in appearance. The solid lines 16 forming the outline representation of the subject matter of the picture being insoluble will provide a barrier between adjacent colored areas and aid the amateur artist in avoiding intermingling of the different colors of adjoining areas of the picture.

While I have described my invention in connection with one particular form or embodiment of the invention and have used, therefore, certain specific terms and

language herein, it is to be understood that the present disclosure is illustrative rather than restrictive and that changes and modifications may be resorted to without departing from the spirit or scope of the claims which follow.

Having thus described my invention, what I claim as new and useful and desire to secure by United States Letters Patent, is:

1. As an article of manufacture, a water color picture comprising a fibrous base, a layer of water-insoluble surfacing material covering on one side of said base, and a water-soluble coloring material impressed on said layer in the form of a multiplicity of small, discrete dots of different colors in predetermined amounts adapted to be combined when brushed with water to produce a color of the desired hue, said surfacing material being of such a character as to present an impenetrable surface to said coloring material.

2. The water color picture of claim 1 wherein said water-soluble coloring material is applied to said layer in the form of a multiplicity of small, discrete figures of reoccurring shapes.

3. The water color picture of claim 1 wherein dots of a limited number of colors are applied in different combinations and concentrations to give to a given area of the picture a color of the desired hue.

4. The water color picture of claim 3 wherein the dots of one color are applied to a given area of said layer without regard to their registry with the dots of another color applied to the same area.

5. As an article of manufacture, a multi-color picture for amusement or educational purposes comprising a base sheet, a water-insoluble surfacing layer on said sheet, and means for providing each of the component areas of the picture formed on the surfacing layer of said sheet with a color of the desired hue, including a multiplicity of small, discrete figures of water-soluble coloring material impressed on said base sheet in different colors of predetermined amounts, the figures of the different colored materials being combined in the correct proportion to produce a color of the desired hue when the coloring materials are admixed by the application of water thereto.

References Cited in the file of this patent

UNITED STATES PATENTS

2,038,516	McIntosh	Apr. 21, 1936
2,601,161	McIntosh	June 17, 1952
2,629,956	Switzer	Mar. 3, 1953

OTHER REFERENCES

The Technique of Water Coloring, Richmond, Little-Johns, plate XII, and pages 38, 40.

Ellis: Printing Inks, Rheinhold Publ. Co., N. Y. C., January 1940, pp. 403-406.

Invisible Color Paint Books, published by Platt and Munk Co., 1952, and distributed by Brogle and Co., Inc., N. Y. C.