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2,985,556

MANUFACTURE OF SPECTACLE FRAMES

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Filed Mar. 12, 1959, Ser. No. 798,948

17 Claims. (Cl. 154—102)

This invention relates to the manufacture of spectacle frames from plastic material and, more particularly to spectacle frames having a gradient color appearance either in a solid color or in a two-tone or two-color effect.

One of the objects of the invention is to provide a novel spectacle frame from plastic material and in which a desired color is of a predetermined density in a localized area of the frame and fades out gradually from such area into clear plastic or into another color which gradually increases in intensity to a second localized area of maximum density thereof.

Another object of the invention is to provide a spectacle frame in which there is provided novel two-tone or two-color effects without removing any material from the front or back of the frame by skiving or any other known method of accomplishing such removal of material.

A further object of the invention is to provide a novel spectacle frame from a composite piece of plastic material composed of a plurality of layers of different colors of uniform density but constructed to provide a unitary gradient density material providing a two-tone or two-color appearance.

A still further object of the invention is to provide novel spectacle frames from plastic material composed of a plurality of layers of different colors and adapted to be constructed in a variety of patterns to provide a large number of gradient two-tone or two-color designs without requiring the removal of any of the plastic material from the frames.

Other objects of the invention, as well as the novel features thereof, will appear from a perusal of the following description when read in connection with the accompanying drawings, in which

Fig. 1 is a perspective view of an end portion of plastic layer which is made in the form of a strip of any desired length or width;

Fig. 2 is a similar view showing a longitudinally divided half of the strip shown in Fig. 1;

Fig. 3 is a top plan view of the strip shown in Fig. 2 and illustrates the manner in which a spectacle frame may be cut out from such strip;

Fig. 4 is a top plan view of a strip substantially similar to that shown in Figs. 2 and 3 but having a width more adaptable to the formation of temples therefrom;

Fig. 5 is a top plan view of apparatus for making the strip shown in Fig. 1;

Fig. 6 is a vertical sectional view looking along the line 6—6 of Fig. 5 and showing in addition to the mechanism of Fig. 5, means for cutting the strip longitudinally and for chopping it into predetermined lengths.

Fig. 7 is a sectional view taken along the line 7—7 of Fig. 5 and illustrates the manner in which the differently colored layers of plastic material are combined to form the strip;

Fig. 8 is a sectional view looking toward the line 8—8 of Fig. 7;

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Fig. 9 is a sectional view looking toward the line 9—9 in Fig. 7;

Fig. 10 is a sectional view taken along the line 10—10 of Fig. 7; and

Figs. 11, 12 and 13 are perspective views of the end portions of different plastic strips illustrating other ways in which the differently colored plastic layers may be combined to obtain other gradient color effects.

In Fig. 1 of the drawings, the reference numeral 10 designates a base strip of plastic which may be clear or of any desired color or design. The base strip 10 may be made of any desired length, width and thickness. Embedded in the top surface of the strip 10, as viewed in Fig. 1, is a second strip 11 of plastic material of a color or design in contrast with the color or design of strip 10. It will be noted that the composite or unitary strip composed of the combined strips 10 and 11 is substantially rectangular in cross-section and that its top surface is formed by the top surfaces of the strips 10 and 11 which are flush with each other to provide a plane surface. The remaining surfaces of the unitary strip are formed by the material of strip 10. The top surface of strip 10 is provided with a centrally located, longitudinally extending depression 12 of V-shaped cross-section and in which is located the strip 11 having a triangularly-shaped cross-sectional area conforming exactly to the cross-sectional area of the depression. The depression 12 at the longitudinal center of the combined strip has a depth depending on the color effect to be produced in such area. For example, if strip 10 is made of clear plastic and strip 11 of colored plastic, the area of densest color will appear along the longitudinal center of the strip and the density of this color effect will depend upon the thickness of strip 11 in such region. For the purposes of the invention it has been found that the depth of depression 12 along the centerline of the combined strip or the thickness of strip 11 along its longitudinal center may range from 30 to 150 thousandths of an inch. The sides of the depression 12 and consequently the bottom angularly disposed surfaces of the strip 11 which are integrally united to such sides, slope upwardly gradually from the longitudinal center of the combined strip to the top surfaces of the strip 10. The degree of slope of such sides and surfaces will depend on the color or design effect desired and whether a two-color effect or a gradient effect in a single color is desired. Thus a two-color effect is attained by making the strip 11 of less width than strip 10, as shown in Fig. 1 of the drawings. On the other hand, it will be apparent that if strip 11 is made of the same width as strip 10 it is possible to obtain a graduated effect in a single color. Whatever the desired width of strip 11 relative to strip 10 the sides of depression 12 should taper gradually so that the thickness of strip 11 towards its longitudinal side edges thereof gradually becomes less and less until it is so minute at such edges as to be considered infinitesimal for all practical purposes.

It will be understood from the foregoing description of the unitary strip depicted in Fig. 1 of the drawings, that even though the materials of strips 10 and 11 may have a uniform color appearance, such strip will produce a gradient color appearance when viewed either through the top or the bottom surface thereof. Thus, assuming that the strip 10 is made of clear plastic material and the strip 11 is made of plastic material which has been given a uniform desired transparent, opaque or translucent color, when the unitary strip is viewed as aforesaid, the longitudinal center thereof will show the greatest density of the color of strip 11. The density in appearance of the color in such region will depend on the thickness of strip 11 along its longitudinal center. From the longitudinal center of the unitary strip, the color will fade out gradually in both transverse directions towards the longi-