July 18, 1967 W. P. ROWLAND Re. 26,237

MANUFACTURE OF SPECTACLE FRAMES

Original Filed March 12, 1959 4 Sheets-Sheet 1

Fig. 1.

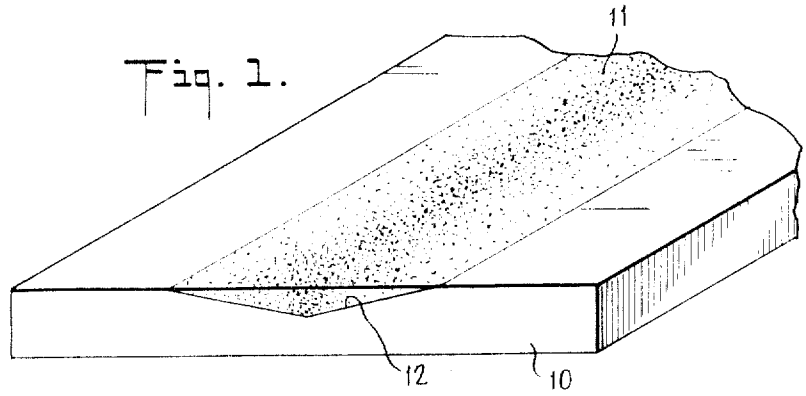


Fig. 2.

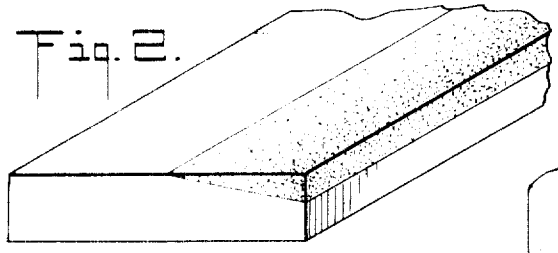

Fig. 3.

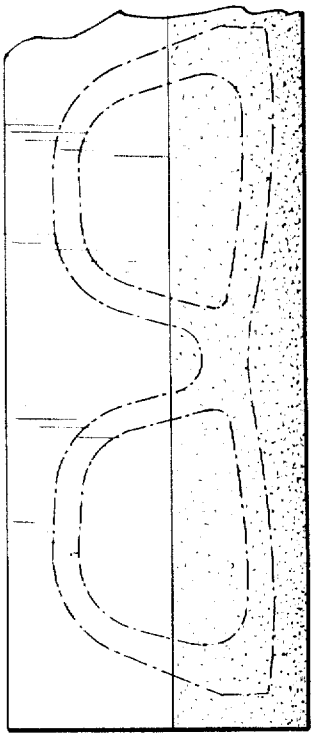

Fig. 4.

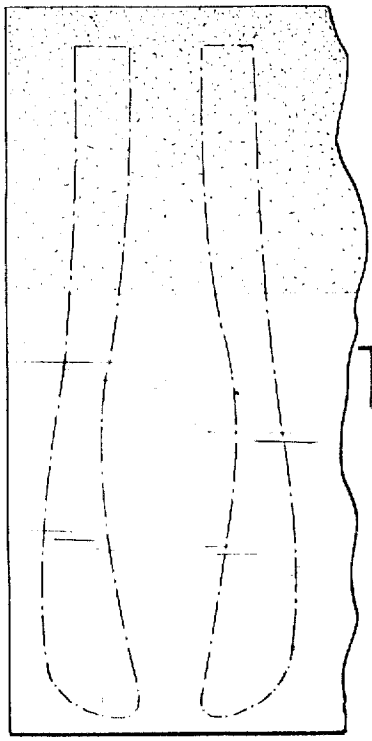

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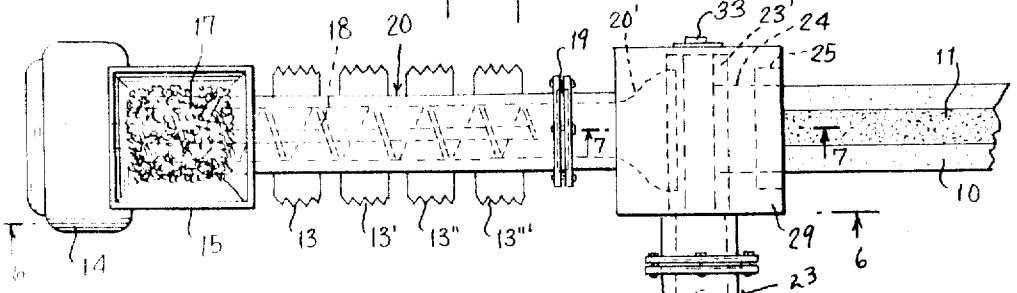
Fig. 5.



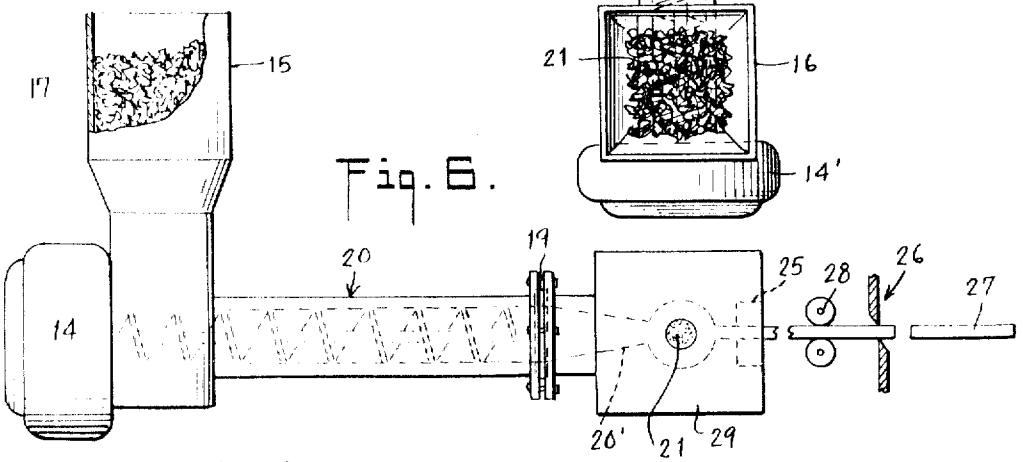




Fig. 6.

Fig. 7.

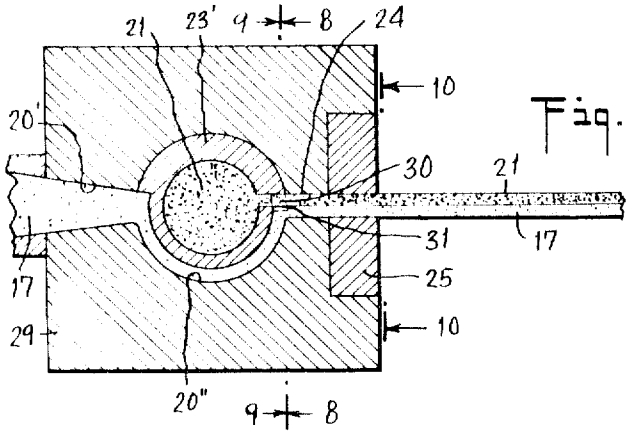



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Fig. 8.

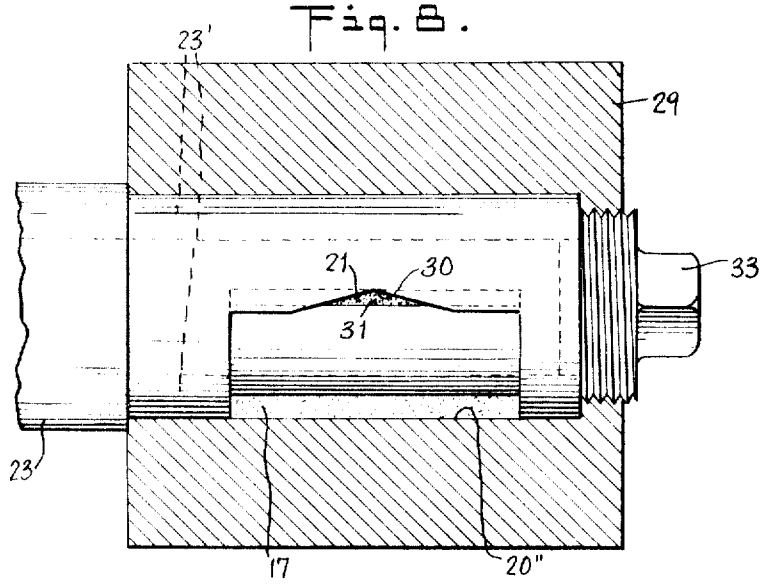


Fig. 9.

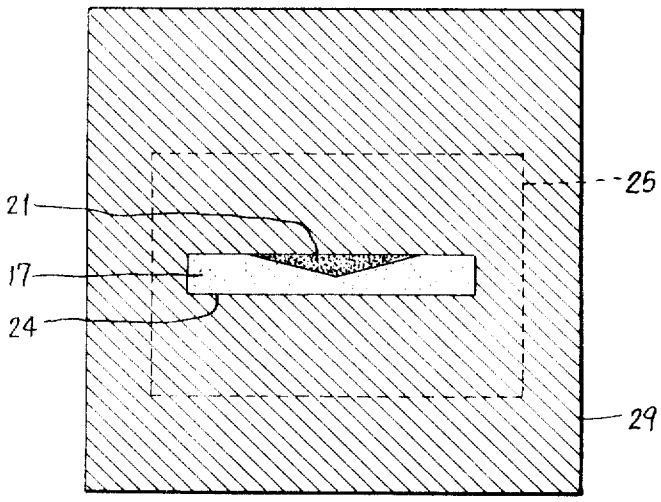


Fig. 10.

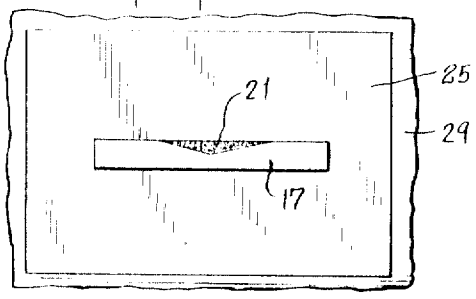


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Fig. 11.

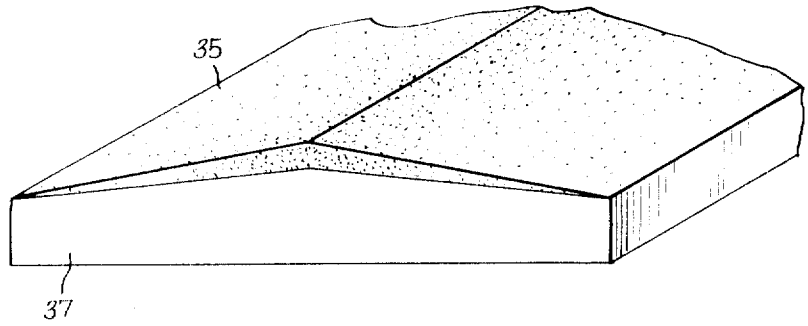



Fig. 12.

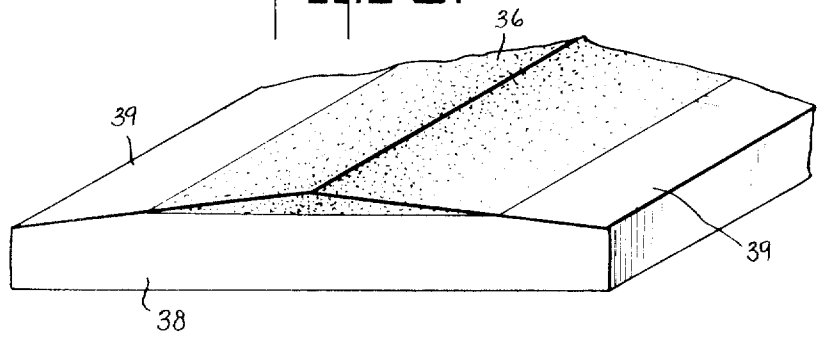
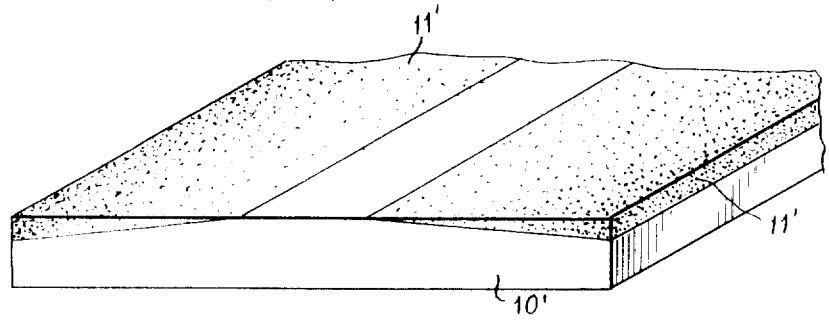



Fig. 13.

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# MANUFACTURE OF SPECTACLE FRAMES

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13 Claims. (Cl. 156—244)

**Matter enclosed in heavy brackets [ ] appears in the original patent but forms no part of this reissue specification; matter printed in italics indicates the additions made by reissue.**

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;

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 longitudinal edges of strip **11**. As the thickness of such edges

is quite small, the color will have the appearance of fading into nothing with no demarcation obserable at a distance between the colored and the clear plastic materials. This effect is even more pronounced when the combined material is observed in the spectacle frame produced from such unitary strip. It will be understood also that color materials may be incorporated in the strips **10** and **11** to provide a non-uniform or mottled appearance or design in which case the color effect produced will be more complicated.

The strips **10** and **11** may be made of any known suitable thermoplastic material such as the acetate and butyrate plastics and of which numerous types are commercially available. Preferably those thermoplastics which have an extrudable temperature of approximately 400° F. and are capable of being laminated with the aid of suitable cements known to the art at temperatures approximating 270° F. are utilized in the practice of the invention. As above indicated the plastic material of either strip **10** or strip **11** may be clear or colored and whether one of such strips is clear or colored, the other strip is preferably made of a contrasting color. For the purposes of describing and claiming this invention, a clear plastic shall be considered as a color. The thermoplastic material of both strips **10** and **11** is preferably the same, this material in the one strip being given a different color than this material in the other strip by incorporating therein a suitable color agent. Thus, if the thermoplastic material is to be given a suitable transparent color, an organic dye such as Quinizarine Green may be incorporated therein. On the other hand, if the material is to be provided with an opaque color, pigments such as Watchung Red or Iron Oxide may be mixed therewith. The thermoplastic material may be given a translucent color by suitably mixing suitable dyes and pigments with the material.

The plastic materials forming the layers **10** and **11** may be combined into a unitary strip with the aid of apparatus such as is illustrated in FIGS. 5 to 10 of the drawings. It will be understood that while such apparatus is described with regard to the production of the unitary strip shown in FIG. 1, it may be modified to produce other forms of such strips as will be readily recognized by those skilled in the art. In the apparatus illustrated the plastic material for strip **10** is deposited in hopper **15** thereof and the plastic material for strip **11** is deposited in hopper **16** thereof. The plastic material is pushed from each hopper into an associated conduit by suitable feed screw mechanism and in the travel of such material through the conduit it is heated to bring it to the desired extruding temperature therefor. Thus in the case of hopper **15**, the plastic material **17** deposited therein in the form of dry pellets is pushed by an associated feed screw **18** driven by a suitable motor **14**, through a conduit which is designated generally by the numeral **20**, and toward an extrusion hole provided in a collar **19** located at the end of the feed screw **18**. In their travel through the conduit **20**, the plastic pellets **17** pass through a plurality of successive heating zones **13**, **13'**, **13"** and **13"'**, which melt the plastic material of such pellets and bring the same to a condition in which it may be properly extruded through the hole in the collar **19**. As indicated in FIG. 5 of the drawings, the zones **13**, **13'**, **13"** and **13"'** may be heated electrically and such zones may be separately controlled to subject the plastic material passing through associated sections of the pipe **20** to any desired arrangement of predetermined temperatures. The extrusion hole in collar **19** is configured so that its discharge end continues in a stream-lined manner into the entry end of a horizontal, longitudinally extending, closed intermediate section **20'** of conduit **20** formed in a block **29**. The conduit section **20'** is formed to gradually change the cross-sectional configuration of the extruded plastic material to an approximately rectangular shape conforming to the shape of the inlet end of a curved end section **20"** of conduit **20** located within the block **29** and having an area approximating that of the cross-sectional area of the unitary strip to be produced.

The hopper **16** is in a position advanced with relation to hopper **15** and the plastic material **21** deposited therein in the form of dry pellets is fed forwardly therefrom through a conduit which is indicated generally by the numeral **23**, by the associated feed screw **181** driven by its own motor **14'** in a manner similar to feed screw **18**. As the pellets of plastic material advance through conduit **23** they pass through successive heating zones **32**, **32'** and **32"**, which function in a manner similar to the heating zones associated with conduit **20** to transform the plastic material of the pellets to the desired molten condition for proper feeding through a discharge opening **30** in a pipe section **23'** as will hereinafter be more fully explained. As is shown in the drawings, pipe section **23'** forms an end extension of the main portion of conduit **23** and is circularly-shaped with a diameter less than the horizontal transverse dimension of the main portion of pipe **23**. The outer end of pipe extension **23'** is closed by a suitable plug **33** threadedly engaged therewith. Pipe **23'** extends across the discharge end of conduit section **20'** and is formed at the place of its intersection with conduit section **20'** of conduit **20** to provide the top and side walls which define such conduit section **20'**. The remaining bottom wall of conduit section **20'** is formed by the block **29**. It will be noted that while the molten plastic masses are being forced through the conduits **20** and **23**, the feed screws **18** and **18'** exert pressure in the advancing direction on the molten masses to force them through the extrusion hole of collar **19** and the discharge opening **30** in pipe **23'**, respectively, and that the latter in each case substantially aids in the creation of a back pressure on the molten mass being forced therethrough, thereby providing a head on each of the streams of molten plastic. By proper control of the speeds of rotation of the feed screws and consequently the heads on the plastic materials fed thereby, the conduits **20** and **23** and the connecting conduit **24** leading to the final extrusion die **25** are kept filled with controlled amounts of the plastic materials under proper pressure so that such materials are caused to flow quietly and without turbulence to die **25** and to be formed by the latter into the correct desired shape.

At the place of intersection of the conduits **20** and **23**, the former curves down under and then around the latter to the other side of conduit **23** to continue as conduit **24** towards the die **25** in a horizontal direction substantially aligned with the direction of feed of conduit **20** up to pipe **23**. It will be noted in FIGS. 6 to 9 of the drawings, that the conduit **23** at such place of intersection has a discharge opening **30** through which the molten plastic material **21** in conduit **23** is discharged into the entry end of conduit **24**. The opening **30** is so located relative to conduit **24** that the plastic material **21** is discharged into the upper central portion of such conduit. Discharge opening **30** has a triangular configuration substantially similar in shape and area to the cross-section of strip **11** but is reversed so that the apex of such opening is on top. The longest side **31** of such opening opposite the apex is tangent to the top surface of the plastic material **17** entering conduit **24** from the curved end of conduit **20** so that a triangular ribbon of the plastic material **21** passing through opening **30** is laid upon the longitudinal central portion of such top surface as the material **17** flows by such opening. Because of the form of opening **30**, the plastic material **21** will form a stream of like configuration as it is deposited on the plastic material **17**. However, as the two layers or streams of molten materials **17** and **21** move away from the opening **30**, the material **21** will reverse itself so that by the time such materials reach the portion of conduit **24** indicated by the dotted lines **10—10** they will have the configuration shown in FIG. 10 of the drawings.

The die **25** will give the materials **17, 21** the final correct configuration they will have as strips **10** and **11**, respectively, in the unitary plastic strip. As a result of this operation also, the combined plastic materials forming the composite strip will have an "as extruded" surface appearance in their hardened condition, as distinguished from the surfaces provided by press-polishing, machining, skiving, or otherwise treating the plastic material. As the composite strip leaves the die **25**, the plastic materials are air cooled and at a place spaced from such die, the strip formed thereby is fed into the field of action of cutting instrumentalities **26** which while the strip moves continuously therethrough, chops the strip into predetermined lengths **27**. A twenty-six inch length of the type of strip shown in FIG. 1 of the drawings will provide sufficient material for eight frames, whereas sixteen or eighteen frames may be obtained from a fifty-two inch length thereof. The manner in which such frames may be cut out of the strip lengths **27** is indicated in FIG. 3 of the drawings while FIG. 4 indicates the manner in which the temples for such frames may be cut out of the strip lengths. The spectacle frames and temples may be cut from the strip lengths **27** by feeding the latter to a suitable stamping machine of known construction, or by cutting such spectacle parts from the strips in other ways known to the art.

It will be understood that the strip formed as aforesaid may have a width equal to the combined width of a plurality of the strips shown in FIG. 1. In the production of such a strip, the conduit **23** would be provided with a plurality of openings **30** to deposit a plurality of spaced strips of the molten plastic material **21** upon the stream of molten plastic material **17**. The resulting cooled strip may then be cut longitudinally as by the revolving knives **28** in FIG. 6 into a plurality of separate strips such as shown in FIG. 1 before feeding the processed material to the cutting mechanism **26**. The strip shown in FIG. 1 of the drawings may also be cut longitudinally by the knives **28** to provide two strips of the configuration shown in FIGS. 2 and 3 of the drawings and which are then chopped into the desired lengths. The strip of FIGS. 2 and 3 can, of course, be made originally in the form shown according to the method described with respect to the strip of FIG. 1 by making the obvious necessary changes in the various material discharge openings.

Instead of forming the strip **11** as a single strip in the longitudinal center of the base strip **10**, the former may be formed as two divided strips **11', 11'** along the longitudinal side edges of the strip **10'** as illustrated in FIG. 13 of the drawings. In the construction of the strip of FIG. 13 it is preferred that the color of the strips **11', 11'** fade into the longitudinal central portion of strip **10'**. Accordingly, the strips **11', 11'** will have their greatest thicknesses at the side edges of strip **10'**. It is obvious, however, that such condition may be reversed to obtain a different desired color effect.

FIGS. 11 and 12 illustrate two further constructions that may be made and in which the longer sides of the triangularly-shaped strips **35** and **36** are joined with the top surfaces of the base strips **37** and **38**, respectively, so that the shorter angularly disposed sides of such strips extend upwardly from and form apexes above such top surfaces. In the construction of FIG. 11, the base strip **37** has a ridged top surface and the triangularly-shaped strip **35** has width equal to that of such base strip so that the gradient density material formed by such strips has a gradual changing color effect throughout its entire width. Thus, if strip **37** is made of clear plastic material and strip **35** of colored plastic material, the gradient density material will have the greatest density of the color of strip **35** along its longitudinal center and such density of color will fade out gradually towards the side edges of such gradient density material. In the construction of FIG. 12, the strip **36** is narrower than the base strip **38** to provide a color effect which is somewhat similar to that produced by the composite strip of FIG. 1. It will be noted also in connection with the construction of FIG. 12 that the top surfaces of the longitudinal edge portions **39, 39** of the base strip **38** are inclined so that they are in the same plane with and form a continuation of the upper inclined surfaces of the triangularly-shaped strip **36**.



While I have hereinabove illustrated and described preferred methods of manufacturing spectacle frames in accordance with the invention, it will be apparent to those skilled in the art that various changes and modifications may be made therein without departing from the spirit of the invention or the scope of the appended claims. Thus, instead of making the second strip **11** in FIG. 1 of triangular cross-sectional area, such strip may be made of any other suitable cross-sectional configuration, such as semi-elliptical. Also the strip **11** need not conform in cross-sectional area exactly to the cross-sectional area of the depression, but may have a cross-sectional area differing from that of the latter both in configuration and size. Also, when it is stated that the edges of such a strip **11** are practically infinitesimal in thickness, it will be understood that such edges will have measurable thickness. It is also within the contemplation of the invention to construct the strip **11** so that the edges thereof will have a fairly substantial thickness. It will be apparent also that the strips combined to form the composite strip of this invention may have other configurations than those hereinabove described and illustrated in the drawings to obtain different gradient color effects. With regard to those composite strips produced in the manner above described, it is of interest to note that a reversal of the plastic material superposed on the base strip as in the strip of FIG. 1, usually occurs when the latter is formed as a flat strip having a substantially rectangular cross-sectional configuration. When, however, the base strip is made in other forms, such as the wedge-shaped forms shown in FIGS. 11 and 12, this reversal of the material superposed on the base strip does not take place and the latter solidifies on the base strip in substantially the form in which it is deposited thereon. The above described method of making the composite strips may also be slightly modified to produce still further variations in the forms of the strips. Thus, instead of having the conduit **20** curve under the conduit **23** at the place of intersection thereof, the pipe section **23'** and block **29** may be formed to cause the conduit section **20''** to curve up and over the pipe section **23'** and to discharge into the upper portion of conduit **24**. In the use of this arrangement therefore, the plastic material **17** to form the base strip of the product is discharged from section **20''** upon the stream of molten plastic material **21** feeding through the opening **30** of pipe section **23'**. It will also be apparent that the pipe section **23'** and block **29** may be formed so that conduit section **20''** may be constituted of two passages extending over and under the pipe section **23'** and discharging the plastic material **17** into the entry end of conduit **24** above and below the opening **30** in pipe section **23'**. In the use of such a construction, the plastic material **21** discharging through opening **30** will be sandwiched between the material **17** coming from the dual discharge ends of pipe section **20''**. By changing the configuration of such dual discharge ends and the opening **30** a number of additional forms of the composite strip may be attained.

I claim:

**1.** The method of making spectacle parts, comprising forming a light-transmittible, composite, rectilinear strip having substantial ridigity at ordinary temperatures by uniting *in a closed conduit* to a *molten stream of synthetic plastic material for a* base layer of light-transmittible plastic material of a given color and of substantial rigidity at ordinary temperatures, a second *molten stream of synthetic plastic material to form a second* layer of a differently colored light-transmittible plastic material having

an area of maximum thickness and gradually diminishing in thickness from such area and for a major part of the width of said second layer to an edge thereof so that the thickness of the latter is practically infinitesimal; *cooling said united streams to form said substantially rigid composite strip;* and cutting such composite strip to produce a spectacle part having a gradient color appearance.

2. The method of making spectacle parts which comprises feeding a rectilinearly-shaped molten stream of light-transmittible plastic material of a given color and of substantial rigidity at ordinary temperatures through a closed conduit of a given rectilinear cross-sectional configuration, joining with said stream a rectilinearly-shaped molten ribbon of light-transmittible plastic material of a given color contrasting with the color of said stream of plastic material and of substantial[ly] rigidity at ordinary temperatures, and having a cross-sectional area such that said ribbon has an area of maximum thickness extending lengthwise thereof and gradually diminishes in thickness from such area of maximum thickness and for a major part of the width of such ribbon toward a longitudinal edge thereof, cooling said joined plastic materials to form a substantially rigid composite strip thereof, and cutting out spectacle parts from the composite strip material in such manner and that the gradient layer thereof provides a gradient color appearance in the part.

3. The method defined in claim 2 in which said molten ribbon is continuously deposited on a surface of said molten stream as said stream continuously flows past the place of deposit of said ribbon and so that the composite strip formed therefrom will have given light-transmitting characteristics.

4. The method of making spectacle parts which comprises feeding a rectilinearly-shaped molten stream of light-transmittible plastic material of a given color and of substantial rigidity at ordinary temperatures through a closed conduit of a given rectilinear cross-sectional configuration to a place of juncture and at the latter causing said stream to bend in its flow; joining with said stream at such bend in the flow thereof a second rectilinearly-shaped molten stream of light-transmittible plastic of a given color contrasting with the color of said first stream of plastic material and having a longitudinally extending area of maximum thickness and gradually diminishing in thickness from such area and for a major part of the width of said second stream toward a longitudinal edge thereof, cooling said materials to form a substantially rigid composite strip thereof and cutting spectacle parts from such composite strip in such manner that the gradient layer thereof provides a gradient color appearance in the cut spectacle part.

5. The method defined in claim 4 in which said first stream at said place of juncture is flowing in a direction transverse to the direction of flow of said second stream to said place of juncture and is bent into a horizontal path of flow, and in which said second stream is discharged through an opening at said place of juncture so as to be fed into substantially tangential relation with a surface of said first stream.

6. The method defined in claim 4 in which said second stream is superposed on said first stream with its cross-section inverted from the condition it will have in the finished composite strip and in which said first stream is given a substantially rectangular cross-sectional configuration by said closed conduit such that as the combined streams flow away from said place of juncture, the cross-section of said second stream is caused to reverse itself from its deposited condition to the condition it will have in the finished composite strip.

7. The method defined in claim 4, in which said cooled composite strip is cut longitudinally to provide a plurality of substantially similarly constructed strips before feeding such strips to the spectacle part cutting means.

8. The method of making spectacle frames which comprises *feeding a molten stream of light-transmittible synthetic plastic material into a closed conduit, feeding into said closed conduit a second molten stream of light transmittible synthetic plastic material having a color contrasting to that of the first stream to cause said streams to unite in said conduit to form* [taking] a rectilinearly-shaped, gradient density material having substantial rigidity at ordinary temperatures and formed of two strips of contrasting colored light transmittible plastic material and one of which gradually diminishes in thickness over a given area for a major part of the width of the strip thereof to produce a gradient color appearance in such area, *cooling said united streams to form a substantially rigid composite material,* then cutting out the spectacle part from such material in such manner that the gradient color appearance thereof appears in such part.

[9. A spectacle part having a gradient color appearance and composed of two layers of material, one of said layers being composed of plastic material of a given color, and the other of said layers being joined with said one layer and being composed of plastic material of a given color contrasting with the color of said one layer, said layers being joined by the direct cohering engagement of opposed surface portions thereof with the aid of heat, said other layer having an area of maximum thickness and gradually diminishing in thickness from such area of maximum thickness toward an edge thereof, whereby said layers in the area occupied by both said layers thereof provides in the area of maximum thickness of said other layer the greatest density of color of said other layer and outside of such area of maximum thickness a gradual fading of such color from such area toward the edge of said other layer.]

[10. A spectacle part such as defined in claim 9, in which said one layer is substantially greater in cross-sectional area than said other layer and constitutes the body layer, and in which said other layer continuously diminishes in thickness to edges thereof at which its thickness is practically infinitesimal.]

[11. An intermediate product for use in the manufacture of spectacle parts comprising a composite strip composed of two layers of material, one of said layers beincomposed of plastic material of a given color, and the other of said layers being joined with said one layer and being composed of plastic material of a given color contrasting with the color of said one layer, said layers being joined by the direct cohering engagement of opposed surface portions thereof with the aid of heat, said other layer having an area of maximum thickness and gradually diminishing in thickness from such area of maximum thickness toward an edge thereof, whereby said layers in the area occupied by both said layers thereof provides in the area of maximum thickness of said other layer the greatest density of color of said other layer and outside of such area of maximum thickness a gradual fading of such color from such area toward the edge of said other layer.]

[12. An intermediate product such as defined in claim 11, in which said one layer is substantially greater in cross-sectional area than said other layer and constitutes the body layer, and in which said other layer continuously diminishes in thickness to edges thereof at which its thickness is practically infinitesimal.].

13. The method of making plastic material parts which comprises forming a light-transmittible composite rectilinear strip having substantial rigidity at ordinary temperatures by uniting *in a closed conduit* to *a molten stream of synthetic plastic material forming* a rectilinearly-shaped base layer of light-transmittible plastic material of a given color and of substantial rigidity at ordinary temperatures, a second *molten stream of synthetic plastic material to form a second* layer of a differently colored light-transmittible plastic material having an area of maximum thickness and diminishing in thickness from such area

and for a major part of the width of such second layer toward a longitudinal edge thereof, and controlling the thicknesses of said layers so that the resulting composite strip at the thickest part thereof is capable of transmitting light, *cooling said united streams to form a substantially rigid composite strip,* and cutting such composite strip to produce a part having a gradient color appearance.

**14.** The method of making plastic material parts, which comprises forming a light-transmittible composite rectilinear strip of substantial rigidity at ordinary temperatures from which such a part having a gradient color appearance may be produced, by bringing together *and uniting in a closed conduit* into direct cohering engagement with the aid of heat, opposed surface portions of a rectilinearly-shaped base *stream* of *molten* light-transmittible plastic material of a given color and of substantial rigidity at ordinary temperatures, and a *stream* [strip] of a differently colored light-transmittible plastic material having an area of maximum thickness and diminishing in thickness from such area and for a major part of the width of such [strip] *stream* toward a longitudinal edge thereof, *and cooling said united streams to form said composite strip.*

**15.** The method of making plastic material parts, which comprises [taking] *forming* a light-transmittible composite, rectilinear strip of substantial rigidity at ordinary temperatures and composed of a base of light-transmittible plastic material of a given color to which is united a strip of a differently light-transmittible colored plastic material having an area of maximum thickness and diminishing in thickness from such area and for a major part of the width of such strip toward a longitudinal edge thereof *by uniting in a closed conduit two molten streams of differentially colored synthetic plastic material and cooling said united streams,* and advancing said composite strip into the field of action of cutting instrumentalities, and then in such field of action cutting parts from such composite strip in such manner that each of said parts has a gradient color appearance.

**16.** The method of making plastic material parts which comprises forming a light-transmittible composite, rectilinear strip of substantial rigidity at ordinary temperatures from which such a part having a gradient color appearance may be produced, by bringing together *and uniting in a closed conduit* into direct cohering engagement with the aid of heat, opposed surface portions of a rectilinearly-shaped base *stream* of *molten* light-transmittible plastic material of a given color and a [strip] *molten stream* of a differently colored plastic material capable of transmitting light and with its color uniformly distributed throughout its entire volume and having an area of maximum thickness and diminishing in thickness from such latter area and for a major part of the width of such [strip] *second-mentioned stream* toward a longitudinal edge thereof, and controlling the thickness of said base *stream* and [strip] *said second-mentioned stream* so that in said area of maximum thickness said composite strip is capable of transmitting light *and thereafter cooling said united streams to form said composite strip.*



**17.** The method of making plastic material parts which comprises forming a light-transmittible composite, rectilinear strip of substantial rigidity at ordinary temperatures from which such a part having a gradient color appearance may be produced, by bringing together *and uniting in a closed conduit* into direct cohering engagement with the aid of heat, opposed surface portions of a rectilinearly-shaped base *stream* of *molten* light-transmittible plastic material of a given color and a *molten stream of a* differently colored plastic material capable of transmitting light and with its color uniformly distributed throughout its entire volume, and forming said *stream of* differently colored plastic material to provide it with an area of maximum thickness and diminishing thickness from such area and for a major part of the width of such [strip] *second-mentioned stream* toward a longitudinal edge thereof and with outer surface portions disposed at an angle to underlying surface portions of said base material, *stream* and controlling the thickness of said base *stream* and [strip] *differentially colored stream* so that in said area of maximum thickness said composite strip is capable of transmitting light *and thereafter cooling said united streams to form said composite strip.*


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