United States Patent

[11] 3,599,359

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[45] Patented **Aug. 17, 1971**

[54] **JEWELRY PIECE**
8 Claims, 13 Drawing Figs.

[52] **U.S. Cl.** **40/10, 63/1**
[51] **Int. Cl.** **G09f 3/18**
[50] **Field of Search** 40/2, 10, 158, 152, 135

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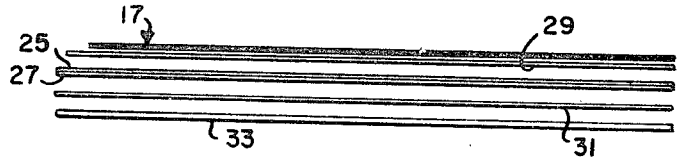
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ABSTRACT: A jewelry piece comprising a jewelry body member, a bezel channel formed in the body member, and a sign plate mounted in the bezel channel, said sign plate including a developed photographic film with intelligence thereon, and a reflecting backing on the film, said sign plate being beveled.

A method for making a series of sign plates of the same design for jewelry pieces, comprising photographing artwork on a series of frames of film having sprocket holes so that the artwork on each frame is registered with respect to the sprocket holes, developing the film to obtain a roll of film frames, affixing a reflecting backing to the developed film, positioning each film frame precisely beneath a stamping die by using the sprocket holes, stamping out the sign plates, affixing the sign plates to a jewelry piece body, and beveling the sign plate.

A sign plate comprising a developed photographic film with intelligence thereon, and a reflecting backing on the developed film.

A method of making a sign plate comprising a photographing artwork on film, developing the film to obtain a developed film with intelligence thereon, and affixing a reflecting backing to the film.



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SHEET 1 OF 2

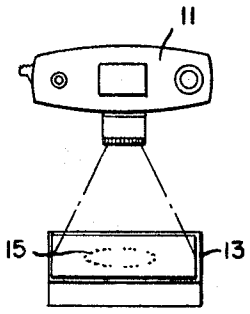


FIG. 1.

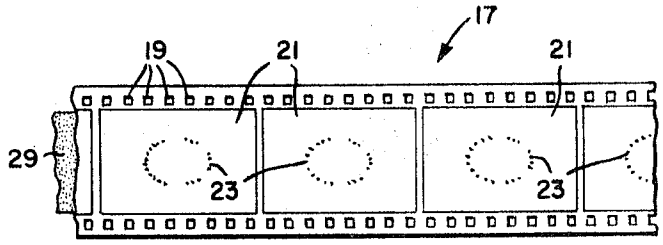


FIG. 2.

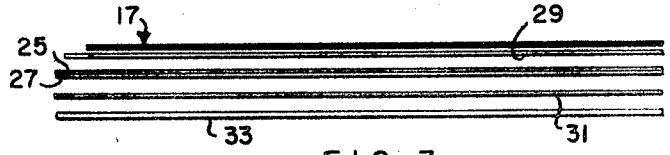


FIG. 3.

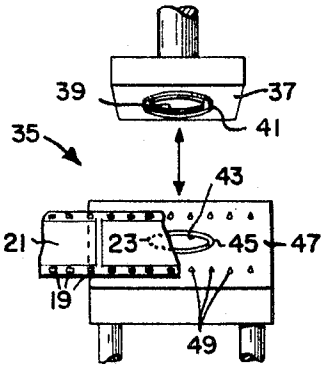


FIG. 4.

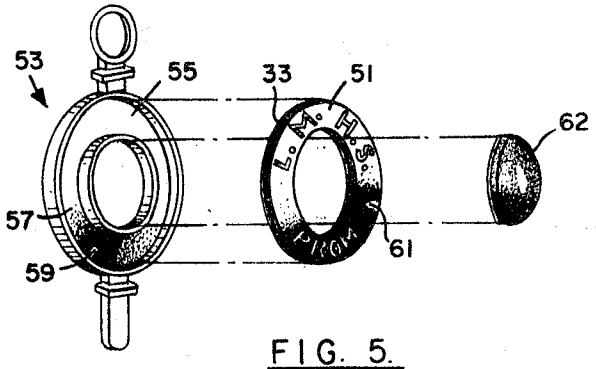


FIG. 5.

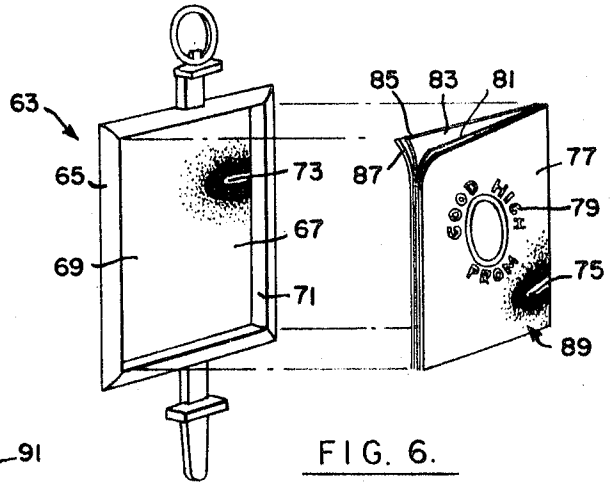


FIG. 6.

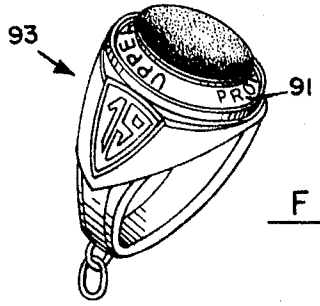


FIG. 7.

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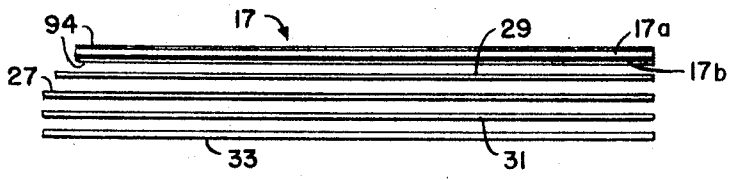


FIG. 8.

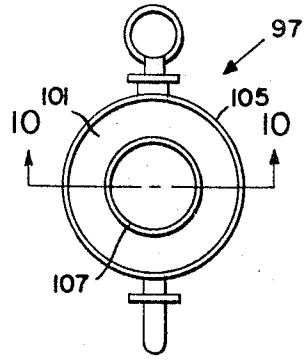


FIG. 9.

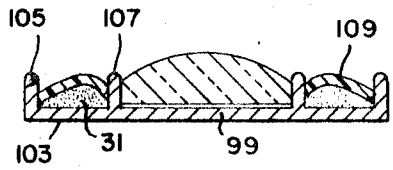


FIG. 10.

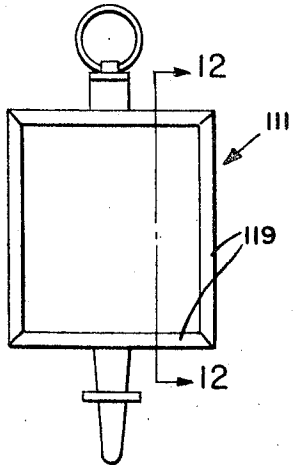


FIG. 11.

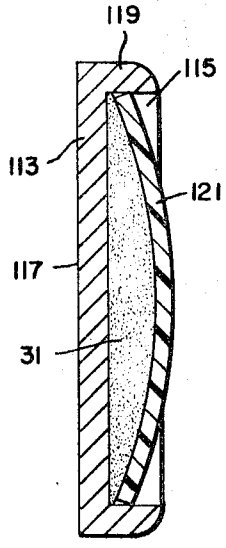


FIG. 12.

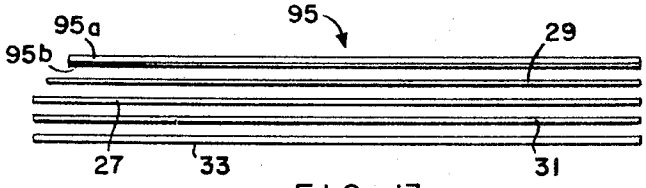


FIG. 13.

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JEWELRY PIECE

BACKGROUND OF THE INVENTION

This invention relates to sign plates and more particularly concerns jewelry pieces such as prom favors including miniature class rings, charms and the like.

At a school dance or prom, it is a usual custom to provide souvenirs for those who attend the prom and the souvenirs may take the form of prom favors such as miniature school rings with the words "Junior Prom," cast in the bezel channel. Instead of miniature rings, the prom favor may be a charm or a key also having the words "Junior Prom" cast in the metal.

It has long been desired to include the name of the school or college on the prom favor as well as the words "Junior Prom." However, this would require a separate stamping die for each school or college, and the die cost would boost the cost of the prom favor to such an extent that its sales price would be prohibitive, especially if a small number of prom favors were ordered. Besides this cost disadvantage, the making of such dies takes some time, and requires that the prom favors be ordered far in advance of the prom date. Since proms involve a great number of people and many details, it is very often not possible to order the correct number of prom favors far enough in advance to permit the making of such dies.

SUMMARY OF THE INVENTION

It is an object of this invention to provide jewelry such as prom favors, school awards, souvenir items, including miniature rings, charms and the like which overcomes the problem of the prior art. Such jewelry may include the name of the school or college, and the year, in addition to the words "Junior Prom" or "Senior Prom" or other description.

It is another object to provide a method whereby jewelry may be made inexpensively and quickly, without involving the expense and time delay of making dies.

The prom favor or jewelry piece of the invention includes a jewelry body member, a developed photographic film with intelligence thereon such as "Lower Merion H. S. 1976," and a reflecting backing on the developed film forming a decorative plate therewith, with the decorative plate being mounted on the jewelry body member.

The method of making a multiplicity of substantially identical jewelry pieces, such as prom favors, comprises the steps of photographing artwork on a series of frames on film having sprocket holes so that the artwork on each frame is registered with respect to the sprocket holes, developing the film to obtain a roll of developed film frames with intelligence thereon, affixing a reflecting backing to the developed film, affixing an adhesive layer and cover sheet to the reflecting backing, positioning each film frame with reflecting backing and cover sheet precisely beneath a stamping die by using the sprocket holes, stamping out a decorative plate, mounting the decorative plate on a jewelry body member, and beveling the decorative plate.

More generally, the sign plate includes a developed photographic film with a reflecting backing, and the method includes preparing artwork, photographing it, developing the film, and affixing a reflective backing to the developed film.

BRIEF DESCRIPTION OF THE DRAWINGS

Other objects and advantages of the invention, including its simplicity and economy, will further become apparent hereinafter and in the drawings, in which:

FIG. 1 is a schematic view of a 35-millimeter camera which utilizes film having sprocket holes for feeding successive frames of film to photographing position, with the camera being positioned over a table adapted to support artwork to be photographed;

FIG. 2 is a view in top plan of the photographic film after it has been developed;

FIG. 3 is a view in side elevation of the developed film and sheets which are attached thereto during the course of preparing a sign plate;

FIG. 4 is a schematic view of a cutting die including a reciprocable top cutting die member and a bottom die plate having a series of bosses which are adapted to receive the sprocket holes of the developed film;

FIG. 5 is an exploded view of a prom favor such as a charm or key constructed in accordance with this invention;

FIG. 6 is a view of an alternative embodiment of a charm;

FIG. 7 is a view of a miniature ring prom favor constructed in accordance with the invention;

FIG. 8 is a view similar to FIG. 3 of another embodiment showing developed film and sheets which are attached thereto during the course of preparing a sign plate;

FIG. 9 is a top plan view of a jewelry piece having a beveled sign plate in the bezel channel;

FIG. 10 is a view in section, taken as indicated by the lines and arrows 10–10 which appear in FIG. 9 showing the bevel;

FIG. 11 is a view in top plan of another jewelry piece having a beveled sign plate;

FIG. 12 is a view in section, taken as indicated by the lines and arrows 12–12 which appear in FIG. 11, showing the bevel; and

FIG. 13 is a view similar to FIGS. 3 and 8 of another embodiment showing developed film and sheets which are attached thereto during the course of preparing a sign plate.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

Although specific terms are used in the following description for clarity, these terms are used to refer only to the structure shown in the drawings and are not intended to define or limit the scope of the invention.

Turning now to the specific embodiments of the invention selected for illustration in the drawings, there is shown in FIG. 1 a 35-millimeter camera 11 with stop action that is positioned over a table 13 adapted to support artwork 15. The artwork 15 may be made of paperboard and is easily changed or other artwork substituted therefor. For example, the artwork could spell out in an oval the legend "Lower Merion H. S. Senior Prom 1976," or "Frankford High School Junior Prom" or "Drexel Institute of Technology" or whatever.

If 100 prom favors are ordered, the camera is set at 100 and it is automatically exposed 100 times to give 100 frames of exposed film. The exposed film is developed to give a developed film 17 having sprocket holes 19 which were used to feed the film into photographing position in the camera, and a series of substantially identical film frames 21, all with the same intelligence 23 such as "Lower Merion H. S. Senior Prom 1968" thereon. The intelligence 23 is on each frame 21 and is registered with respect to the sprocket holes 19 so that each frame is substantially identical.

Having developed this film to obtain a roll of developed film 17 with intelligence 23 thereon, the next step is to affix a reflecting backing to the developed film 17. The reflecting backing simulates precious metal or metallic color and includes a transparent color sheet 25 having a reflecting backing layer 27. Color sheet 25 may be impregnated with a coating of transparent yellow, and reflecting layer 27 may be a sheet of silver. Reflecting backing layer 27 is bonded to film negative 17 such as by a first adhesive layer 29, although layer 27 may be attached to negative 17 by silk screening, stamping or any other means.

An alternate method of obtaining the gold color is to coat the film 17 after developing. Then a reflecting backing layer 27 is bonded to the film negative 17 as by having a pressure-sensitive adhesive layer on the facing surface of the backing layer 27.

Another method obtaining the metallic color is to use color film and color artwork. Transparent or opaque colors are obtained by using color artwork of the proper depth of color or by varying the intensity of the photographic lighting.

A second pressure-sensitive adhesive layer **31** is used to affix a cover sheet **33** to reflecting layer **27**.

The assembled layers of the unit shown in FIG. **3** are made into a sign plate by positioning the assembled sheets in a cutting die **35** shown in FIG. **4** having a reciprocable top die **37** with an inner oval cutting die **39** and an outer oval cutting die **41** that are adapted to be received by inner oval recess **43** and outer oval recess **45** in bottom die table **47**. A series of bosses **49** protrude upwardly from die table **47** and receive sprocket holes **19** of film negatives **17**, or a channel may receive the photographic film and a pin may be used to properly position the frames for cutting.

Each film frame **21** with its reflecting backing and cover sheet is precisely positioned beneath top cutting die by placing the sprocket holes **19** into the bosses **49**, and a sign plate **51** is cut out of the composite layers of FIG. **3** by operating the cutting die **35**. Then sign plate **51** is mounted onto a jewelry piece body member **53** as shown in exploded view in FIG. **5**. Body member **53** includes a bezel channel **55**, and the sign plate **51** is in the form of an oval and is affixed to bezel channel **55** by stripping away cover sheet **33** and placing second adhesive layer **31** in contact with bottom wall **57** of bezel channel **55**.

The stripping away of cover sheet **33** and exposing adhesive layer **31** is a very advantageous step in the method because the adhesive covers the entire surface up to the edge, the adhesive is not wet and messy, and is dry or cured when placed into contact with bottom wall **57**. Therefore no drying time or continued pressure is required. Without this adhesive layer **31** and cover sheet **33**, after cutting sign plate **51** a layer of adhesive would have to be applied to reflecting layer **27** or to bottom wall **57**, and this is difficult to apply to cover this small surface completely and evenly, and would cause delay because of the drying time of the adhesive and the pressure that would have to be applied while drying. This pressure-sensitive adhesive also permits the beveling step since the adhesive remains pliable and allows the sign plate to bevel.

Bottom wall **57** has edges which are covered by a color coating **59**, black for black and white film and any color for color film, that is applied to the edges before the sign plate is affixed to the bezel channel. The step of applying color coating **59** to bottom wall **57** may be eliminated if the fit between sign plate **51** and bezel **55** is sufficiently close.

The intelligence **23** appearing on the film frame **21** is transparent and is defined by color portion **61** of the film negative. Accordingly, color coating **59** merges with the color portion **61** of the negative to give a pleasing tight-fit appearance, yet allowing the sign plate to be smaller than the bezel channel so as to permit easy insertion of the sign plate into the bezel channel. A stone **62** is adhesively mounted in the center of body member **55**.

FIG. **6** illustrates another embodiment of the invention comprising a jewelry piece **63** having a body member **65**, a rectangular recess **67** formed in body member **65** and a bottom wall **69** with edges surrounded by sidewalls **71**, with the edges having a black or other color coating **73** that merges into black or other color portions **75** of film **77**. Black portions **75** define intelligence **79** which is transparent in film **77**. A first adhesive layer **81** attaches film **77** to a reflecting backing including transparent color sheet **83** and a reflecting layer **85**, and a pressure-sensitive adhesive layer **87** attaches rectangular decorative plate **89** to recess **67**. Rectangular sign plate **89** is cut out of an assembled layer unit using a cutting die similar to cutting die **35** but having rectangular cutting edges.

FIG. **7** illustrates a decorative plate **91** mounted on a miniature ring **93** used as a prom favor.

FIG. **8** shows the layers or sheets of another sign plate including developed film **17** with its acetate **17***a* and emulsion layer **17***b*, color coatings **94** which may be a yellow dye, first adhesive layer **29**, reflecting layer **27**, second adhesive layer **31**, and cover sheet **33**.

The method of preparing a sign plate from the sheets of FIG. **8** includes the steps of photographing artwork on a series of frames on a roll of film **17** having sprocket holes so that the artwork on each frame is registered with respect to the sprocket holes, developing the film to obtain a roll of developed film with intelligence and background thereon, coating the film **17** with transparent color layers **94** as by immersing the developed roll of film in a yellow dye, affixing a reflecting backing layer **27** to film **17** by adhesive layer **29**, affixing a cover sheet **33** to reflecting layer **27** by adhesive layer **31**, cutting out the sign plate, removing the cover sheet **33**, and applying the sign plate to a jewelry piece body.

FIG. **13** shows the layers or sheets of another sign plate including developed color film **95** with its acetate layer **95***a* and emulsion layer **95***b*, first adhesive layer **29**, reflecting layer **27**, second adhesive layer **31**, and cover sheet **33**.

FIGS. **9** and **10** illustrate another embodiment of the invention comprising a jewelry piece **97** having a body member **99** and a bezel channel **101** defined by bottom wall **103**, outer wall **105**, and inner wall **107**. A sign plate **109** is affixed to the bezel channel **101** by adhesive layer **31**, and may be any of the sign plates previously described. However, sign plate **109** is beveled so as to more nearly simulate the bevel of a cast jewelry piece, and so as to reflect light when jewelry piece **97** is held at any attitude or angle. This beveling is accomplished by heating and drying the jewelry piece **97** after it has been assembled. It is to be noted that the inner edge of sign plate **109** rises higher on inner wall **107** than the position of the outer edge of sign plate **109** on outer wall **105**.

FIGS. **11** and **12** show another embodiment of the invention comprising a jewelry piece **111** having a body member **113** with a rectangular recess **115** formed by bottom wall **117** and sidewalls **119**. A rectangular sign plate **121** is positioned in recess **115** and affixed to body member **113** by its adhesive layer **31**. Sign plate **121** is beveled so as to reflect light at many attitudes, and this beveling is along the longer dimension of the rectangular plate **121**. The beveling is accomplished by heating and drying jewelry piece **111** after assembly. The heat and drying also tends to cause beveling across the shorter dimension of rectangular plate **121**, but the beveling of the longer dimension overcomes this tendency.

The heating and drying step tends to cause all edges of the sign plate to move towards each other to form a bevel. It is thought that the heat and drying acts on the emulsion layer of the film and on the adhesive layers to contract them and cause less contraction of the top surface of the acetate layer of the film.

Besides causing the sign plate to assume an attractive bevel, the heating and drying step enhances the cure of the pressure-sensitive adhesive holding the sign plate and the stone.

If desired, the intelligence on the sign plate may be reversed so as to be black or another color, while the remainder of the negative is transparent. Of course, with color film the intelligence and background may be any color.

The reflecting backing may be a sheet of plastic film which has been metallized by vacuum deposition of silver or other reflective metal. Also, the reflecting backing may be a sheet of gold or the like which is stamped, printed, dyed, glued, laminated or screened onto sheet **25** or film negative **17**.

The sharpness of detail of the film negative sign plate is much greater than the sharpness obtained by a casting or stamping process, and this is more noticeable in small items such as prom favors. It is also much sharper than the sharpness obtained by any printing process or by stamping onto an acetate sheet. Any printing process starts with a photographic film from which a plate is made with loss of detail, then the plate is used for printing with further loss of detail. My inventive process uses the photographic film itself.

It is to be understood that the form of the invention herewith shown and described is to be taken as a presently preferred embodiment. The sign plate may be used in prom favors, nameplates, etc. Various changes may be made in the shape, size and arrangement of parts. For example, equivalent elements may be substituted for those illustrated and described herein, parts may be reversed, and certain features

of the invention may be utilized independently of the use of other features, all without departing from the spirit or scope of the invention as defined in the subjoined claims.

I claim:

1. In a custom jewelry piece and the like, a body member, a recess formed in the body member, a developed photographic film transparency, customer-identifying indicia formed in said transparency against a contrasting color background, a reflecting backing layer, a first bonding layer attaching one side of the reflecting backing layer to said transparency, and a second bonding layer attaching the other side of the backing layer to the recess of said body member.

2. The piece of claim 1 wherein said film transparency is black and white film coated with a transparent color.

3. The piece of claim 1 wherein said film transparency is color film whereby to obtain transparent colors.

4. The piece of claim 1 wherein said film transparency is beveled to reflect light at many angles.

5. The piece of claim 1 wherein said reflecting backing layer includes a transparent color sheet mounted thereon.

6. The piece of claim 5 wherein said transparent color sheet is impregnated with a transparent coating of yellow, and the reflecting layer is a reflecting metal of silver color, whereby the reflected color appears as metallic gold.

7. The piece of claim 1 wherein said recess includes a bottom wall with upstanding sidewalls rising therefrom, said bottom wall having edges which are coated with the same color as the edges of said film transparency so that the edges of the film transparency merge into the edges of the recess bottom wall.

8. The piece of claim 1 wherein said body member is in the form of a key such as a traditional school prom key, said recess is in the form of an oval surrounding a second central recess adapted to receive a simulated precious stone, and said customer identifying indicia recites the name of the customer's school and the event being commemorated by the key such as the senior prom.