

[54] JEWELRY PIECE AND METHOD

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Related U.S. Application Data

[62] Division of Ser. No. 764,548, Oct. 2, 1968, Pat. No. 3,599,359.

[52] U.S. Cl.156/58, 29/160.6, 63/15, 63/26, 96/27, 96/67, 96/78, 156/230, 156/233, 156/247, 156/256

[51] Int. Cl.B44c 1/24

[58] Field of Search.....96/47, 78, 27, 67; 63/15, 26; 156/513, 514, 56, 58, 505, 506, 261, 262, 256, 247, 249, 230, 233, 234, 240; 29/160.6, 38.1, 38.2

[56] References Cited

UNITED STATES PATENTS

1,996,768	4/1935	Ingman.....	96/63 X
2,302,561	11/1942	Libby et al.	156/514
2,145,071	1/1939	Cave.....	63/15 X
2,181,507	11/1939	Chickering.....	63/15
418,674	1/1890	Barnes.....	96/27 R X
957,596	5/1910	Bassist.....	96/27 R X

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Attorney—John F. A. Earley

[57] ABSTRACT

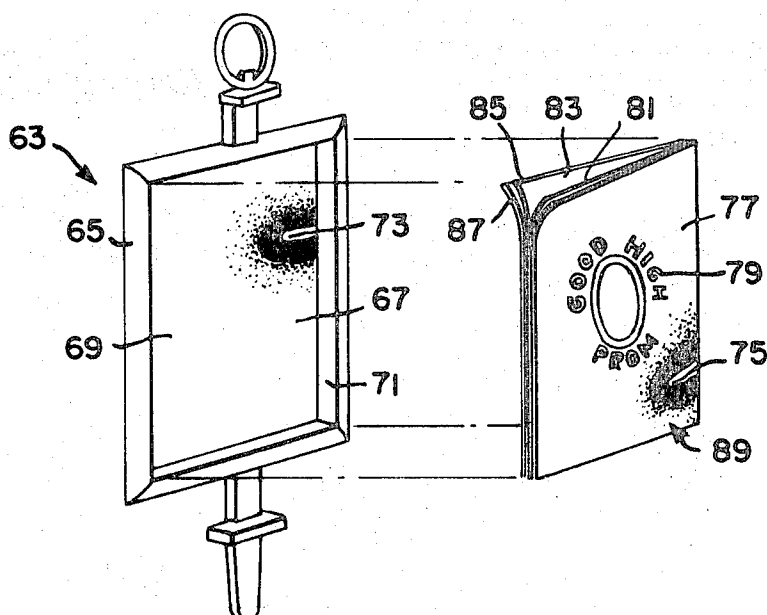
A jewelry piece comprising a jewelry body member, a bezel channel formed in the body member, and a sign plate mounted in the bezel channel, said sign plate including a developed photographic film with intelligence thereon, and a reflecting backing on the film, said sign plate being beveled.

A method for making a series of sign plates of the same design for jewelry pieces, comprising photographing art work on a series of frames of film having sprocket holes so that the art work 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 photographing art work on film, developing the film to obtain a developed film with intelligence thereon, and affixing a reflecting backing to the film.

10 Claims, 13 Drawing Figures



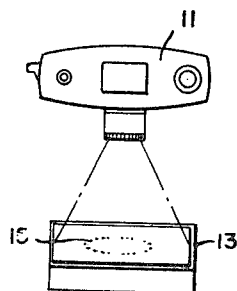


FIG. 1.

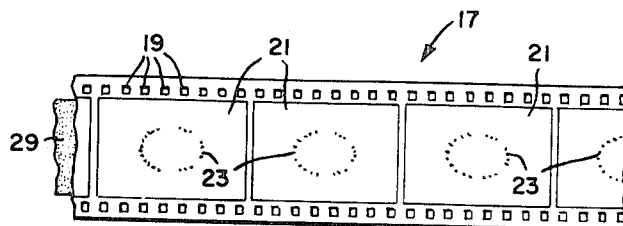


FIG. 2.

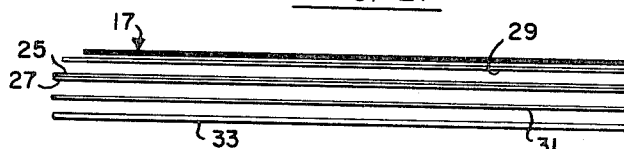


FIG. 3.

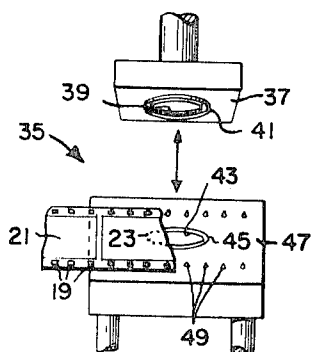


FIG. 4.

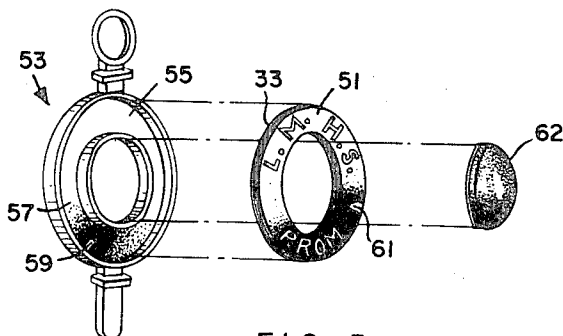


FIG. 5.

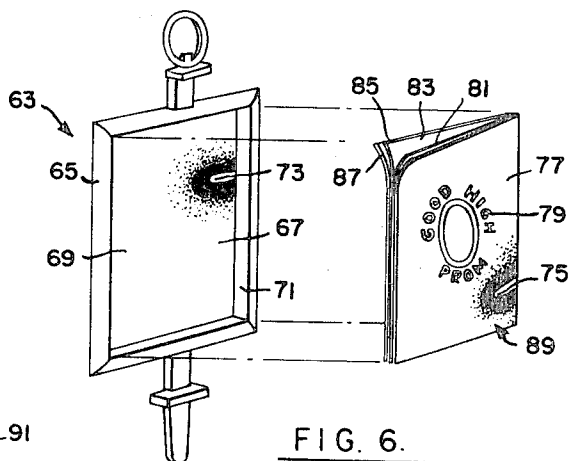


FIG. 6.

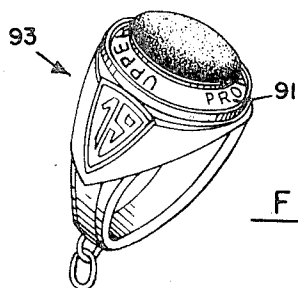


FIG. 7.

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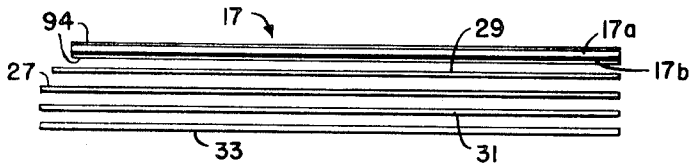


FIG. 8.

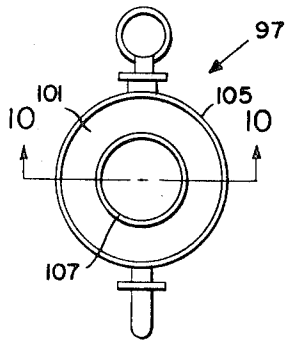


FIG. 9.

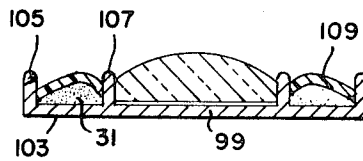


FIG. 10.

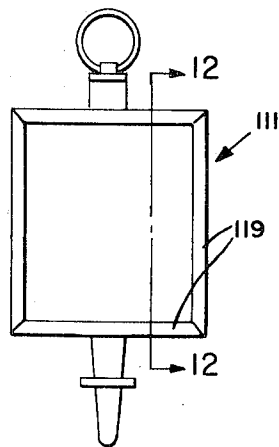


FIG. 11.

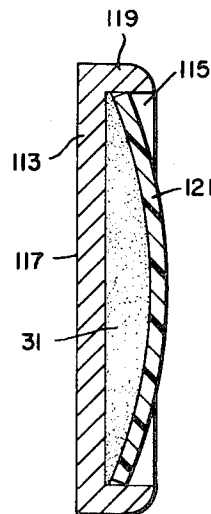


FIG. 12.

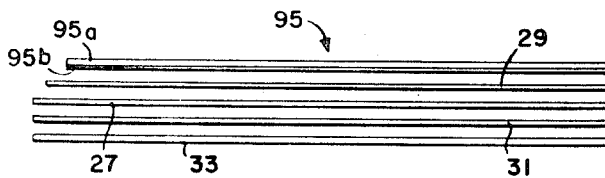


FIG. 13.

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JEWELRY PIECE AND METHOD

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a division of my patent application Ser. No. 764,548, filed Oct. 2, 1968, now U. S. Pat. No. 3,599,359, issued Aug. 17, 1971.

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 is provide jewelry such as prom favors, school awards, souvenir items, including miniature rings, charms, and the like which overcomes the problems 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 art work on a series of frames on film having sprocket holes so that the art work 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 decora-

tive 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 art work, 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 art work 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 art work 15. The art work 15 may be made of paperboard and is easily changed or other art work substituted therefor. For example, the art work 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 of obtaining the metallic color is to use color film and color art work. 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 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 side walls 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 17a and emulsion layer 17b, 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 art work on a series of frames on a roll of film 17 having sprocket holes so that the art work 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 95a and emulsion layer 95b, first adhesive layer 29, reflecting layer 27, second adhesive layer 31, and cover sheet 33.

FIG. 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 shows 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 side walls 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, name plates, 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 of the invention as defined in the subjoined claims.

I claim:

1. A method of making a multiplicity of substantially identical sign plates, comprising photographing art work on a series of frames on film having sprocket holes so that the art work on each frame is registered with respect to the sprocket holes, developing the film to obtain a roll of developed film frames with intelligence and background thereon with a portion of said film being transparent, affixing a reflecting backing layer to the back of the film frames so as to reflect through said transparent portion of the film, positioning each film frame with reflecting backing precisely beneath a cutting die by using a sprocket hole, and cutting out a sign plate.

2. The method of claim 11 including applying a pressure-sensitive adhesive layer and a cover sheet to the reflecting layer before cutting out the sign plate, whereby the sign plate is ready for contact adhesion upon peeling off the cover sheet, without applying fresh adhesive which would be messy, difficult to cover completely and evenly, and time consuming.

3. The method of claim 11 wherein the reflecting backing layer includes a transparent color sheet.

4. The method of claim 11 including depositing a transparent color on the film after developing so that the reflective backing layer reflects a metallic color.

5. The method of claim 11 wherein said art work is in color, and photographing it with color film to obtain desired colors, so that the reflecting backing reflects said desired colors.

6. The method of claim 11 including affixing the sign plate to a body member of a jewelry piece.

7. The method of claim 11 including developing the film so that the intelligence and background are of different colors.

8. The method of claim 7 including affixing the sign plate to a bezel channel having a bottom wall with edges, and applying a color coating to said edges before affixing the sign plate to the bezel channel so that the color coating merges with the color portions of the film.

9. The method of claim 2 including affixing the sign plate to a jewelry piece, and beveling the sign plates.

10. A method of making a sign plate comprising photographing art work on film, developing the film to obtain a developed film with intelligence and background thereon with a portion of said film being transparent, and affixing a reflecting backing to the back of the film so as to reflect through said transparent portion of the film.

* * * * *

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

Patent No. 3,732,134 Dated May 8, 1973

Inventor(s) John Graham Michael

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Claims 2 through 7, line 1 change "11" to --1--.

Signed and Sealed this
eighteenth Day of May 1976

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks