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METHOD OF MARKING POLISHED GLASS ARTICLES

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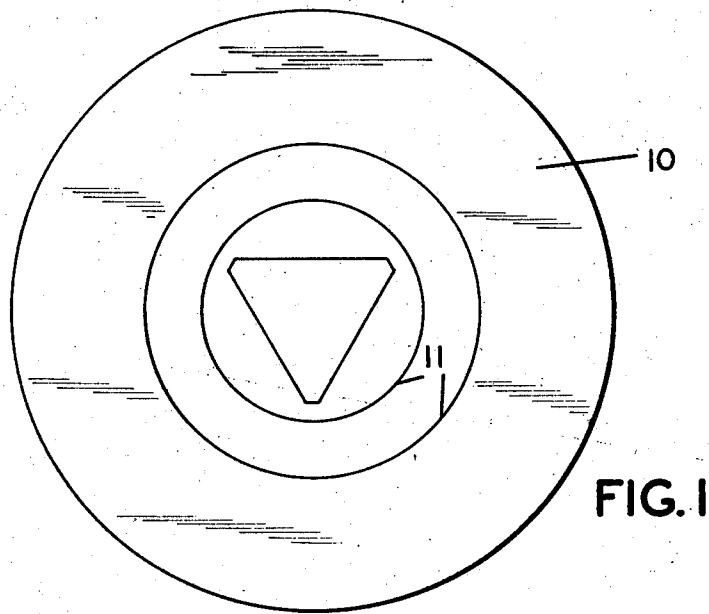


FIG. 1

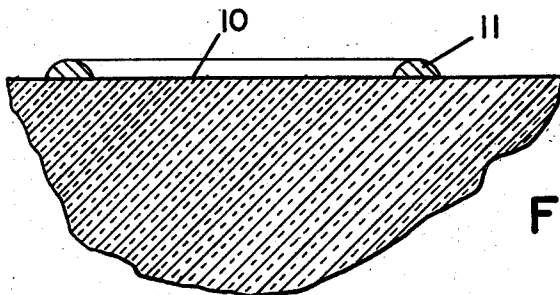


FIG. 2

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METHOD OF MARKING POLISHED GLASS ARTICLES

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6 Claims. (Cl. 41—26)

This invention relates to identification or trade-marking of glass articles such as lenses and mirrors, for example.

In the sale of glass articles such as spectacle lenses, for example, it is highly desirable that the manufacturer's trade-mark or name should remain on the goods until they are delivered for use to the ultimate consumer. It has been proposed to affix to the lens a gummed label bearing the manufacturer's name or trade-mark. However, this label is very likely to be accidentally removed while the dispensing optician surfaces, edges, cuts, drills or mounts the lens in the spectacle frame or mounting. During the time that the lens, whether in semi-finished or finished form, is being operated upon by the optician by surfacing, edging, cutting, drilling or mounting it will usually come in contact with one or more of the following substances: soap and water, alkalis, alcohol, turpentine, kerosene, gasoline, mineral oils, and/or one of the following pitch solvents such as ethanol, benzol, carbon tetrachloride, dichlorethylene and trichlorethylene. Hence, if reasonable assurance is to be had that the trade-mark will remain on the lens until delivered to the ultimate consumer, the mark must be applied to the lens by means of a substance which will adhere firmly to the glass even in the presence of water or alkalis and be relatively hard and resistant to the action of the usual substances which it might encounter in the optician's shop. The mark should, however, be capable of being readily removed by the optician, without destroying or affecting the polished surface, just before the finished spectacles are delivered to the wearer. The removal of the mark should, of course, preferably be accomplished in the presence of the wearer so that he will be informed as to the name of the manufacturer and the quality of the lenses he is purchasing.

One of the objects of my invention is to provide an improved method of identifying glass articles. Another object is to provide an improved method of identifying spectacle lenses by applying thereto a substance which will withstand the usual treatment of the optician's shop but which may be readily removed by certain substances. A further object is to provide an ophthalmic lens having deposited on a surface thereof indicia which will adhere firmly to the glass in the presence of water and will be resistant to attack by water, alkalis or a single organic solvent. These and other objects and advantages reside in certain novel features as will herein-

after be more fully described and pointed out in the appended claims.

Referring to the drawing:

Fig. 1 is a front view of a lens marked according to this invention.

Fig. 2 is an enlarged fragmentary section thereof.

An article marked in accordance with this invention is illustrated in the drawing wherein 10 designates a lens stamped with a resinous paint 11 in any desired design such as that in Fig. 1. This paint adheres closely to the surface of the lens; but, as shown in Fig. 2, it does not change the character of the surface and remains entirely separate and distinct from the material 15 comprising the lens.

In practicing my invention by a preferred method I make this paint by dissolving a glycerol phthalate resin in ethanol and benzol and adding rouge as a pigment. With this paint and a rubber stamp, stencil or brush, indicia, such as the manufacturer's trade-mark or name, are applied to the polished surface of the lens. The lens is then placed in an oven and heated up to a temperature of 400 degrees Fahrenheit. This temperature, of course, is not high enough to soften the glass or destroy the finished polished surface on the lens. The marked lens is held at this temperature until polymerization of the resin is carried to a point where the resin becomes substantially insoluble in all of the usual solvents with which it would come in contact in the normal processing and finishing operations.

The polymerization of the glycerol phthalate is stopped by removing the marked article from the oven, before the paint becomes insoluble in a mixture of benzol and ethanol. After such treatment, the mark will adhere strongly to the lens or other article and will resist the action of alkalis, soap, mineral oils, gasoline, kerosene, carbon tetrachloride, dichlorethylene, trichlorethylene, turpentine, blocking pitch, water, benzol and ethanol when applied separately. Thus in the case of an ophthalmic lens the lens can be finished and marked on one side by the manufacturer and the subsequent acts of the optician in finishing and mounting the lens will not remove the mark.

By stopping the polymerization of the glycerol phthalate base while it is still soluble in a mixture of benzol and ethanol, the mark is left in such condition that it can easily and quickly be removed. In the case of an ophthalmic lens, the dispensing optician leaves the mark upon the lens until the eyeglasses or spectacles are finished

and are to be fitted upon the purchaser. In this way the purchaser can see on the lens the name or mark of the manufacturer and the quality of the lens. Before the lenses are to be used, the optician dampens the mark with the mixture of benzol and ethanol, and the mark can then be readily wiped from the lens. The mark is merely on the surface of the lens and hence its application and removal do not affect the finish of the polished lens surface.

Equivalent marking solutions can be made by dissolving glycerol phthalate in other solvents and by using other pigments. A mixture of glycerol phthalate with vermilion in ethylene glycol monomethyl ether makes a very satisfactory marking fluid. A mark made with this fluid is baked at a temperature between 375 and 500 degrees Fahrenheit. Here again the polymerization of the resin is controlled so that it is soluble only in certain solvents. This solubility can be regulated so as to include solvents other than the mixture of ethanol and benzol. Ethylene glycol monomethyl ether is a suitable solvent when the polymerization of the resin has been stopped at a suitable point.

From the foregoing, it is apparent that I am able to attain the objects of my invention and provide a method of identifying an ophthalmic lens which will withstand the usual treatment of the optician's shop but which may be easily and readily removed by certain suitable solvents and also provide a lens so marked. Various modifications can, of course, be made without departing from the spirit of my invention or the scope of the appended claims.

I claim:

1. The method of identifying a glass article which comprises marking said article with a soluble glycerol phthalate paint, and heating the marked article until the paint is polymerized to a predetermined extent.

2. The method of identifying a glass article which comprises marking said article with glycerol phthalate which is soluble in several single solvents and heating said marked article until the glycerol phthalate mark is soluble only in a mixture of single solvents.

3. A method of treating an ophthalmic lens having a polished surface which is to be unobstructed when in use which comprises applying indicia to said surface by depositing thereon a glycerol phthalate resin, heating the lens to approximately 400 degrees Fahrenheit to render the indicia resistant to certain solvents, operating upon the lens to adapt it for use before the eye and then removing the indicia with a mixture of organic solvents, without affecting the polished surface, so as to render the lens fit for use before the eye.

4. A method of treating a glass article having a polished surface which is to be unobstructed when in use which comprises applying indicia to said surface by depositing thereon a glycerol phthalate resin and heating the article to approximately 400 degrees Fahrenheit, whereby said indicia firmly adheres to the surface and becomes resistant to alkalies, and finally removing said indicia with a mixture of organic solvents before the article is used.

5. An ophthalmic lens or the like having a ground and polished surface, and identification means on said surface comprising a polymerized glycerol phthalate resin.

6. An ophthalmic lens or the like having a ground and polished surface, and identification means on said surface comprising a glycerol phthalate resin which has been polymerized to a predetermined extent by heating to approximately 400 degrees Fahrenheit.

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