Aug. 21, 1951 E. H. LAND 2,565,377

HINGED PHOTOGRAPHIC FILM UNIT CONTAINING A LIQUID

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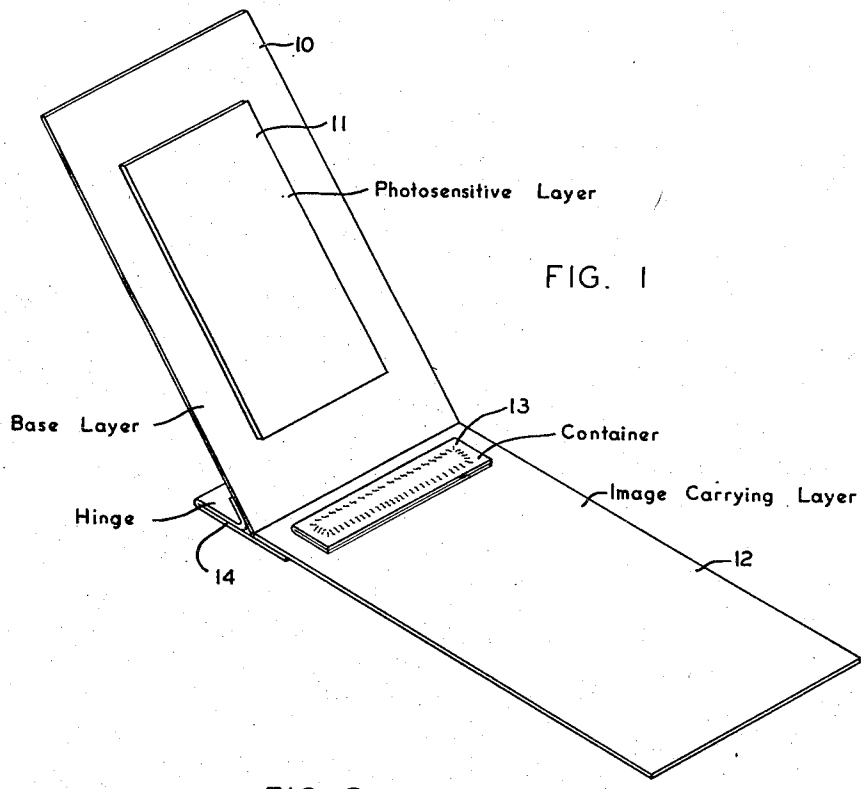


FIG. 1

FIG. 2

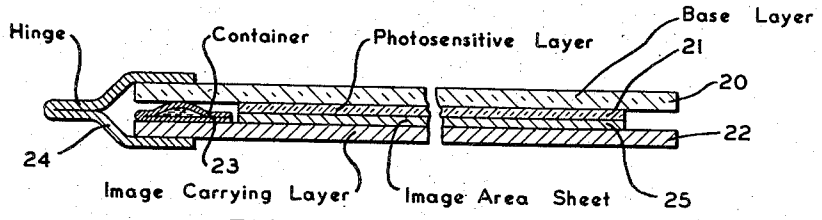
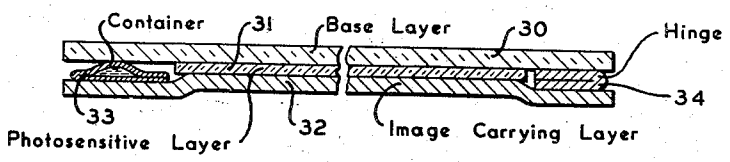


FIG. 3



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HINGED PHOTOGRAPHIC FILM UNIT CONTAINING A LIQUID

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Application June 13, 1950, Serial No. 167,832

9 Claims. (Cl. 95—8)

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This invention relates to photography and more particularly to novel, composite photographic film units and materials.

This application is a continuation-in-part of my copending application, Serial No. 651,124, filed March 1, 1946 for Hinged Photographic Film Unit Containing a Liquid, now abandoned.

One object of the present invention is to provide a novel, composite photographic film unit comprising a photosensitive layer and a base layer forming a photosensitive layer assembly, another layer, and a liquid container, said other layer and said assembly being hinged together for separation during exposure of the photosensitive layer and rejoinder after exposure.

Still another object of the invention is to provide a composite photographic film unit comprising a photosensitive layer assembly, an image-carrying layer and a container for a liquid composition positioned between said assembly and said image-carrying layer, said image-carrying layer and said photosensitive layer assembly being hinged for separation during exposure and rejoinder after exposure.

Another object is to provide a novel, composite photographic film of the above type wherein the outermost layers are opaque to actinic light, whereby the photosensitive layer can be exposed by separating said outer layers and the film unit is light-tight when the outer layers are rejoined.

Still another object of the present invention is to provide a photographic film unit of the above type wherein the liquid composition is spread between the layers of the film unit after exposure and forms a sufficiently strong adhesive bond to prevent the layers from separating while allowing manual separation thereof.

Another object of the present invention is to provide a novel, composite photographic film unit having a photosensitive layer assembly connected to an image-carrying layer by a hinge, and having a container between said assembly and said image-carrying layer, the thickness and compressibility of the composite film in that portion including said container being the same as the thickness and compressibility of the composite film in that portion including said hinge.

These and other objects of the invention will in part be obvious and will in part appear hereinafter.

For a fuller understanding of the nature and objects of the invention reference should be had to the following detailed description taken in connection with the accompanying drawings wherein:

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Figure 1 is a partially schematic perspective view of one form of the present invention;

Fig. 2 is a cross-sectional view of a novel, composite photographic material showing another feature of the present invention; and

Fig. 3 is a cross-sectional view of another modification of the present invention.

Referring now to Fig. 1, which is similar to one of the film units described in my copending application mentioned above, there is shown one form of the present invention. As shown in Fig. 1 of the instant application, there is provided a base layer 10 carrying thereon a photosensitive layer 11, these two layers comprising a photosensitive assembly. There is also provided an image-carrying layer 12 and a container or pod 13 mounted on said image-carrying layer and having therein a liquid composition or reagent. Connecting the image-carrying layer with the photosensitive layer assembly, i. e., the photosensitive layer 11 and the base 10, there is provided a hinge 14. As can be seen from Fig. 1, this hinge allows the base layer 10, along with the photosensitive layer 11, to be moved relative to the image-carrying layer 12, so that, when the composite film unit is positioned within a camera, the inner surface of the photosensitive layer 11 may be exposed to actinic light.

In a preferred form of the present invention, the base layer 10 comprises paper or other opaque substance. It may be a cellulosic film base such as a sheet of cellulose acetate, cellulose nitrate or cellulose acetate butyrate where the cellulosic film base has been treated to make it opaque to light. Photosensitive layer 11 is preferably of the type which is rendered developable by exposure to light, e. g., an emulsion of silver halide or of a mixture of silver halides or of a mixed silver halide. The image-carrying layer 12 is preferably formed of a substance such as paper, including alpha and baryta paper, or a substance like hardened opaque gelatin, although it may be formed of a material such as opaque glass.

Container 13 of the liquid composition is preferably formed of an elongated, water-vapor-impervious and oxygen-impervious material such as a wax coated metal foil. This container is so formed that the application of a suitable mechanical stress thereto as, for example, the squeezing together of the faces of the composite film unit will release the liquid composition in said container in only one direction, longitudinally of the film unit, so as to spread said liquid composition between the photosensitive layer 11 and the layer 12.

The liquid composition is preferably viscous and preferably contains therein a water-soluble film-forming material such as a high molecular weight polymer or protein as, for example, gelatin or a polymeric water-soluble ether, inert to an alkali solution, such as hydroxy-methyl cellulose, or a metal salt of carboxymethyl cellulose, for example, sodium or aluminum carboxymethyl cellulose. This film-forming substance, such as sodium carboxymethyl cellulose, when spread between the photosensitive layer 11 and the image-carrying layer 12, quickly forms a dimensionally stable, firm film, which is known as, and hereafter referred to as, an image-receiving layer.

This film-forming substance, as it forms the film, and after the film is formed, acts as an adhesive to hold the image-carrying layer to the photosensitive layer assembly, so that the two will not be separated after the film unit has been processed.

The liquid composition in the container 13 also preferably has included therein a developer such as hydroquinone, which will develop a latent photographic image within the photosensitive layer 11. The liquid composition also preferably includes a substance such as sodium thiosulfate, which will react with the unexposed silver halide in the photosensitive layer 11 to form therewith soluble, positive, image-forming complexes.

The hinge 14 is formed of a suitable substance such as cellulose acetate, cellophane, paper or metal foil, and is attached to the respective layers as by an adhesive.

In the use of the novel composite film unit shown in Fig. 1, it is placed within a camera, and the base layer 10, along with the photosensitive layer 11, is moved to approximately the position shown in Fig. 1. It is equally possible for the image-carrying layer 12 to be moved with respect to the base layer 10 and the photosensitive layer 11. This relative movement of the two portions of the film unit permits the exposure of the photosensitive layer 11. After the exposure of the photosensitive layer 11 to actinic light, the film unit is subjected to mechanical stress. A preferred way of applying this stress is to pass the composite film through a pair of pressure rollers, the container end entering first. This application of pressure to the film unit will rupture the container 13 and spread the liquid composition released from the container in a uniform film throughout the area between the photosensitive layer 11 and the image-carrying layer 12. The developer contained in the liquid composition will develop the latent photographic image and the substance, such as sodium thiosulfate, will form, with the unexposed silver halide, soluble positive image-forming complexes. While this process is underway, the film-forming material in the liquid composition will be forming a dimensionally stable image-receiving layer between the image-carrying layer 12 and the photosensitive layer 11. The positive image-forming complexes mentioned above will transfer from the photosensitive layer to the formed image-receiving layer and will form therein a positive image of the subject matter of the latent image.

As mentioned above, the film-forming material acts as an adhesive to hold the image-carrying layer 12 to the photosensitive layer, and will thus create a light-tight unit which may be handled in the daylight without danger of interfering with the photographic process.

In a preferred form of the embodiment of the present invention, after a sufficient time for development, the photosensitive layer 11 and the base layer 10 are stripped from the image-carrying layer 12 which has on its surface the image-receiving layer, to reveal the final positive image contained in said image-receiving layer. Since the image-receiving layer has a greater affinity for the image-carrying layer than it has for the photosensitive layer, it will adhere to the former layer.

By the use of the present invention there is provided a composite photographic film having light-impervious outer surfaces which permit handling of the film in daylight without affecting the photosensitive material. This construction permits the film unit to be loaded in a camera and discharged therefrom in daylight. The photosensitive layer can be exposed to actinic light by separating the image-carrying layer therefrom when the film is in the camera due to the hinged connection of the several parts of the film.

This novel construction affords advantages of ease of handling and allows the immediate ejection of the film from a camera after exposure.

The above discussion of the present invention as embodied in Fig. 1 has been limited to the use of the present novel composite film in such a manner that the photosensitive layer is exposed directly to actinic light. It is apparent, however, that if the base layer 10 be transparent, such as may be the case with a number of materials mentioned above, the photosensitive layer may be exposed through the base layer 10. In this embodiment of the invention, it is not necessary to separate the photosensitive layer assembly, i. e., the base layer 10 and the photosensitive layer 11, from the image-carrying layer during exposure of the photosensitive layer. The hinge in this modification of the invention serves primarily to hold the various portions of the film unit together during exposure and subsequent processing, and permits easy separation thereof after processing.

It is also possible to practice the invention as described above without the use of a film-forming substance in the liquid composition. In this embodiment of the invention a substance such as sodium thiosulfate creates soluble positive image-forming complexes with the unexposed silver halide and transfers these image-forming complexes from the photosensitive layer to the image-carrying layer 12, and the image is formed on and within the surface of the image-carrying layer 12. In this case, no image-receiving layer, as such, is formed during the processing of the film.

Throughout the specification and claims, reference is made to an image area. In Fig. 1, this image area would be that portion of the area of the image-carrying layer which is adapted to receive the positive image, including a sufficient area to constitute a frame for the final positive image. Where the photosensitive layer 11 is smaller than the image-carrying layer 12, the image area will ordinarily be approximately the size of the photosensitive layer. Where the photosensitive layer 11 is of the same size as the image-carrying layer 12, the image area will be of a somewhat smaller area than that of the photosensitive layer 11, depending upon the desired image and frame in the final positive image.

Referring now to Fig. 2, there is shown another embodiment of the present invention wherein there is provided a base layer 20 of paper or a dyed cellulosic film base similar to that described

in connection with Fig. 1. There is also provided a photosensitive layer 21 comprising a silver halide emulsion. There is shown an image-carrying layer 22, preferably formed of a porous substance such as blotting paper, a container 23 for a liquid composition, and a hinge 24. Container 23 and hinge 24 are preferably made of the same materials as mentioned in connection with corresponding elements described more completely in the discussion of Fig. 1 above. Fig. 2 includes, in addition to the elements recited above, an image area sheet 25. The image area sheet 25 is preferably formed of a relatively liquid-absorbent, liquid-permeable material, such as paper, including alpha and baryta paper, or a substance like hardened gelatin. It may, however, be made of a material such as glass. The liquid composition in the container 23 is preferably of the same type as that described in connection with the liquid composition used with the embodiment of the invention shown in Fig. 1.

In the use of the composite film unit shown in Fig. 2, photosensitive layer 21 is exposed to actinic light after relative separation of the photosensitive layer 21 and the image area sheet 25 has been accomplished. The film unit is then run through pressure applying means which releases the liquid composition from the container 23 and spreads it between the photosensitive layer 21 and the image area sheet 25. If a film-forming material is included in the liquid composition, a positive image will be produced in the film formed by this film-forming material between the photosensitive layer and the image area sheet 25. If no film-forming material is included in the liquid composition, the soluble, positive image-forming complexes are transferred onto and within the surface of the image area sheet 25 and the final positive image is formed on and within the surface of said image area sheet 25 in those cases where the image-carrying layer is not made of glass. The excess liquid composition which is not used in the development, image-forming and film-forming processes mentioned above flows over the edges of the image area sheet 25 where it adheres to and is absorbed within the surface of the blotter-like image-carrying layer 22.

When the above process has been completed, the base layer 20, along with the photosensitive layer 21, is stripped from the image area sheet 25, which in turn, may preferably be stripped from the image-carrying layer 22.

As discussed in connection with Fig. 1, it is possible to expose the photosensitive layer 21 through the base layer 20.

Referring now to Fig. 3, there is shown still another modification of the present invention, wherein there is provided a base layer 30 of a cellulosic film base or similar material, like that described in connection with the base layer 10 shown in Fig. 1. There is also provided a photosensitive layer 31, comprising a silver halide emulsion. An image-carrying layer 32 of paper such as baryta paper or alpha paper, hardened gelatin or glass is also provided. Connecting the photosensitive layer assembly (i. e. the base layer 30 and the photosensitive layer 31) with the image-carrying layer 32, there is provided a hinge 34. Between the photosensitive layer assembly and the image-carrying layer there is positioned a container 33 for the liquid composition. It should be noted in connection with Fig. 3 that the container and the hinge are at opposite ends of the film unit. The hinge and the container are also shown as having substantially the same

thickness. It is also desirable for these two elements to have substantially the same compressibilty up to the rupture point of the container. If these two elements have the same thickness and compressibility, the two ends of the film unit will likewise have the same thickness and compressibility, and a number of these films may be positioned in a film pack under pressure, and both ends of the composite film pack will have substantially the same thickness and compressibility.

The container 33 is preferably made of a substance similar to that described in connection with the container 13 of Fig. 1, e. g. a water-vapor- and oxygen-impervious material such as a wax coated metal foil. The liquid composition within the container is preferably of the same type as that described in connection with Fig. 1. The hinge 34 can be made of paper, a synthetic high polymer or a cellulosic film base such as cellulose acetate.

In the use of the modification of the present invention described in Fig. 3, the photosensitive layer 31 is moved away from the image-carrying layer to permit direct exposure of the photosensitive layer 31. It is also possible, of course, to expose the photosensitive layer 31 through the base layer 30 if the latter be made of a transparent material. After exposure of the photosensitive layer 31 to actinic light, the photosensitive layer assemly is folded down upon the image-carrying layer, if it has been separated therefrom during exposure. The film unit is then run through pressure applying means such as a pair of rollers, the container end going first. As described in connection with Fig. 1, the liquid composition is released by the pressure from the container and is spread uniformly and unidirectionally between the photosensitive layer 31 and the image-carrying layer 32. If the liquid composition contains a film-forming substance such as sodium carboxymethyl cellulose, this substance forms an image-receiving layer between the photosensitive layer 31 and the image-carrying layer 32, and the final positive image is formed within this image-receiving layer. The film-forming substance additionally serves a temporary adhesive function, as discussed in connection with Fig. 1. If the liquid composition does not contain a film-forming substance, the positive image is formed on and within the surface of the image-carrying layer 32. The liquid composition may have included therein a nonfilm-forming substance which increases its adhesive qualities.

In connection with Fig. 3, the image area on the image-carrying layer is roughly that portion of the layer defined by the edges thereof, the container at one end, and the hinge at the other end.

In connection with all of the figures of the above-described drawings, the various hinges shown therein have been referred to as being attached to the image-carrying layer or the base layer. It is obvious that this attachment can be accomplished by forming the hinge of a thermoplastic composition, or by using a suitable adhesive, or by mechanical means such as stitching or stapling.

In the drawings, the photosensitive layer has been shown as being smaller than the base layer in each instance. This is a preferred form of the invention, since it results in a saving of the photosensitive material. However, the photosensitive layer and the base layer may be coextensive in area.

In the drawings, various hinges have been shown as being made of one piece of material folded upon itself. It is apparent, however, that these hinges could be made of two or more pieces attached together.

It is also apparent that the hinge can be made by extending the adjacent ends of the base layer and image-carrying layer and suitably joining them together.

In the various figures of the drawings, the components of the photographic material of the present invention have been shown as separate, distinct, and relatively thick layers. It should be understood that the relative thickness of these layers is shown only for illustrative purposes to clarify the invention. In actual practice, some of these layers are extremely thin.

In the products hereinbefore described there is provided a container 13 for carrying a liquid in such condition that the liquid may be readily released for the purpose of processing photosensitive layer 11. In the preferred embodiment of the product, photosensitive layer 11 is a silver halide emulsion or the like, that is, an emulsion of a heavy metal salt capable of having a latent image formed therein upon exposure, which latent image may be rendered visible by suitable silver halide developing agents. The liquid released from container 13 cooperates with the emulsion and with image-carrying layer 12 to carry out a transfer process. This transfer process involves the development of a latent image in the photosensitive emulsion and, in one preferred form, the removal from that emulsion of part at least of the undeveloped silver halide as a soluble complex, which soluble complex is transported from the photosensitive layer to form the positive print.

By so forming the products described hereinbefore as to omit therefrom the substance for forming the soluble complex, it becomes possible to only develop the photosensitive silver halide emulsion. Similarly, by eliminating the developer and, if necessary, increasing the concentration of the sodium thiosulfate or other substance for forming the soluble complex, it becomes possible to predeterminedly fix out a developed negative by means of the aforementioned liquid-containing products. It is believed to be also evident now that other developable photographic products may constitute the photosensitive layer 11 which is processed, and that the product may carry suitable developing agents and such other liquid as is necessary to render said agents operative to effect the development of the photosensitive layer.

Certain diazonium compounds are destroyed by light, and photographic processes involving such compounds as their photographic materials have been used commercially. There are several known ways in which a diazonium salt layer may be exposed and developed to produce a relatively stable image. In each of these processes the treatment of the photosensitive diazonium may be accomplished by applying thereto a liquid containing certain developing reagents. (L. P. Clerc, "Photography Theory and Practice," second edition, published 1937 by Pitman Publishing Company, page 444, paragraph 693.)

The products of the present invention may be used in conjunction with, or may comprise as elements thereof, diazonium photosensitive layers. For example, the photographic product may be formed by having any of the aforementioned physical structures and the photosensitive layer 11 of said product may have as its photosensitive substance a diazonium compound such as that sold by the Boston Blue Print Company under the name "Blackline #202," and the liquid reagent in the container 13 then preferably comprises, by weight, 4 parts of medium visosity sodium carboxymethyl cellulose, 100 parts of water and 8 parts of "Blackline" Developer #203½ sold by Boston Blue Print company and manufactured by Frederick Post Company, Chicago). In the alternative, the photosensitive layer 11 may be obtained by applying to one side of a suitable sheet material a sensitizing solution which consists of 20 grams of chlorostannate of paradiazo-di-N-butyl-aniline, 0.4 gram of Pontacyl Brilliant Blue 2R, and 1 liter of water. The liquid developing reagent in the container 13 then preferably comprises, by weight, 4 parts of medium viscosity sodium carboxymethyl cellulose, 100 parts of water, 5.8 parts of sodium carbonate (monohydrate) and 2.3 parts of phloroglucinol.

The diazonium photosensitive layer may also be obtained by dipping a sheet of paper in a solution of Du Pont Naphthanil Diazo Black B, and the developing solution in container 13 may comprise 1500 parts, by weight, of a 5% water solution of sodium carboxymethyl cellulose, 10 parts of resorcinal and 1 part of sodium hydroxide.

It is also well known that certain ferric salts of organic acids, for example, the oxalates, tartrates, and citrates are reduced to ferrous salts when exposed to light. (L. P. Clerc, "Photography Theory and Practice," second edition, published 1937 by Pitman Publishing Company, page 402, paragraph 621 et seq.; Crowley Patents Nos. 2,093,421, 2,113,423, 2,130,070, 2,130,071, 2,137,015.) A considerable number of photographic processes depend for their functioning on this photochemical phenomenon. It is known in connection with these iron salts that any reagent that will differentiate between ferric and ferrous salts can be used to develop the barely visible image formed by the photochemical reduction of the ferric salt into an image which is very easily visible. Examples of such developing reagents are potassium ferricyanide, potassium ferrocyanide, tannins, gallic acid, B-naphthoquinone-sulphonic acid, silver salts, platinum and palladium salts. It is believed to be now apparent to one skilled in the art that the photoresponsive ferrous salts may constitute the photosensitive material of the photosensitive layer 11, and the liquid in the container 13 may include or dissolve in its travel to the photosensitive layer any one of the aforementioned developing reagents for distinguishing between the ferric and ferrous salts and producing the easily visible image from the very light image that is originally obtained by the photoexposure of the iron salts.

Broadly, the products of the present invention may comprise, or may be used with, any photographic, photosensitive material for the purpose of developing the same. It is to be understood that the invention is not limited to materials sensitive to visible radiation but includes photographic, photosensitive materials sensitive to such other radiation as X-ray, ultraviolet, infrared or gamma radiation.

Since certain changes may be made in the above product and different embodiments of the invention could be made without departing from the scope thereof, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. A photographic product containing material, including a photographic reagent, for producing a transformation of an image in said product, said reagent being present in an amount sufficient to effect said transformation, said product comprising a liquid-confining layer, including at least a photographic photosensitive portion capable of having an image formed therein upon photoexposure, another liquid-confining layer, an opaque stratum associated with each of said liquid-confining layers, and a rupturable container holding a viscous liquid, said liquid being in an amount sufficient for transforming said image in said photosensitive portion, said liquid, upon permeation of said photosensitive portion, rendering said transforming material effective to transform said image, said layers and container being attached together by means of a hinge, said liquid-confining layers being normally superposed with said photosensitive portion positioned between said opaque strata so as to exclude actinic light from said photosensitive portion, said hinge permitting said layers to be separated so as to allow exposure of said photosensitive portion and then permitting said layers to be superposed again, with said liquid being held by said container so as not to wet said layers and with said container being positioned for releasing said liquid between said layers, said photosensitive portion comprising a single frame for producing a single photographic image, said hinge being positioned adjacent a marginal edge of the frame, said container being also positioned adjacent a marginal edge of said frame so that liquid released from said container may be spread between said layers across said frame, said liquid being sufficiently adhesive to maintain said two layers in light-excluding relationship to said photosensitive portion when said liquid is spread between said layers.

2. A photographic product containing material, including a photographic reagent, for producing a transformation of an image in said product, said reagent being present in an amount sufficient to effect said transformation, said product comprising a liquid-confining layer, including at least a photographic photosensitive portion capable of having an image formed therein upon photoexposure, another liquid-confining layer, an opaque stratum associated with each of said liquid-confining layers, and a rupturable container holding a viscous liquid, said liquid being in an amount sufficient for transforming said image in said photosensitive portion, said liquid, upon permeation of said photosensitive portion, rendering said transforming material effective to transform said image, said layers and container being attached together by means of a hinge, said liquid-confining layers being normally superposed with said photosensitive portion positioned between said opaque strata so as to exclude actinic light from said photosensitive portion, said hinge permitting said layers to be separated so as to allow exposure of said photosensitive portion and then permitting said layers to be superposed again, with said liquid being held by said container so as not to wet said layers and with said container being positoned for releasing said liquid between said layers, one of said two liquid-confining layers comprising a double layer, the inner layer thereof being secured to the outer layer and being smaller than both the outer layer thereof and the other liquid-confining layer, said container being positioned, when said two liquid-confining layers are superposed, so as to release its liquid adjacent one edge of said smaller inner layer, the other edges of said smaller inner layer being spaced inwardly of the corresponding edges of said outer layer, the marginal facing surfaces of said two liquid-confining layers being spaced farther apart than the central portions thereof when said liquid-confining layers are superposed, said photosensitive portion comprising a single frame for producing a single photographic image, said hinge being positioned adjacent a marginal edge of the frame, said container being also positioned adjacent a marginal edge of said frame so that liquid released from said container may be spread between said liquid-confining layers across said frame, said liquid being sufficiently adhesive to maintain said two liquid-confining layers in light-excluding relationship to said photosensitive portion when said liquid is spread between said liquid-confining layers.

3. A photographic product containing material, including a photographic reagent, for producing a transformation of an image in said product, said reagent being present in an amount sufficient to effect said transformation, said product comprising a liquid-confining layer, including at least a photographic photosensitive portion capable of having an image formed therein upon photoexposure, another liquid-confining layer, an opaque stratum associated with each of said liquid-confining layers, and a rupturable container holding a viscous liquid, said liquid being in an amount sufficient for transforming said image in said photosensitive portion, said liquid, upon permeation of said photosensitive portion, rendering said transforming material effective to transform said image, said layers and container being attached together by means of a hinge, said liquid-confining layers being normally superposed with said photosensitive portion positioned between said opaque strata so as to exclude actinic light from said photosensitive portion, said hinge permitting said layers to be separated so as to allow exposure of said photosensitive portion and then permitting said layers to be superposed again, with said liquid being held by said container so as not to wet said layers and with said container being positioned for releasing said liquid between said layers, one of said two liquid-confining layers comprising a double layer, the inner layer thereof being secured to the outer layer and being smaller than both the outer layer thereof and the other liquid-confining layer, said container being positioned, when said two liquid-confining layers are superposed, so as to release its liquid adjacent one edge of said smaller inner layer, the other edges of said smaller inner layer being spaced inwardly of the corresponding edges of said outer layer, the marginal facing surfaces of said two liquid-confining layers being spaced farther apart than the central portions thereof when said liquid-confining layers are superposed, said photosensitive portion comprising a single frame for producing a single photographic image, said hinge being positioned adjacent a marginal edge of the frame, said container being also positioned adjacent a marginal edge of said frame so that liquid released from said container may be spread between said liquid-confining layers across said frame, said liquid being sufficiently adhesive to maintain said two liquid-confining layers in light-excluding relationship to said photosensitive portion when said liquid is spread between

said liquid-confining layers, said photosensitive portion comprising a silver halide, said product including a developer for exposed silver halide and a silver halide solvent.

4. The product of claim 3 wherein said hinge and said container are positioned adjacent the same edge of said frame and said container is between said edge and said hinge.

5. The product of claim 3 wherein said hinge and said container are positioned adjacent opposite edges of said frame.

6. The product of claim 3 wherein said hinge and said container are positioned adjacent opposite edges of said frame and having substantially the same thickness and compressibility up to the rupture point of the container.

7. The product of claim 3 wherein said outer layer of said double liquid-confining layer comprises a paper absorbent to said liquid.

8. The product of claim 3 wherein said first liquid-confining layer comprises the double layer and the inner layer thereof is a photosensitive silver halide layer.

9. The product of claim 3 wherein said second liquid-confining layer comprises the double layer and the inner layer thereof comprises an image-area sheet separably secured to the outer layer, said outer layer being blotter-like.

EDWIN H. LAND.

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