

Dec. 25, 1951

E. H. LAND
PHOTOGRAPHIC PRODUCT CONTAINING
A RUPTURABLE CONTAINER

2,579,587

Filed Oct. 25, 1947

2 SHEETS—SHEET 1

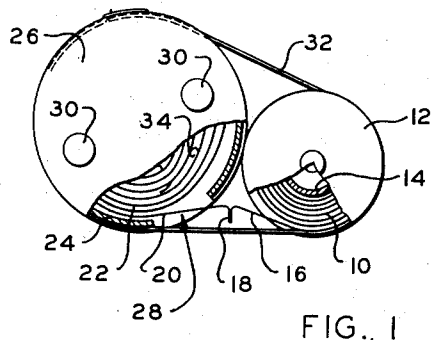


FIG. 1

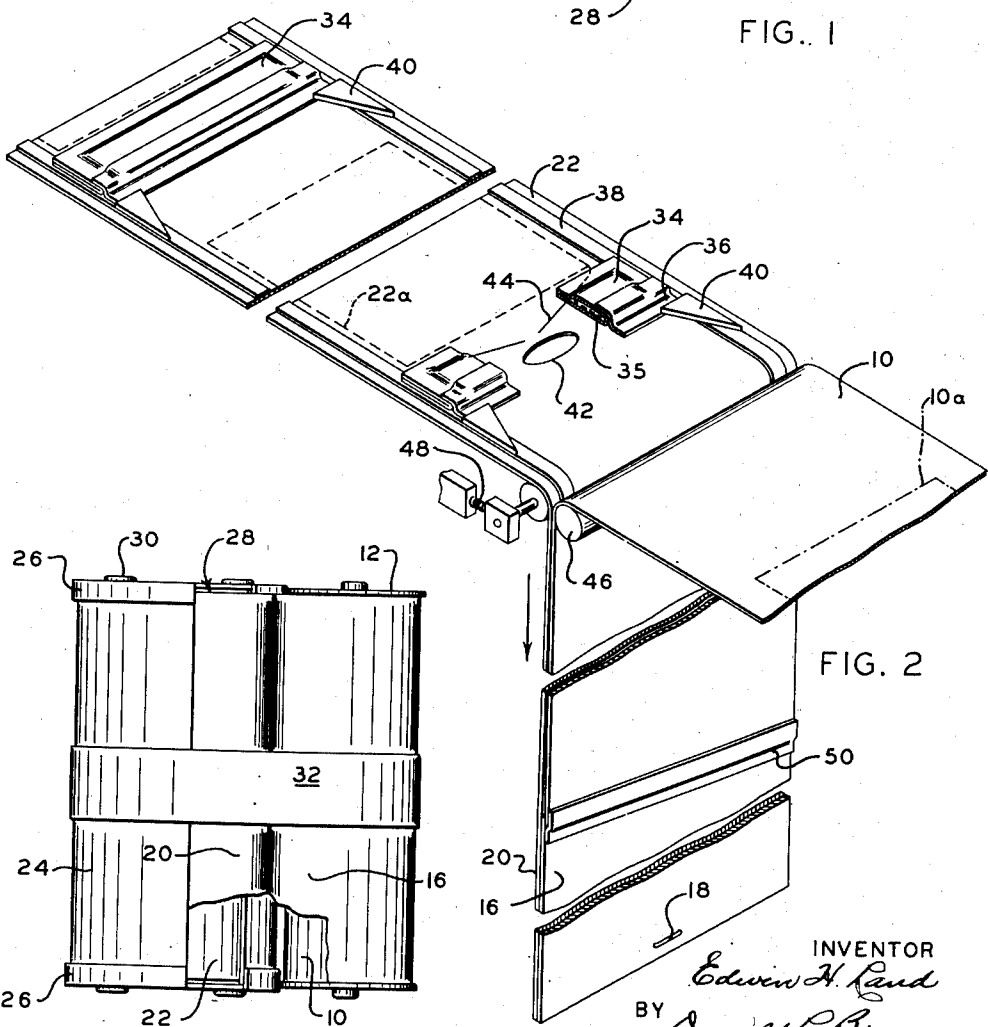


FIG. 2

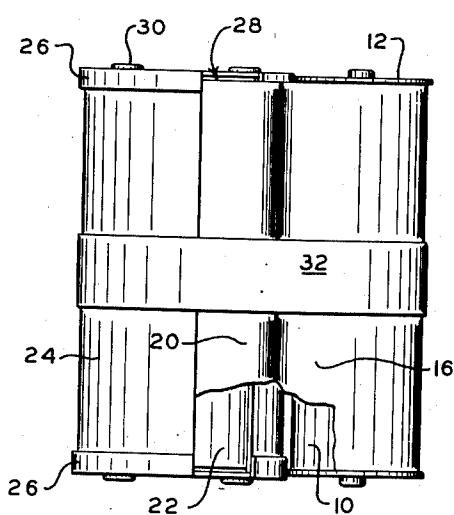


FIG. 3

INVENTOR
Edwin H. Land
BY *Donald F. Brown*
and
Oliver H. Hayes
Attorneys

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2 SHEETS—SHEET 2

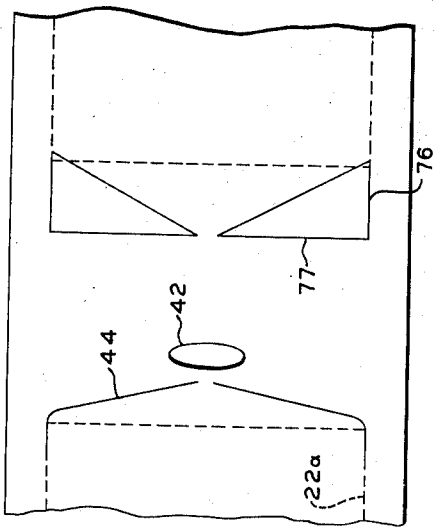


FIG. 5

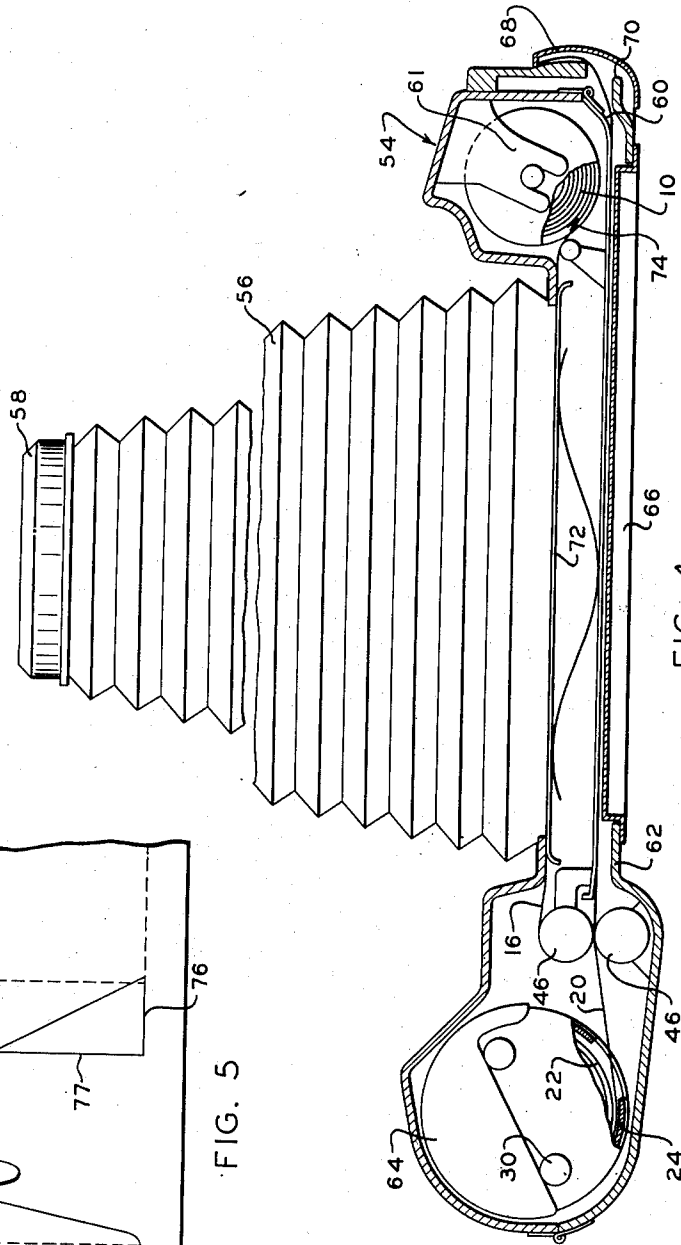


FIG. 4

INVENTOR
Edwin H. Land
 BY *Ronald L. Brown*
Oliver H. Hayes
 Attorneys

UNITED STATES PATENT OFFICE

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PHOTOGRAPHIC PRODUCT CONTAINING A RUPTURABLE CONTAINER

Edwin H. Land, Cambridge, Mass., assignor to Polaroid Corporation, Cambridge, Mass., a corporation of Delaware

Application October 25, 1947, Serial No. 782,117

8 Claims. (Cl. 95—9)

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This invention relates to photography and more particularly to novel photographic products. This application is a continuation-in-part of the copending application of Edwin H. Land, Serial No. 620,744, filed October 6, 1945 (now Patent No. 2,435,717), and is in part a continuation of the copending application of Edwin H. Land, Serial No. 641,810, filed January 17, 1946 (now abandoned and replaced by application Serial No. 161,414, filed May 11, 1950).

A principal object of the present invention is to provide improved photographic products of the type releasably carrying a processing liquid in a container therefor, the processing liquid being preferably capable of forming a positive image of a subject image to which a photosensitive layer, also preferably included in the product, is exposed.

Another object of the invention is to provide such a product wherein there are provided two sheet materials, one of which mounts the containers and the other of which includes a photosensitive layer having thereon a plurality of exposable areas.

Other objects of the invention are to provide improved products of the above type wherein the loading of the product in a camera or the like is simplified, wherein registration of the various elements of the product with an exposure and processing means is assured and wherein an economy of materials and simplicity of manufacture are achieved.

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

The invention accordingly comprises the product possessing the features, properties and the relation of components which are exemplified in the following detailed disclosure, and the scope of the application of which will be indicated in the claims.

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:

Figure 1 is a partially sectional schematic view of one preferred form of the invention;

Fig. 2 is an isometric partially cutaway view of the product of Fig. 1 during its use;

Fig. 3 is a bottom plan view of Fig. 1 with portions cut away;

Fig. 4 is a diagrammatic sectional partially cutaway view of the product of the invention in a camera device; and

Fig. 5 is a fragmentary bottom plan view of one

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of the image-carrying layers of the present invention.

This invention relates generally to a composite photographic product comprising an image-carrying layer and a plurality of containers releasably confining a liquid. The product also preferably includes a photosensitive layer, and the liquid, when spread between corresponding areas of said layers, accomplishes a predetermined processing of at least exposed areas of the photosensitive layer. This processing preferably comprises the concurrent development of a latent negative image in the photosensitive layer and the formation of a positive on the image-carrying layer.

In a preferred form of the invention the photosensitive layer is in the form of a roll, the image-carrying layer is in the form of a second roll, and there is sequentially associated with the roll of image-carrying layer a plurality of containers having therein the liquid capable of accomplishing such a predetermined processing of the photosensitive layer. Each of the containers is secured transversely to its associated layer adjacent a transverse edge of an image area on the image-carrying layer, the spacing between the containers defining these image areas. Each container is preferably capable of releasing its contained liquid for spreading toward the next succeeding container.

Extending from one roll of the product is a leader portion of the photosensitive layer, extending from the other roll is a leader portion of the image-carrying layer, and means are preferably provided for securing together these two leader portions. Associated with each roll is a means for keeping its roll in its rolled-up condition. In a preferred form of the invention, the image-carrying layer is coiled within a tubular container having a slot in the side thereof through which the image-carrying layer may be withdrawn, this container acting to maintain the image-carrying layer in its rolled-up condition. The photosensitive layer is preferably wound upon a spool and an adhesive tab is utilized for securing an inner surface of the leader portion to the next succeeding layer in the roll, thus maintaining the photosensitive layer wound on the spool.

The image-carrying layer preferably has on one surface thereof a predetermined series of areas serving as positive image areas upon which positive images of subject images are to be formed. As mentioned previously, the spacing of the containers defines these areas, there preferably being

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sufficient space between the containers to allow for borders and a trap for excess liquid spread from one container towards the next succeeding container. The photosensitive layer preferably has a continuous photosensitive stratum, and pre-determined areas thereof are brought into coincidence with an exposure framing means in the camera, these areas being referred to as image areas. For assuring that the image area exposed in the camera is that area thereof which is to be brought into coincidence with its corresponding positive image area on the image-carrying layer, one or both of the layers is preferably so arranged that the moving of the container into a predetermined position with respect to a processing means in the camera is indicated to the user thereof. When the container is in this position, that area of photosensitive layer to be brought into coincidence with the positive image area is aligned with the exposure framing means in the camera. In the preferred form of product, the layers are so arranged that the container acts to indicate that it is about to enter the processing means by increasing the pull necessary to move the image-carrying layer.

Referring now to Figures 1 and 3, there are shown exaggerated schematic views of one preferred form of the invention, Fig. 1 being a sectional view and Fig. 3 being a bottom plan view. Both figures are partially cut away to aid in an understanding of the invention. In these figures there is shown a roll of photosensitive material 10, rolled on a spool having end flanges 12 and a core 14. This photosensitive layer preferably comprises a usual film base supporting on one surface thereof a photosensitive gelatino silver halide emulsion, the silver halide emulsion being preferably on the inner surface of the base. Extending from the roll of photosensitive material 10 is a leader portion 16 which is suitably joined by a means, such as a staple 18, to a leader portion 20 of a roll of image-carrying material 22, preferably formed of baryta paper. This roll of image-carrying material 22 is coiled within a cylindrical container 24 having end members 26 and a slot 28 in the side thereof. On the two end members or caps 26, there are provided positioning means such as protuberances 30 for the purpose of positioning the container 24 in the camera so that the slot 28 bears a predetermined and fixed relation to a processing means in the camera. For maintaining the two rolls as a composite unit during handling prior to use in the camera, and for maintaining at least the outer layers of the photosensitive layer rolled up, there is included a means such as a strap 32 which extends around the two rolls. As can be seen, a plurality of liquid-carrying containers 34 are provided at spaced intervals on one surface of the image-carrying layer. The liquid-carrying containers preferably include a viscous solution of a processing liquid which is releasable along one edge of the container upon increase of hydraulic pressure in the container. These containers are preferably formed of a sheet of oxygen- and water vapor-impervious material folded along a medial line, sealed at the ends and at the edge opposite the fold, the edge seal being preferably weaker than the end seals.

It should be noted that the roll of image-carrying material and containers is not a concentric cylinder. Its axis, as defined by the inner layers of materials, is spaced unequal distances from the outer layers of the roll. For minimum outside dimensions of the container 24, which

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carries the roll of image-carrying material, the diameter of this container is made less than twice the greatest radius of the image-carrying layer roll. The fact that the axis of the roll is parallel to, but not fixed with respect to the axis of the container, permits the axis of the roll to travel around the axis of the container as the roll is rotated with respect to the container.

Referring now to Fig. 2 there is shown a schematic isometric view of the product of the invention in the use thereof, portions being cut away for clarity of illustration. In Fig. 2, like numbers refer to like members in the other figures. The photosensitive layer 10 is shown with its photosensitive surface extending upwardly, an image area 10a being indicated by dotted lines on this surface, this area 10a being that area which is to be brought into coincidence with a corresponding positive image area 22a. This area 10a is preferably in exposure position when the container 34 is in a predetermined position with respect to a processing member of the camera. On that surface of the image-carrying layer 22 which is to be brought into face-to-face relationship with the photosensitive layer, there is shown the positive image area 22a, this area being roughly defined by the distance between a pair of containers, while in a preferred form of the invention it is completely defined by a series of perforations extending around the periphery thereof. It should be noted that the transverse trailing edge of the container 34 is positioned quite close to the leading edge of the positive image area 22a while the next succeeding container is spaced a considerable distance from the trailing edge of the area 22a, this latter spacing giving an area in which excess liquid may be trapped, as hereinafter described.

Preferably positioned on each edge of the image-carrying layer is a raised spacing strip 38 having approximately the same thickness as that desired for the layer of liquid to be spread between the image-carrying and photosensitive layers. Extending across the image-carrying layer, in position to discharge its contained liquid for spreading between strips 38, is the container 34, this container being preferably secured to the image-carrying layer only at its leading edge by a means such as a strip of adhesive material 36. Underneath the container 34 is provided a hole 42 which permits access to the inner surface of the image-carrying layer when this layer is bonded to the photosensitive layer after processing. Thus, the user of the product may insert his finger through hole 42 to assist in tearing out positive image area 22a, the tearing commencing along angularly extending perforations 44 which extend from under the container to the side perforations defining area 22a. The pivotal connection of the container between its leading edge and the image-carrying layer assists in permitting rolling up of the image-carrying layer. In addition, the positioning of the container over hole 42 prevents the escape of any liquid through the hole, and the fact that the container is unbonded to that portion of the image-carrying layer to be torn out aids in this tearing out.

For the purpose of trapping excess spread liquid there are provided trapping members which preferably comprise a pair of tapered short strips 40 positioned adjacent the trailing edge of each image area 22a and being preferably spaced slightly from the leading edge of the next succeeding container. The particular construction of the trap members and their spacing with respect to the adjacent container have several

features more clearly pointed out in connection with the use of the product.

Also shown in Fig. 2 is a pair of processing members which are schematically indicated at 46 in the form of a pair of pressure rolls. In a preferred form of camera, one of the pressure rolls 46 is fixedly mounted and the other is placed under a resilient load by a means such as a spring schematically indicated at 48.

It should also be noted that leader portion 16 is secured to the photosensitive layer 10 at an angle to the normal transverse dimension thereof. This angular connection gives a lower resistance to pull of this connection between the pressure rolls 46.

Referring now to Fig. 4, there is shown one type of camera apparatus with which the present invention is particularly useful, Fig. 4 being a diagrammatic sectional view where like numbers refer to like elements in the other figures. This camera comprises generally a housing 54 having a bellows 56 and a lens and shutter assembly 58. In the back of the housing 54 there is an inner partition 60 and an outer cover 62. Adjacent the right-hand end of partition 60 is provided a holder 61 for the roll of photosensitive material 10. The inner partition 60 preferably carries one pressure roll 46, and the outer cover 62 preferably carries the other pressure roll 46. Plate 69 also preferably carries a backing plate 72 which holds the photosensitive layer 10 in the focal plane of the camera. For holding the image-carrying roll in a predetermined position, there are provided members 64 adapted to engage protuberances 30 on the ends 25 of the container 24. A door 66 is provided in the outer cover 62 and a swinging cutter bar 68 is hingedly secured to cover 62 adjacent an end 70 thereof which defines an exit for the leader portions of the product. Suitable light seals are provided. Further details of construction of such a camera are given in the copending application of Joseph Carbone and Murry N. Fairbank, Serial No. 780,344, filed October 17, 1947 (now Patent No. 2,455,111).

In the use of the product and camera described above in connection with Figs. 1 through 4, the outer cover 62 and inner partition 60 are swung open to permit loading of the product. Then the binding strap 32 is removed from the product, allowing the roll portions thereof to be separated while the leaders 16, 20 are held together by means of the connection 18. The roll of photosensitive material is then placed in holder 61, the leader 16 is drawn across backing plate 72 and around the roll 46 carried by partition 60. Then partition 60 is pushed to its closed position shown in Fig. 4 and the container 24 is placed in the camera, it being positioned so that members 30 rest against the holder 64. The two leaders 16, 20 are then pulled as a unit along the outer surface of partition 60 until they extend beyond the right-hand end 70 of the camera. The outer cover 62 is now closed, thus light-sealing all of the material within the camera. At this point substantially all of the leader portions of the two layers have been removed from their respective rolls. A seal 74 is preferably provided between the last of the leader portion of the photosensitive layer and the next inner layer of the roll, this seal being broken when the product is used. This seal 74 is particularly desirable in the loading of the product in the camera, since it prevents any possibility of complete unrolling of the photosensitive layer 10, if the roll of photosensitive layer should slip from the hand of the user

during this loading. It also prevents any uncoiling of the roll, beyond a certain point, due to forces stored within the roll after the roll has been positioned in the camera and before the camera has been made light-tight. The two leaders are now pulled as a unit until a strong increase in resistance to pull is felt. This increase in pull indicates that the leading edge of the first container is entering the bite of the pressure rolls and tending to spread them apart, this spreading being resisted by spring 48 (shown in Fig. 2). The user of the camera now knows that a predetermined area 10a of the photosensitive layer is in position to be exposed. At this point, all excess leader material may be cut off against the cutter bar 68, if desired, the cutter bar being moved downwardly when it is desired to grasp the uncut portions of the leaders extending from the camera beyond end 70 of cover 62.

Exposure is made and the two leaders are again pulled. During the commencement of pull, the passage of the container 34 between the pressure rolls increases the hydraulic pressure therein to the point where the liquid is forced out of the trailing edge of the container. As the pull continues, the liquid is spread between the two layers in a thin layer having a thickness approximately the thickness of the two spacer strips 38, the liquid acting to bond the photosensitive and image-carrying layers together as a unit and to carry out the formation of the positive image on area 22a which is in coincidence with area 10a. As the trapping strips 40 pass through the rolls their tapered construction permits a gradual separation of the pressure rolls, the pointed ends being more or less squashed by the high unit pressure thereon. Thus, the gradual separation of the rolls does not give a great increase in pulling pressure but does increase the volume-to-area ratio between the layers 10 and 22 so that the excess liquid is no longer spread and is trapped within this volume. As the ends of the two trapping members pass completely through the pressure rolls, these rolls come together again. As the leading edge of the next container starts into the bite of the rolls, the pulling pressure is greatly increased, thus indicating to the user of the camera that one area 10a has been mechanically processed and that the next area 10a is in position for exposure.

After a predetermined time, depending upon the materials involved, the formation of the positive image is completed and the door 66 may be opened to allow the user of the camera to remove the positive image area 22a. This is most readily accomplished, as explained previously, by inserting the finger into hole 42 and tearing the image-carrying layer along lines 44 and 22a. It should be noted that the camera and film construction described above permit the exposure, processing and removal of one positive picture area without requiring the processing or movement of the next image area out of the exposure position in the camera.

When the next image area is exposed, it is processed in the same manner as the previous image area, that portion of the product extending out of the right-hand end of the camera being used to move the two layers into coincidence through the pressure rolls. The fact that the preceding portions of the image-carrying and photosensitive layers are bonded together by the spread liquid is of considerable assistance in maintaining the two layers in registration during the use of the product. Thus, as the used

portions of the product are torn off by the cutter bar, there remains a pair of laminated layers (minus area 22a) extending between the pressure rolls and the end of the cutter bar, this pair of layers acting as a single layer.

Referring now to Fig. 5, there is shown a modification of the invention which may be incorporated in the product previously described. This feature of the invention relates to visual indicia for indicating to the user of the camera that the container on one of the image-carrying layers has been predeterminedly positioned with respect to the processing rolls in the camera. In one preferred form of the invention, these indicia comprise triangularly shaped marks 76, positioned on the back side of the image-carrying layer, that is, the side opposite to that which is to receive the positive image. As these triangularly shaped marks are moved past the end 70 of the back cover 62 during the use of the product, the user thereof continues to pull until the line 77 is reached, at which point he knows that a container is positioned adjacent the pressure rolls. Thus, when exposure of the photosensitive area in exposure position in the camera is accomplished, this exposed area will be brought into coincidence with the image area 22a associated with the positioned container. This indicating means may be used in addition to the indication arising from the increased pull as the container commences to enter the bite of the pressure rolls or it may be the only indicating means in those cases where the increase in pull due to the entrance of the container into the pressure rolls is not readily apparent. This latter situation arises in cases where the trapping strips 40, for example, directly abut in the leading edge of the container. While preferred means have been shown for indicating when the container is predeterminedly positioned with respect to the pressure rolls, other means such as those described in the above-mentioned copending application of Edwin H. Land, Serial No. 620,744, may be utilized. It is also possible to provide mechanical stops, such as holes in one or both of the layers, adapted to operate a stopping mechanism for the pressure rolls to cause them to jam, or to be stopped as a result of a stopping pin falling into these holes when the holes are brought into a predetermined position, this position being such that a container is predeterminedly positioned with respect to the pressure rolls. One such stop hole and mechanism is shown in the copending application of R. J. Messina and O. E. Wolff, Serial No. 758,652, filed July 2, 1947 (now Patent No. 2,458,182).

A preferred form of the invention comprises the following materials. The image-carrying layer 22 is formed of a sheet of single-weight baryta paper. The edge strips 38 are formed of kraft paper approximately .0035 inch thick, on top of which are placed the trapping members 40 which are made of paper tape about .015 inch thick. The containers are formed of a paper-backed metal foil having an alkali-inert inner coating of polyvinyl butyral and a strip of ethyl cellulose along the sealed edge, as described in my copending application Serial No. 652,612, filed March 7, 1946, for Fluid Containers. The cylindrical container 24 is formed of cardboard, as are the ends 26. The leader portion 20 of the image-carrying layer 22 is preferably integral with the rest of the image-carrying layer while the leader portion 16 of the photosensitive layer 10 is formed of usual photographic leader stock,

a light-opaque paper. Securing strips 36 and 50 are preferably formed of cellulosic sheet materials having a pressure-sensitive adhesive coating, such as a blend of unvulcanized rubber, a tack-producing resin, and a softening or plasticizing agent.

In one preferred form of the invention, the photosensitive layer 10 comprises a suitable paper base upon which is coated a "fast" gelatino silver iodobromide photosensitive emulsion. For use with such an emulsion, a preferred liquid composition includes the following ingredients in the relative proportions given below:

Example 1

	Grams
Water -----	1860
Sodium carboxymethyl cellulose (medium viscosity) -----	82.4
Sodium carboxymethyl cellulose (high viscosity) -----	10.6
Sodium sulfite -----	78
Sodium hydroxide -----	74.6
Sodium thiosulfate -----	14.5
Citric acid -----	38.5
Hydroquinone -----	52.0
Chlorobenzotriazole -----	1.5

One preferred image-carrying layer 22 is prepared for use with the above photosensitive layer and liquid developer composition as set forth in the following nonlimiting example:

Example 2

A solution A is prepared by adding 60 grams of cadmium acetate, 2 grams of lead acetate and 60 grams of zinc nitrate to 200 cc. of water. Solution B is prepared by adding 28 grams of sodium sulfide and 300 grams of silica aerogel to 2800 cc. of water. Solution C is prepared by adding 160 cc. of solution A to 500 cc. of solution B and thoroughly mixing. The resulting mixture is then applied to the surface of the baryta paper by dipping the sheet into a bath of the mix and removing the excess mix from the sheet, as it leaves the bath, by means of a soft rubber buffing roll which rotates in a direction opposite to the direction of travel of the sheet.

When the product, prepared as set forth in accordance with Examples 1 and 2, is processed by spreading the liquid between the photosensitive and image-carrying layers, the developer develops exposed silver halide grains and the sodium thiosulfate, concurrently with the development, forms soluble silver complexes with unexposed silver halide grains. These complexes migrate to the image-carrying layer where they are converted to a positive image comprising silver, the sulfide slowly released from the surface of the image-carrying layer forming silver sulfide specks around which large silver grains are formed. The cadmium acetate and zinc nitrate are slowly released to lower the alkalinity of the liquid to a point where oxidation of the excess developer does not occur. Meanwhile, the sodium carboxymethyl cellulose is forming a dimensionally stable film which adheres to the surface of the image-carrying layer. The above-described reactions (with the exception of the lowering of the pH) are completed in about one minute and the positive image area is then separated from the lamination comprising the photosensitive and image-carrying layers. As explained above, this separation is preferably accomplished by opening door 66, inserting a finger through hole 42 and tearing the image-carrying layer

along lines 44 and 22a, thus revealing the final stable positive image.

While preferred materials for use in preferred processes have been described above, they should not be considered as limiting the scope of the invention, since it is applicable to other processes than that described. For example, the photosensitive material may be other than a silver halide, such as a diazonium compound, or the processing may comprise only the development of a latent negative image, as explained in my co-pending application, Serial No. 729,578, filed February 19, 1947.

Since certain changes may be made in the above product without departing from the scope of the invention herein involved, 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 composite photographic product comprising a photosensitive layer including a base supporting on one surface thereof a photosensitive silver halide stratum, said photosensitive layer being in the form of a roll, means for releasably maintaining said photosensitive layer in its rolled-up condition, an image-carrying layer, a plurality of rupturable containers spaced equal distances from each other sequentially arranged on a surface of said image-carrying layer, each of said containers releasably holding a predetermined quantity of processing liquid and being secured transversely to said image-carrying layer, said product including a silver halide developer, each said container being capable of releasing its contained liquid for spreading across a predetermined area of said image-carrying layer, said image-carrying layer being in the form of a second roll, means for releasably maintaining said image-carrying layer in its rolled-up condition, said last-mentioned means for maintaining said image-carrying layer in a roll being independent of the means for maintaining the photosensitive layer in a roll, said photosensitive layer comprising a leader portion, said image-carrying layer comprising a leader portion, means securing together said two leader portions whereby at least a part of each leader portion is held in registered relation with the other leader portion, said roll of photosensitive layer and said roll of image-carrying layer being positioned with respect to each other so that said rolls are at least substantially in contact with each other, and means engaging both said rolls for releasably securing the rolls in said contacting relationship.

2. A composite photographic film unit employed in a camera for carrying out a transfer process and comprising a photosensitive layer, including a base, a photosensitive silver halide stratum supported on one surface of said base, a leader portion joined to one end of said photosensitive layer whereby the other end of said leader portion extends freely from said photosensitive layer, an image-carrying layer, a plurality of rupturable containers mounted on one surface of said image-carrying layer in spaced relation to each other at substantially equal distances apart, each of said containers releasably holding a predetermined quantity of processing liquid and being secured transversely to said image-carrying layer, said film unit including a silver halide developer, each said container being capable of releasing its contained liquid for spreading across a predetermined area of said image-carrying layer, a

second leader portion, one end of said second leader portion being joined to one end of said image-carrying layer whereby the other end of said second leader portion extends freely from said image-carrying layer, said photosensitive layer, including at least a part of the leader portion thereof, and said image-carrying layer, including at least a part of the leader portion thereof, being wound respectively into individual rolls whereby the free end of each said leader portion extends from its respective roll, said roll of photosensitive layer and said roll of image-carrying layer being mountable in supporting means in a camera and which are individual to each roll and which permit each said layer to be unwound from its respective roll upon the application of tensional force to said layer by pulling on the free end of the leader portion associated therewith, means for securing said photosensitive layer in its rolled condition, means, independent of said first-mentioned securing means, for securing said image-carrying layer in its rolled condition, each said securing means being releasable upon the application of tensional force to the free end of the leader portion of the respective layer with which said securing means is associated whereby to permit unwinding of each layer from its rolled condition, and fastening means connecting the free end of each leader portion together whereby the application of tensional force to the connected ends of said leader portions is simultaneously transmittable to both rolls to effect unwinding thereof.

3. A composite photographic film unit in packaged form for ready loading into a camera and adapted for carrying out a photographic transfer process, said film unit comprising a rolled photosensitive layer, a rolled image-carrying layer, each said rolled layer having a leader portion individual to said layer joined to one end thereof whereby said leader provides the outer surface of said roll and has one end which extends freely from its respective rolled layer, said rolled layers being adapted to be mounted in a camera in means which are individual to each roll and which permit each said layer to be unwound from its respective roll upon the application of tensional force to said layer by pulling on the leader portion associated therewith, means for securing said photosensitive layer in a rolled condition with the free end of the leader portion extending therefrom, means, independent of said first-mentioned securing means, for securing said image-carrying layer in its rolled condition with the free end of the leader portion extending therefrom, each said securing means being releasable upon the application of tensional force to the free end of the leader portion of the respective roll with which each said securing means is associated whereby to permit unwinding of each layer from its rolled condition, fastening means connecting the free ends of said leader portions in registered relation whereby the application of tensional force to the connected ends of said leader portions is simultaneously transmitted to both rolls to effect unwinding thereof and whereby said layers as they are unwound from their respective rolls may be superposed in registered relation, said roll of photosensitive layer and said roll of image-carrying layer, when in packaged form, being arranged substantially in alignment with each other and with a portion of their respective peripheries substantially in contact, and wrapping means extending at least partially around both said rolls and detachably

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engaged therewith for securing the rolls in said packaged form, said photosensitive layer including a base and a photosensitive silver halide stratum supported on one surface of said base, said image-carrying layer having a plurality of rupturable containers mounted on one surface thereof in spaced relation to each other at substantially equal distances apart, each of said containers releasably holding a predetermined quantity of processing liquid and being secured transversely to said image-carrying layer, said product including a silver halide developer, and each said container being capable of releasing its contained liquid for spreading across a predetermined area of said image-carrying layer.

4. The product of claim 3 wherein said liquid includes a viscous aqueous solution of said developer, a silver halide solvent and an alkali.

5. The product of claim 3 wherein one of said layers includes indicia for indicating when each container is brought into a predetermined position with respect to a pair of processing members in a camera.

6. The product of claim 3 wherein said liquid is sufficiently adhesive to bond said two layers together when spread therebetween and to thus maintain said layers in registration when superposed on each other.

7. The product of claim 3 wherein each said container is elongated with the long dimension of the container extending transversely of said image-carrying layer, one of the long edges of each container including a liquid-releasing mouth, the other long edge of each container being secured to said image-carrying layer by a strip of sealing tape.

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8. The product of claim 3 wherein each said container is elongated with the long dimension of the container extending transversely of said image-carrying layer, one of the long edges of each container including a liquid-releasing mouth, each said container being secured to said image-carrying layer adjacent the other long edge thereof so that said first edge of said container is free for movement with respect to said image-carrying layer.

EDWIN H. LAND.

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