Dec. 12, 1939. M. MARASCO 2,182,814

PHOTOGRAPHIC FILM

Filed Dec. 12, 1938 2 Sheets-Sheet 1

Fig. 1.

Film Supported Stripping Emulsion.

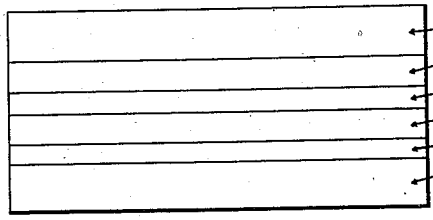


Fig. 2.

Unsupported Stripping Emulsion.

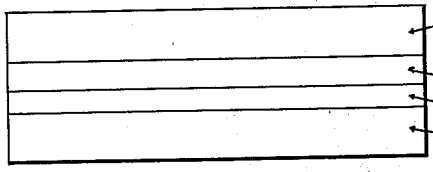
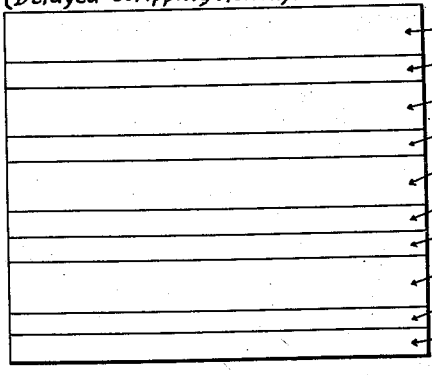


Fig. 3.

Multilayer Color Stripping Film.
Non-Supported Stripping Emulsion.
(Delayed Stripping Action).



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Fig. 4.

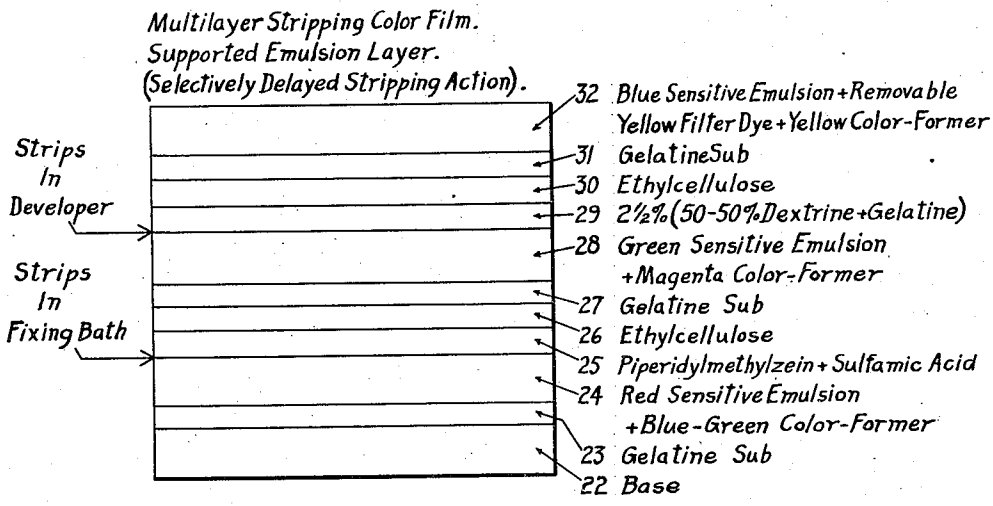
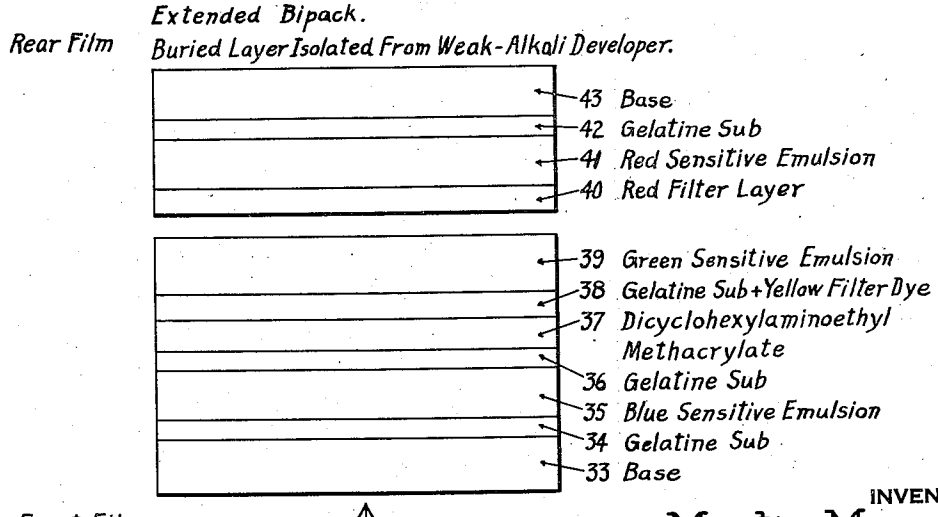


Fig. 5.



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Patented Dec. 12, 1939 2,182,814

UNITED STATES PATENT OFFICE

2,182,814

PHOTOGRAPHIC FILM

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Application December 12, 1938, Serial No. 245,274

17 Claims. (Cl. 95—9)

This invention relates to photographic films and more particularly to improved methods for attaching light sensitive layers with the support.

An object of this invention is to provide new and improved anchoring layers for adhering the sensitive layer to a photographic support. A further object is to provide photographic stripping layers. A still further object is to provide multilayer photographic films comprising several sensitive layers which can be individually separated from each other at different stages during processing. Another object is to provide improved multilayer films for color photography. Another object is to provide a method for varying the degree of anchorage between the sensitive layer and the support in photographic elements. A further object is to provide photographic emulsion layers releasably combined with the support.

These objects are obtained in the present invention by employing as a connecting or adhesive layer, a coating of a polymeric amino-nitrogen containing body, insoluble in water and 5% ammonium hydroxide but soluble in aqueous acetic acid of concentration in the range 2–5% and preferably 2%, as the layer intermediate between a photographically sensitive layer and a base or support for the layer. The sensitive layer may be coated directly on the connecting layer or the connecting layer may first be coated with a support for the sensitive layer and then with the sensitive layer. The support, in turn, may carry a substratum layer by which the sensitive coating is permanently anchored to the support.

In general, it is desired to anchor senstive photographic emulsion layers, such as gelatino-silver-halide coatings, permanently to their supports so that they will not loosen or frill at the edges during the processing stages. However, in many photographic arts, particularly in photomechanical, graphic and color photography arts, it is desirable to be able to transfer processed emulsions from the support on which they were coated, exposed, developed, fixed, etc., to another of permanent support. Such films are commonly known as stripping films inasmuch as the emulsion layer is releasably connected with the photographic element support, and may be supported by paper or cellulosic ester or ether film bases. The sensitive emulsion of such films is coated onto a thin menstruum of collodion which, in turn, has been coated onto a water-soluble adhesive layer such as glue or dextrine which, in its turn, has been coated onto a suitably prepared temporary support. A general characteristic of the stripping films of the art is that the adhesive layers are softened and dissolved in water or in the alkaline developer baths.

The present invention, on the other hand, provides stripping films wherein the adhesive layer is not dissolved by the alkaline developer or water rinse baths but is solubilized by the acids present in, and at the concentration usually employed in, the common, acid containing, baths used in ordinary photographic processing, such as acid stop-baths, fixing baths and reversal bleach baths. Thus the present invention provides improved stripping films inasmuch as the anchoring adhesive layer does not become solubilized until at least the development stage of processing is completed and thus it eliminates the difficulties of processing the present strip films due to their tendency to loosen and float away from the temporary support in the developer.

In addition to the above, the present invention provides a method for controlling the time required for stripping, and thus minimizes the need for the usual requirements of accurately controlled temperatures of processing baths and rinse water, due to the fact that anchoring substratum layers of these polymeric amino-nitrogen containing bodies are hardened and the stripping time increased by the gelatin hardening agents, such as alum, usually employed in acid-hardening fixing baths. Similar prolonging of stripping action can be obtained by adding a gelatin hardener, such as potassium or chrome alum, or an aldehyde, directly to the emulsion. When the anchoring substratum adhesive layer is overcoated with a collodion layer and the emulsion containing the hardener is coated on the collodion coating, the hardening action on the adhesive layer occurs in a manner similar to that in the case where the emulsion is coated directly on the adhesive substratum layer.

In addition to these advantages, the present invention also provides a method for controlling the stripping time, or varying the degree of anchorage without employing a protein hardener. In some methods of color photography dye-mordanting processes it may be desirable not to add hardener to the emulsion layer, in which case the stripping time can be increased tremendously by simply increasing the concentration of the polymeric nitrogen-containing body in the anchoring substratum. Thus, doubling the amount of the adhesive agent increases the stripping time from 5 to 25 minutes.

In the above description, the terms stripping and anchoring are used in the sense of indicating relative adhesion characters between a photographic layer and its support. Thus, long stripping time indicates firm but not permanent adhesion between these two elements of a photographic element while weak anchorage indicates short stripping time.

In order to more fully describe the present invention, the following examples are presented in exemplification but not in limitation thereof.

In the following illustrative and not limitative examples, reference is made to the corresponding drawings which indicate, on an exaggerated scale, the structure of films described in the examples.

Example 1

Referring to Figure 1, the support **2** is a temporary paper support, preferably double-weight and exhibiting such other characteristics as to sizing, water permeability as are common to double-weight photographic paper. On this support is applied a glossy barytes layer **3**, to which is applied a solution of deacetylated chitin consisting of

	Grams
Deacetylated chitin	4.00
Lactic acid	4.75
Ethyl alcohol (35% + water 65%)	91.25

as the stripping layer. Over this layer is applied a thin film **5** of nitrocellulose obtained by coating the stripping layer with a solution comprising:

	Grams
Nitrocellulose (80–120 sec. 11.9–12.1% N)	6.0
Glycerine	2.3
Urea	2.3
Dibutyl phthalate	1.2
Methyl alcohol	88.2

This thin, nitrocellulose film is then provided with a substratum coating **6** obtained by coating the nitrocellulose film with a solution of

	Grams
Gelatin	1.0
Acetic acid, glacial	3.0
Ethyl alcohol	96.0

The sensitive silver halide gelatino emulsion **7**, which preferably contains optical or gelatine sensitizers, is then coated onto the substratum layer. After the emulsion has been exposed, it is developed in an ordinary metol-hydroquinone developer. If rapid stripping action is desired, a lactic acid-amidol developer may be used, a suitable formula for which is:

Sodium sulfite, anhydrous	grams	30
Potassium metabisulfite	do	10
Amidol	do	5
Potassium bromide	do	2
Lactic acid	cubic centimeters	5
Water to	liters	1

It is then washed, fixed in an ordinary acid-hardening fixing bath, a suitable formula for which is as follows:

Hypo, crystals	grams	240
Sodium sulfite, anhydrous	do	15
Acetic acid, glacial	do	15
Boric acid	do	5
Potassium alum	do	8
Water to	liters	1

While the film is in the fixing bath, the deacetylated chitin is solubilized by the acetic acid of the bath and the emulsion layer with its thin film support can be stripped from the temporary or original support and transferred to the second support whereupon it can be colored, toned, etc., and then transferred to the final support. If an earlier stripping time is desired, the film is immersed in an acid stop-bath after development. Such well known baths are represented by a solution consisting of

Acetic acid, 28%	cubic centimeters	60
Water to	liters	1

wherein the emulsion can be stripped from the temporary support and transferred.

Such stripping films are extremely useful in the preparation of natural color prints. For this purpose, the emulsion layer may contain color-formers such as are described in U. S. 2,133,937, and co-pending applications, Serial Numbers 164,984 and 215,703, that is, the emulsion of one stripping film may contain a yellow color-former, another may contain a magenta, while the third may contain a blue-green former. The stripping films are printed under the appropriate color separation negative, developed in a metol-hydroquinone developer to the desired contrast and gamma values, fixed, stripped off and transferred, bleached in a 3% aqueous solution of potassium ferricyanide containing a few drops of ammonium hydroxide, washed and redeveloped in p-amino-N-diethylaniline, washed, treated with Farmer's Reducer to remove the silver image, washed and finally transferred to a permanent support which may be transparent or white and reflective.

Natural color prints may also be prepared with these stripping films by incorporating in the respective emulsion layers, yellow, magenta and blue-green dyes, such as, for example, Metanil Yellow, No. 138; Pontamine Fast Scarlet 4BA, No. 326 and Pontamine Sky Blue 6BX, No. 518 mixed with an equal part of Pontamine Green BX, No. 593. After exposure to respective color separation positives as indicated above, the films are developed, fixed, stripped and transferred, washed, bleached with

	Grams
Water	100.0
Stannous chlorite	1.5
Potassium bromide	2.0

whereupon the dyes are bleached where they are in contact with the silver image thus yielding a reversed image or a positive in color. The silver image is then removed by means of Farmer's Reducer and the films are washed and successively transferred in register to the final support.

Other modifications of the present invention are indicated in the drawings which accompany this specification.

The stripping emulsion film shown in Figure 2 comprises a base support, preferably an organic cellulose derivative **8**, a gelatin subbing layer **9**, a stripping layer coated from a solution comprising:

	Grams
Piperidylmethylzein	4.00
Acetic acid	4.75
Ethyl alcohol (65% water)	91.25

and a silver gelatino-halide emulsion layer **11** containing a protein hardener such as chrome alum. After exposure, development, and fixation in an acetic acid fixing bath, the supportless gelatin picture layer, hardened by the chrome alum, can be stripped from the support, washed and

transferred to its permanent support. Such stripping emulsions are particularly useful in making rapid, pseudo-half-tone reproductions, i. e., a negative of the object is made through the ordinary half-tone screen. This negative is then printed onto a stripping emulsion as described above and the processed positive picture layer is stripped and transferred to its final support. Due to the screen pattern and the extreme thin menstruum of gelatin carrying the image, the picture bears a striking resemblance to one made by the expensive half-tone screen cut process and regular printing methods.

The above described stripping emulsions also lend themselves admirably to the production of half-tone prints by the silk-screen process. For this process, a negative made through a half-tone screen is printed through the transparent base of the above-described stripping film. The emulsion layer is then developed in a hardening developer such as the well-known pyrocatechol-carbonate developer, a suitable formular for which is:

Solution A

Pyrocatechol	grams	10
Water to	liters	1

Solution B

Sodium carbonate, anhydrous	grams	30
Potassium bromide	do	1
Water to	liters	1

For use, mix equal parts of solutions A and B. After development and fixation, the emulsion layer is transferred to a waxed, temporary support in the manner well-known in the carbon transfer color printing process. On the waxed-support, the unhardened gelatin of the picture layer is washed away with warm water at about 110° F. and the gelatin-plus-silver relief is then transferred to the silk bolting cloth screen and pressed into contact. Obviously other methods, such as the hardening-bleach process, can also be used to insolubilize the gelatin in situ with the silver image.

These polymeric amino-nitrogen containing bodies and their equivalents provide a wide range of possibilities for preparing multilayer stripping films particularly desirable in making positive color prints. The broad range of usefulness is due to a characteristic of these bodies in that the time required for solubilizing the stripping layer containing these bodies can be varied by:

1. Combining the polymeric amino-nitrogen containing bodies, or their equivalent with water-soluble colloids such as glue, dextrine, polyvinyl alcohol and polymerized methacrylamide which decreases the stripping time.
2. Varying the concentration of acid in preparing the stripping layer solution. An increase of acid decreases the stripping time.
3. Varying the concentration of acid or acids in the processing solutions. An increased concentration decreases stripping time.
4. Hardening of the stripping layer by protein hardeners present in either the emulsion layer or in a processing bath which increases stripping time.
5. Varying concentration of polymeric amino-nitrogen body. Higher concentrations have longer stripping times.

Thus with a minimum amount of acid, less than 1.5% by weight of the polymeric amino-nitrogen body, the stripping time is indefinitely long and an emulsion can be considered anchored to the support, i. e., the layer is no longer a stripping layer but an anchorage layer.

Other modifications of the invention, particularly multilayer stripping films, are shown in Figures 3, 4 and 5.

The multilayer stripping film shown in Figure 3 comprises a cellulose acetate base **14**, waterproofed on both faces by thin layers of nitrocellulose **13** and **15** and backed by a nonhalation dye layer **12**. Over the water-proofing layer **15** is a gelatin substratum **16** and on this is a silver halide emulsion, sensitized into the red region by a green-deficient sensitizer such as Pinacyanol, Rowe's Index No. 808. Over this red sensitive emulsion is applied a solution containing:

Deacetylated chitin	grams	6.0
Glycollic acid	do	5.0
Ethyl alcohol (65% water)	do	89.0

which produces delayed stripping layer **18**. On this layer is coated an orthochromatic emulsion **19** and on this is coated a more rapid stripping layer **20**, from a solution containing:

Deacetylated chitin	grams	2.0
Lactic acid	do	4.8
Methyl alcohol (65 %)	do	93.2

On this stripping layer is coated a blue sensitive emulsion containing a removable yellow filter dye such as Tartrazine O, Rowe's Index No. 640 and a protein hardener such as chrome alum in an amount equal to 5% by weight of the gelatin of the emulsion. This multilayer stripping is exposed to a multicolored object, developed and fixed, passing through an acetic acid short-stop before the fixing bath. In the short stop, the blue component record layer can be stripped and transferred to a permanent, transparent support and fixed. The green component record layer is stripped and transferred after fixation. The red record layer remains fixed to its original support. All three records are then washed, dried and thus three color separation records are provided by this delayed stripping action multilayer film modification of the present invention.

Figure 4 shows a multilayer stripping film having selectively delayed stripping characteristics. In this modification, the present invention provides for stripping the blue component record and its support at the completion of development; the green component record and its support are stripped after fixation while the red record layer remains fixed to its original support. On a film base **22** are successively coated a gel sub layer **23** and a red-sensitized silver halide emulsion **24** containing a blue-green color-former, such as the octadecyl ether of resorcinol or other higher alkyl ether or resorcinol as described in co-pending application, Serial Number 164,984. Over this permanently anchored layer is coated an acid-stripping layer **25** from a solution containing:

Piperidylmethylzein	grams	4.0
Chrome alum	do	0.2
Sulfamic acid	do	4.8
Ethyl alcohol (65% water)	do	91.0

A thin film **26** of ethylcellulose is coated from a solution of:

	Grams
Ethylcellulose	5.0
Methyl acetate	77.0
Acetone	11.7
Xylene	6.3

On this support is coated a gel sub layer 27 and on this is coated a green sensitized emulsion layer 28 containing a magenta color-former such as, for example, a bis-pyrazolone as described in co-pending application, Serial Number 215,703. An alkali-stripping layer 29 is coated over the green sensitive layer from a solution of:

	Grams
Gelatin	2.0
Dextrine	2.0
Water	96.0

Another thin film 30 of ethylcellulose is coated on the alkali-stripping layer and the ethylcellulose film is subbed with a gel substratum 31 on which is coated the blue sensitive silver halide emulsion 32 which carries a removable yellow filter dye and a yellow color-former, such as, for example, one of the acylacetoaminoarylmorpholines described in U. S. Patent 2,133,937.

After exposure to a colored object, this multilayer stripping film is developed in a non-hardening alkaline developer. At the completion of development, film unit A is stripped off and transferred to another support whereupon the silver image can be bleached in an ordinary sulfuric acid-potassium dichromate reversal bleach bath. However, for purer color, a sulfamic acid-potassium dichromate bleach bath as described in copending application Serial Number 233,117 is used since with this bleach bath no alkali-metal bisulfite clearing bath is required and thus the color-former is not contaminated with bisulfite which tends to degrade the color. The film is then washed, re-exposed and developed in a p-amino-N-dialkylaniline developer, a suitable formula for which is:

p-Aminodiethylaniline	grams	8
Sodium carbonate, anhydrous	do	40
Sodium sulfite, anhydrous	do	5
Water to	liters	1

Such a developer, with ordinary silver halide emulsions, produces only black silver images. However, the nitrosodiethylaniline formed during development couples with the yellow color-former to yield an insoluble yellow azomethine dye in situ with the silver image. After washing the film, the silver image is removed by means of the ordinary Farmer's Reducer and the yellow image transparency is given the final wash.

At the completion of fixation, film unit B is stripped off, transferred to a temporary support, washed, bleached, re-exposed and redeveloped in the p-amino-N-dialkylaniline developer as described above and the silver image removed in the manner described. Film unit C, fixed to original support, is washed, reversed, reexposed, redeveloped and the silver removed as indicated above, thus revealing the blue-green dye image. Then the magenta dye image bearing film unit B is transferred from its temporary support and squeezed into register on the blue-green image layer and the same operation is carried out with the yellow image film unit A. Thus, a multicolor, positive transparency is produced by the use of this selectively delayed stripping film, one of the stripping layers of which comprises a polymeric amino-nitrogen containing body, insoluble in water and 5% ammonium hydroxide but soluble in 2% acetic acid.

Another modification of the present invention is shown in Figure 5. This modification provides a bipack color film element at least one element of which comprises a film base supporting two differently sensitized emulsion layers separated by a layer which resists diffusion through it of alkaline developers but is permeable to acid developers and other acid processing baths. Referring to the drawings, Figure 5, the front film element of the bipack arrangement comprises a transparent support 33, gelatin substratum 34, blue sensitive emulsion 35 containing a removable yellow filter dye such as, for example, Tartrazine O, C. I. No. 640, gel sub layer 36, a layer coated from a solution of:

	Grams
Dicyclohexylaminoethyl methacrylate	5.0
Ethyl alcohol (35% water)	95.0

no acid being used to prepare this layer. Instead of dicyclohexylaminoethyl methacrylate, beta-piperidyl-N-ethyl methacrylate and beta-morpholinoethyl methacrylate may be used. On this selectively permeable layer are coated in order, gelatin substratum 38 containing a removable yellow filter dye, e. g., Tartrazine O, C. I. No. 640, a green sensitive emulsion layer 39 and a red filter layer, for example, a layer of Congo Red, C. I. No. 370. The rear film of this bipack comprises a red sensitive emulsion layer 41, gelatin substratum 42 and film supporting base 43.

After exposure, in the direction indicated, to a colored object field, the outermost layer of the front film is developed first in a Metol-borax type of developer. The aminoethyl methacrylate layer prevents diffusion of the weakly alkaline developer through it and thus the latent image of the inner emulsion layer is undeveloped. After washing and drying, the developed silver image of the outer layer is printed off, using deep red or infra-red rays so as to not effect the inner emulsion layer, onto a raw film whose emulsion is sensitized to these rays. Thus, a record on a separate film is obtained of one of the color-component records of the front film. The front film is then redeveloped in an acid-amidol developer as described above, during which development, the outer layer can be stripped off and transferred to a permanent support for fixation and washing, thus preserving this record. The aminoethyl methacrylate, being swollen and partially solubilized by the acid-developer, allows the lower layer to be developed and subsequently fixed and washed. The rear film of this bipack is treated separately to form a third color-component record in terms of metallic silver. Thus two of the records are formed on their original supports while the third is carried by the support to which it was transferred. Positive prints can be prepared from these negatives and colored when following well-known methods.

The invention has been illustrated above with specific examples wherein deacetylated chitin, piperidylmethylzein, dicyclohexylaminoethyl methacrylate, piperidyl-N-ethyl methacrylate and morpholino-N-ethyl methacrylate are employed, but the invention is generic to the use of polymeric amino-nitrogen containing substances soluble in 5% and preferably in 2% acetic acid and insoluble in water and 5% ammonia. Thus there may be used the deacetylated chitin which may be prepared according to Rigby U. S. Patent 2,040,879; the acid soluble reaction products of proteins with carbonyl compounds such as lower aliphatic aldehydes and ketones and amines having less than nine carbon atoms in which the amino-nitrogen is joined to the aliphatic carbon, for example, those disclosed in Meigs U. S. Patent

2,143,023, January 10, 1937; the aminocelluloses soluble in dilute acetic acid and containing an amino-nitrogen removed from the cellulose nucleus by a chain of atoms comprising at least one carbon atom, for example, those described in Hardy U. S. Patent 2,136,296; cellulose amines which are soluble in a stoichiometrical amount of 5% aqueous acetic acid containing directly attached to the cellulosic nucleus from 0.5 to 1.5 amino-nitrogens per glucose unit, these amino-nitrogens being attached to nucleus carbon atoms, for example, those in Haskins U. S. Patent 2,136,299; reaction products of vinyl ketone polymers with amino compounds, for example, those described in Balthis U. S. Patent 2,122,707; the products obtained by treating resins having ketone groups with an excess of ammonia or the equivalent thereof and hydrogenating the resulting mixture catalytically at superatmospheric pressure and temperature, such as those described in Greenewalt U. S. Patent 2,063,158; polymeric amino alcohol esters of acrylic and substituted acrylic acids, for example, those described in Harmon U. S. Patent 2,138,762, November 29, 1938; and the polymeric amino alcohol methacrylates described in Graves U. S. Patent 2,138,763, etc., singly or in combination. These polymeric amino-nitrogen containing substances are insoluble in water and 5% aqueous ammonia but soluble in aqueous acetic acid of some concentration within the range 2–5%. Those soluble in 2% acetic acid are preferred. These polymeric-nitrogen containing substances may be divided in several groups as follows:

(1) Those which may be termed cellulose derivatives. This includes, although not with strict accuracy, deacetylated chitin and the alkylamino- and amino-alkylcelluloses above-identified.

(2) The second group consists in synthetic resins in the formation of which ammonia in some instances and monomeric-amino-nitrogen containing bodies in other instances have been employed. This group is distinct in that the highly polymeric molecules are built up wholly by artificial means. They are not synthesized by nature. In addition to the resinous polymeric amino alcohol esters of acrylic acid or of its homologs substituted in the alpha position by a hydrocarbon radical, there may be employed resinous reaction products of phenols, aldehydes and ammonia or primary or secondary amines, for example, the reaction product of meta-cresol, formaldehyde and dimethylamine.

(3) The third group consists of protein derivatives containing sufficient amino-nitrogen to enable them to meet the solubility requirements of the definition above given.

The invention has been illustrated above in terms of silver-halide emulsion light sensitive layers which represent a preferred embodiment of the invention, but it is applicable to light sensitive layers in general including bichromate gelatin light sensitive layers.

The above description and examples are intended to be illustrative only. Any modification of or variation therefrom which conforms to the spirit of the invention is intended to be included within the scope of the claims.

I claim:

1. A photographic element comprising a light sensitive layer joined to a support by means of an adhesive layer of a polymeric, amino-nitrogen containing substance soluble in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

2. A photographic element comprising a silver halide emulsion layer joined to a support by means of an adhesive layer of a polymeric, amino-nitrogen containing substance soluble in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

3. A photographic element comprising a light sensitive layer releasably joined to a support by means of an adhesive layer of a polymeric, amino-nitrogen containing substance soluble in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

4. A photographic element comprising a silver-halide emulsion layer releasably joined to a support by means of an adhesive layer of a polymeric, amino-nitrogen containing substance in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

5. A photographic stripping element comprising a light sensitive layer and a layer adhering thereto of a polymeric, amino-nitrogen containing substance soluble in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

6. A photographic stripping element comprising a light sensitive silver-halide emulsion layer and a layer adhering thereto of a polymeric, amino-nitrogen containing substance soluble in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

7. A multilayer photographic element comprising a plurality of photographic stripping elements at least one of which comprises a light sensitive silver-halide emulsion layer and a layer adhering thereto of a polymeric, amino-nitrogen containing substance soluble in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

8. A photographic element comprising a light sensitive layer releasably joined to a support by means of an adhesive layer of deacetylated chitin.

9. A photographic element comprising a light sensitive layer releasably joined to a support by means of an adhesive layer of a reaction product of a protein with an amine of less than nine carbon atoms and a compound of the class consisting of lower aliphatic aldehydes and ketones, said reaction product being soluble in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

10. A photographic element comprising a light sensitive layer releasably joined to a support by means of an adhesive layer of piperidylmethyl-zein.

11. A photographic element comprising a light sensitive layer releasably joined to a support by means of an adhesive layer of a member of the class consisting of a polymeric amino alcohol ester of acrylic and substituted acrylic acids, said polymeric ester being soluble in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

12. A photographic element comprising a light sensitive layer releasably joined to a support by means of an adhesive layer of polymeric dicyclohexylaminoethyl methacrylate.

13. A multilayer photographic element comprising a plurality of photographic stripping elements of differing stripping properties, at least

one of which comprises a light sensitive silver halide emulsion layer and a layer adhering thereto of deacetylated chitin.

14. A multilayer photographic element comprising a plurality of photographic stripping elements of differing stripping properties, at least one of which comprises a light sensitive silver halide emulsion layer and a layer adhering thereto of a reaction product of a protein with an amine of less than nine carbon atoms and a compound of the class consisting of lower aliphatic aldehydes and ketones, said reaction product being soluble in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

15. A multilayer photographic element comprising a plurality of photographic stripping elements of differing stripping properties, at least one of which comprises a light sensitive silver halide emulsion layer and a layer adhering thereto of piperidylmethylzein.

16. A multilayer photographic element comprising a plurality of photographic stripping elements of differing stripping properties, at least one of which comprises a light sensitive silver halide emulsion layer and a layer adhering thereto of a member of the class consisting of a polymeric amino alcohol ester of acrylic and substituted acrylic acids, said polymeric ester being soluble in aqueous acetic acid of concentrations within the range 2–5%, but insoluble in water and 5% aqueous ammonia.

17. A multilayer photographic element comprising a plurality of photographic stripping elements of differing stripping properties, at least one of which comprises a light sensitive silver halide emulsion layer and a layer adhering thereto of dicyclohexylaminoethyl methacrylate.

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