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PHOTOGRAPHIC STRIPPING TISSUE

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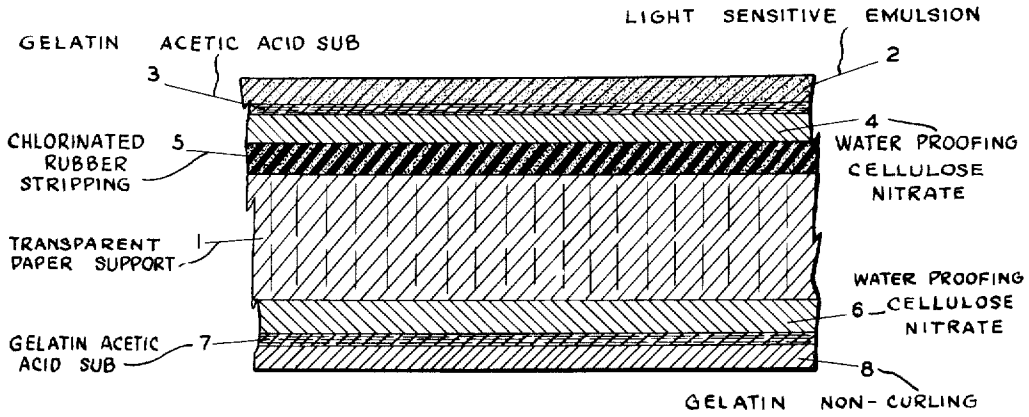


FIG. 1

INVENTOR.
IVIN R. FORMAN

BY
Harold E. Stonebraker
ATTORNEY

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PHOTOGRAPHIC STRIPPING TISSUE

Ivin R. Forman, Pittsford, N. Y., assignor to The Haloid Company, Rochester, N. Y., a corporation of New York

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4 Claims. (Cl. 95—8)

This invention relates to a photographic stripping tissue having reference particularly to the type of structures in which a light-sensitive image layer after exposure and processing is positioned against a glass surface and the temporary support stripped from the image layer, after which the image layer remains on the glass plate for printing technique, and the invention has for its purpose to provide a stripping tissue that can be more economically produced than stripping film using a cellulose nitrate or cellulose acetate film support and which can be processed more effectively and bring about results superior to stripping elements employing conventional photographic paper supports.

One commonly used type of stripping film employs a cellulose acetate photographic film as the support combined with an attaching layer between the film and emulsion layer, which latter can be stripped only after soaking the attaching layer, and a further objective of the invention is to afford a light-sensitive layer that can be stripped from the support when either wet or dry or at any stage of the processing operation, without requiring a soaking period for the stripping layer.

In addition, the stripped light-sensitive layer of the invention is tougher, more difficult to tear, and possesses increased dimensional stability as compared with the previously mentioned stripping film, and as a result of its greater toughness, the stripped image layer can more readily be cut while adhering to the glass base on which it is positioned.

In another conventional type, the emulsion-coated layer is temporarily attached to a photographic paper support, and in addition to the greater economy in production, the invention has a distinct advantage over such a structure employing conventional photographic paper for a support, since the high degree of transparency of the paper support of the invention, which is substantially equivalent to the transparency of photographic film and much greater than the transparency of conventional paper known and referred to as "transparent," renders processing of the light-sensitive emulsion layer considerably easier since the transparency of the paper support is sufficient to enable watching processing of the image through the transparent paper support at all stages. In this manner, it is possible to attain more accurate and satisfactory results than are possible with conventional paper supports.

The invention contemplates employing a transparent paper support having a light transmission density of 75% or higher which is as satisfactory as the light transmission density of transparent cellulose nitrate photographic film, and has a materially greater light transmission characteristic than conventional so-called transparent paper.

The stripped unit preferably comprises a gelatin light-sensitive or image layer having attached thereto a subbing layer comprising a gelatin acetic acid solution, and attached to the subbing layer is a waterproofing layer consisting of a cellulose nitrate solution. The image layer and its attached layers are temporarily secured to

the transparent paper support by means of a stripping layer containing chlorinated rubber and located between the waterproofing cellulose nitrate layer and the transparent paper support. On its reverse side, the transparent paper support has attached thereto a waterproofing cellulose nitrate solution layer to which in turn is attached a subbing layer of gelatin acetic acid solution, the latter being covered by an attached antihalation and noncurling gelatin layer.

Referring to the drawing which is a sectional view of a stripping tissue made in accordance with a preferred embodiment of the invention, 1 designates the transparent paper support or base having a light transmission density of approximately 75% or more, which is as satisfactory and efficient in transmission of light as a photographic transparent cellulose nitrate film. This transparent paper of 75% or more light transmission density compares with a light transmission density of less than 65% which characterizes conventional papers known and referred to as "transparent" which are inoperative for the purposes of the invention because of their insufficient light transmission properties. The transparent paper employed in carrying out the invention has been obtained from and is manufactured by Felix Schoeller, Jr., Mill, Burg Gretesch, Germany.

2 designates the gelatin layer bearing the light-sensitive emulsion, 3 designates a subbing layer formed from a gelatin acetic acid solution coated under the emulsion image layer and functioning to bond the image layer to a waterproofing layer 4 formed by a cellulose nitrate solution and attached to the subbing layer 3.

The stripped unit consisting of layers 2, 3 and 4 is temporarily attached to the transparent paper support 1 by means of a stripping layer 5 containing chlorinated rubber which is of such a character as to enable the image layer to adhere to the transparent paper support during processing, and to permit stripping of the image layer and its attached layers from the transparent paper support whenever desirable. The stripping layer 5 enables the stripped layers to be removed while dry or at any stage of the processing operation and affords protection to the image layer during processing. The image can be inspected or watched for accurate control through the transparent paper support at any stage of the processing cycle.

The waterproofing cellulose nitrate layer 4 is made up as follows:

	Parts by weight
High viscosity cellulose nitrate	8.0
Ethyl acetate	86.2
Butyl acetate	4.0
Dibutyl phthalate	1.2
Castor oil	.6

The stripping layer 5, when desirable to permit easy stripping, is made up as follows:

	Parts by weight
Chlorinated rubber	10.0
Ethyl acetate	68.0
Butyl acetate	20.0
W-9 (a glycerine-ether-alcohol from the chemical firm Holten in Oberhausen, Germany)	2.0

When a normal stripping operation is desired, the stripping layer is made up as follows:

	Parts by weight
Chlorinated rubber	12.0
Ethyl acetate	68.0
Butyl acetate	20.0

When a greater degree of resistance to stripping than indicated above is desired, the stripping layer is made up as follows:

	Parts by weight
Chlorinated rubber	11.0
Ethyl acetate	68.0
Butyl acetate	20.0
Clophen A–60 (chlorinated polynuclear derivatives of benzene from the Bayer Chemical Works, Leverkusen, Germany)	.5
Clophenharz W (chlorinated polynuclear: derivatives of benzene from the Bayer Chemical Works, Leverkusen, Germany)	.5

The layers mentioned above are preferably deposited in the range of from 5 to 20 grams per square meter, and optimum results are obtained with a thickness equal to 10 grams per square meter.

6 designates a waterproofing cellulose nitrate layer overlying and attached to the reverse side of the transparent paper support. **7** is a subbing layer of a gelatin acetic acid solution attached to the cellulose nitrate layer, and **8** is a non-curling and antihalation layer of gelatin attached to the subbing layer **7**.

The invention as described above is susceptible of modifications and departures, and this application is intended to cover such changes and substitutions as may come within the intent of the improvement or the scope of the following claims.

I claim:

1. A photographic stripping tissue including a transparent paper support having a light transmission density of approximately 75%, a light-sensitive emulsion layer, a gelatin acetic acid layer attached to the light-sensitive layer, a cellulose nitrate layer attached to the gelatin acetic acid layer, and a stripping layer containing chlorinated rubber located between said cellulose nitrate layer and the transparent paper support.

2. A photographic stripping tissue including a transparent paper support having a light transmission density of approximately 75%, a light-sensitive emulsion layer, a gelatin acetic acid layer attached to said emulsion layer, a waterproofing layer adjacent to said gelatin acetic acid layer, a stripping layer containing chlorinated rubber located between said waterproofing layer and the transparent paper support, a waterproofing layer on the reverse side of said transparent paper support, a gelatin acetic acid layer attached to the last mentioned waterproofing layer, and a gelatin layer covering said last mentioned gelatin acetic acid layer.

3. A photographic stripping tissue including a transparent paper support having a light transmission density of approximately 75%, a light-sensitive emulsion layer, a waterproofing layer attached to said light-sensitive emulsion layer, and a separate stripping layer containing chlorinated rubber located between said waterproofing layer and the transparent paper support and acting to permit removal of the light-sensitive layer and waterproofing layer from the transparent paper support when either wet or dry.

4. A photographic stripping tissue including a transparent paper support having a light transmission density of approximately 75%, a light-sensitive emulsion layer, a cellulose nitrate waterproofing layer attached to said light-sensitive emulsion layer, and a stripping layer containing chlorinated rubber located between said cellulose nitrate waterproofing layer and said transparent paper support and acting to permit removal of the light-sensitive layer and cellulose nitrate waterproofing layer from the transparent paper support when wet or dry.

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