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A. VON BIEHLER
LIGHT SENSITIVE MATERIAL

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FIG. 1.

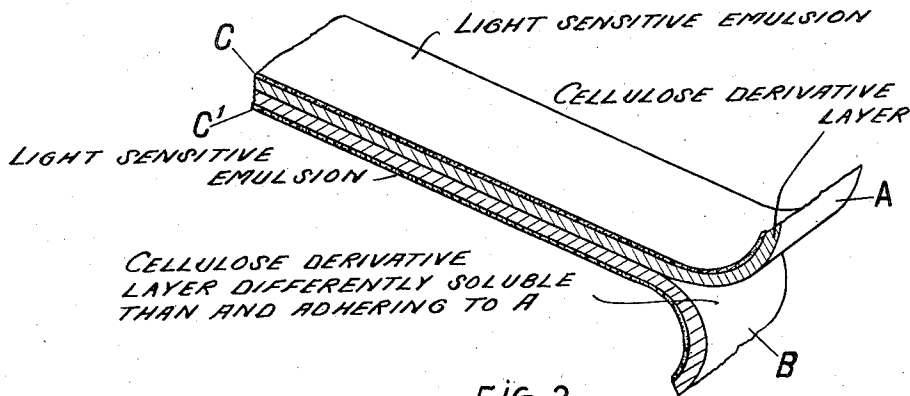
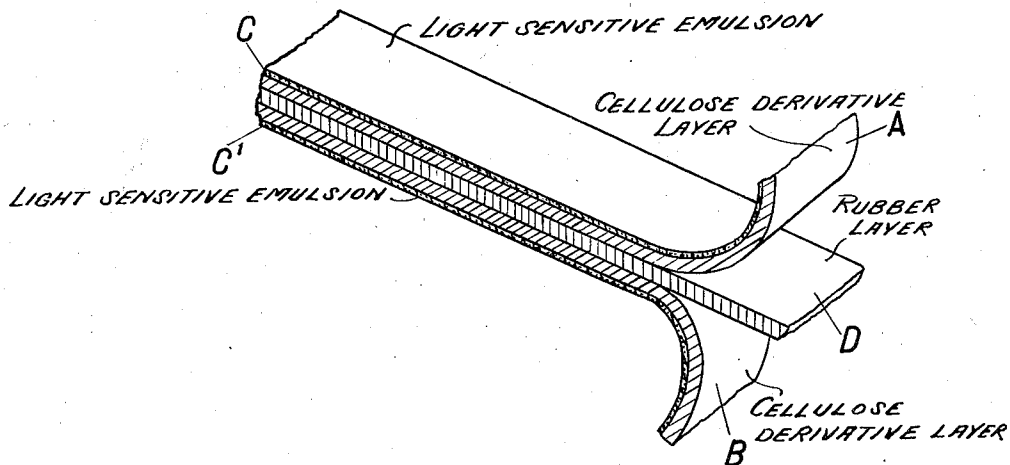


FIG. 2.



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LIGHT-SENSITIVE MATERIAL

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4 Claims. (Cl. 95—9)

My present invention relates to a new photo-
graphic material and more particularly to photo-
graphic films having a stratified base which can
be easily divided into some partial layers. One
of its objects is to provide a film coated on both
sides with a photographic emulsion, wherein the
film base can be split into two partial layer sup-
ports.

Another object of my invention is such a strat-
ified film which can be separated into two partial
layer supports and into a light filter.

Further objects of my invention will be seen
from the detailed specification following here-
after.

It is known to make multi-color photographs
by superposing in any order of succession several
emulsion layers, sensitized for different spectral
regions, and exposing them simultaneously be-
hind an objective, if necessary with interposition
of suitable filters. By this method, several col-
ored partial negatives are obtained which are
separated after exposure or development and are
used for the preparation of a color positive. As
in this process it is of great importance that the
several layers of emulsion should be in contact
as nearly as possible while being exposed, prop-
osals have already been made to apply two of
the emulsion layers required on one and the same
support. In the further course of the process,
one of said emulsion layers has to be stripped
from the support and fixed on a new support.
This requires, however, very intricate work and
the thin emulsion pellicle is liable to be dam-
aged.

According to my invention, this drawback is
avoided by applying the sensitive layers one on
each side of a support composed of one or more
layers. Although the several strata of the layer
support adhere firmly to one another they may
easily be separated, for example, by repeatedly
sharply bending the support at one corner, into
two supports each carrying a light-sensitive layer.

Of course, this detachable light-sensitive ma-
terial may not only be used for the multi-color
photography but for all purposes requiring a
material coated on both its sides with emulsion
layers which are to be treated separately later on.

The support composed of several strata, may
consist of cellulose derivatives as well as of other
suitable substances, such as artificial resins, rub-
ber, and the like. The support may be composed
either of several strata of the same material or
of distinct materials of the same group, for in-
stance, of several strata of different cellulose de-
rivatives. Alternatively I may use for my com-

posite support strata of compounds belonging to
different groups, for instance, two cellulose de-
rivative strata and one rubber stratum. When
superposing the different layers by casting, care
must be taken that the strata can easily be dis-
connected. This can be attained by allowing the
first stratum to dry completely before superpos-
ing the next stratum and by choosing the solvents
of the casting solution to be applied in such a
manner that they do not dissolve or swell the bot-
tom stratum to a noticeable extent.

Besides, the different strata of the film base
may contain any additions known in the manu-
facture of supports for photographic layers, for
instance, pigments and dyestuffs. If it is nec-
essary to optically separate the sensitive layers
applied on each face of the support, one or sev-
eral of the strata of the support may be suitably
colored to constitute a color filter. If, when
printing, this color filter should be inconvenient,
the base of the negative film may be built up in
such a way that readily detachable strata are
fitted, in the manner described, at both sides of
the stratum containing the filter color, so that
the support may be separated into three parts,
namely a filter layer and two supports each
carrying an emulsion layer.

In the following examples I illustrate in which
manner the base of my new photographic films
may be made.

Example 1.—From nitrocellulose dissolved in
a mixture of 3 parts by volume of acetone and 2
parts by volume of methanol, a film is cast in
the known manner. Then, onto this film, a layer
of cellulose acetate is applied from an acetone
solution. When the latter is completely dried,
finally, a second nitrocellulose film is cast there-
on from a solution containing as a solvent a mix-
ture of 3 parts by volume of ether and 1 part by
volume of alcohol. The film base thus obtained,
shows two nitrocellulose strata enclosing a cel-
lulose acetate stratum which strata firmly adhere
together. However, the film base can be split
between the upper nitrocellulose stratum and the
cellulose acetate layer by repeatedly bending a
corner of it.

Example 2.—In an analogous manner, a film
base may be made from cellulose acetate dis-
solved in acetone and of nitrocellulose dissolved
in a solvent mixture containing ether and alcohol
in the ratio 3:1.

Example 3.—The film base may be composed
of a nitrocellulose stratum cast from a solution
containing ether and alcohol in the ratio 3:1, of
a rubber layer cast from a rubber solution in

benzene and of a second nitrocellulose stratum, likewise, cast from a solution containing ether and alcohol in the ratio 3:1 and applied to the dried rubber layer.

5 My invention is not limited by the foregoing examples or by the specific details given therein. Thus, I may use, for instance, other cellulose derivatives or other solvents to prepare the casting solutions, care being taken, however, that
10 the said solvents do not act upon the stratum upon which they are cast. A few simple experiments should be made to determine the best kind of solvent or mixture of solvents to employ with a particular compound intended to form a
15 stratum of the composed film.

My new film bases may be coated either on one side or on both sides with a light-sensitive photographic emulsion in the known manner.

My invention is further illustrated by the accompanying drawing in which

20 Fig. 1 shows a film composed of two strata and

Fig. 2 a similar film comprising three strata.

In Fig. 1, A and B are two films consisting, for
25 instance, of the same or different cellulose derivatives or of other materials well known in the art as a film base. C and C' are the light-sensitive emulsions. The strata A and B adhering together, may be separated by detaching. Fig. 2
30 shows a similar film base comprising three detachable strata of which the middle D may be colored in order to provide a light filter.

The term "different cellulose derivatives" as
35 used in the specification and the claims is intended to cover cellulose derivatives having differing solubility.

What I claim is:—

1. A photographic material comprising a stratified support, the strata of which consist of at

least two dry layers of differently soluble cellulose esters, said layers being fastened to each other over the whole surface solely by the adherence of the materials of the contacting layers, 5 whereby reduced adhesion of the layers is provided so that they are detachable by mechanical means.

2. A photographic material comprising a stratified support, the strata of which consist of at
10 least two dry layers of differently soluble cellulose esters, said layers being fastened to each other over the whole surface solely by the adherence of the materials of the contacting layers, whereby reduced adhesion of the layers is provided so that they are detachable by mechanical
15 means, and said stratified support being coated on at least one face with a light sensitive emulsion.

3. A photographic material comprising a stratified support the strata of which consist of a nitrocellulose layer and a cellulose acetate layer firmly adhering to each other to form one element and a nitrocellulose layer fastened to said cellulose acetate layer over the whole surface solely by
25 the adherence of the materials of the contacting layers, whereby reduced adhesion of the layers is provided, so that they are detachable by mechanical means.

4. A photographic material comprising a stratified support the strata of which consist of a nitrocellulose layer and a cellulose acetate layer fastened to said nitrocellulose layer over the whole surface solely by the adherence of the materials of the contacting layers, whereby reduced adhesion of the layers is provided so that they are
35 detachable by mechanical means.

ARPAD v. BIEHLER.