Aug. 3, 1943. G. F. NADEAU 2,326,058

PHOTOGRAPHIC STRIPPING MATERIAL

Filed July 30, 1942

FIG. 1.

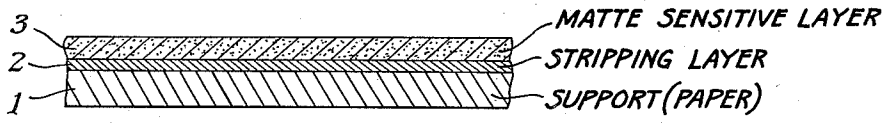


FIG. 2.

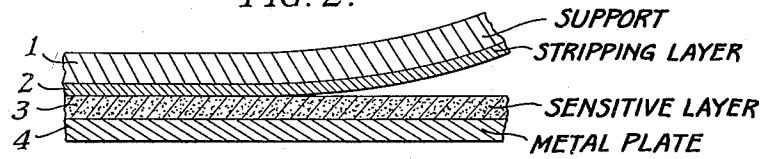
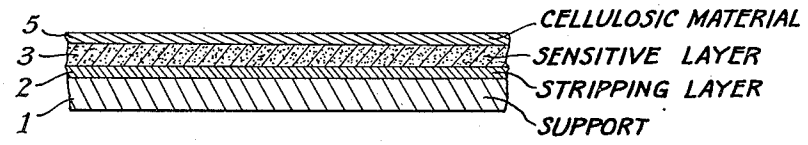


FIG. 3.



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Patented Aug. 3, 1943 2,326,058

UNITED STATES PATENT OFFICE

2,326,058

PHOTOGRAPHIC STRIPPING MATERIAL

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Application July 30, 1942, Serial No. 452,877

3 Claims. (Cl. 95—8)

This invention relates to a photographic stripping material of the type in which the emulsion layer is carried by a temporary support and transferred to a permanent support as distinguished from the type in which the emulsion layer and its permanent support are together carried by a temporary support from which they are stripped together.

My material further is of the type in which the stripping is accomplished dry, as distinguished from the type in which the material is stripped in a wet condition, use being made of the fact that the stripping layer is soluble or its adhesive properties lessened in water or other liquid.

The improvement consists in the combination and choice of materials hereinafter described whereby uniformly reliable results are obtained. The emulsion is readily stripped off when desired but does not tend to strip too easily prior to use and the emulsion is particularly capable of being permanently secured to a final rigid support and of permitting the ready evaporation of the cement used for that purpose. It is particularly intended for use in the process described in the copending application of Victor N. Gioseffi, Serial No. 452,928, filed concurrently herewith, but is, of course, capable of other uses.

Reference is made to the accompanying drawing in which—

Figure 1 is a section on an enlarged scale of my improved stripping material;

Figure 2 is a similar view showing the material partially stripped from a plate to which it has been applied;

Figure 3 is a section of a modified form of my invention.

A single weight baryta coated and calendered paper strip 1 such as is commonly used for photographic purposes is coated with a dry stripping layer 2 of water-soluble hydrolyzed cellulose acetate having an acetyl content between 16 and 18 percent, such as is described in U. S. patent Fordyce No. 2,129,052, granted September 8, 1938. The ester is dissolved in about 5 per cent concentration in water containing from 5 to 10 per cent of butyl alcohol to prevent foaming. The use of a water-soluble material avoids the use of more expensive solvents with their attendant possible hazards of toxicity and explosion and their tendency to attack or penetrate the baryta layer. Moreover, much greater coating speeds may be reached than with organic solvents. The ester is also especially purified to remove salts, the salt content being .5 per cent or less. The presence of salts which are more or less hygroscopic increase the bond between the emulsion layer and the stripping layer and makes stripping more difficult or uneven at high humidities. The speed and thickness of coating are so adjusted as to give a finished coating or spread of approximately eight grams of ester per square meter of paper surface.

Over this stripping layer 2 is coated a photographic emulsion layer 3. This may be of any type but for the copying of drawings is a high contrast emulsion. It is preferably unhardened, since such an emulsion adheres much more strongly to a lacquered metal surface to which it is to be transferred. This is true of the freshly cemented bond as well as the dried material. The unhardened emulsion is apparently more open in structure permitting the cement to penetrate more readily into the emulsion layer and thus increase the adhesion.

The emulsion also contains a matting material, such as starch grains, diatomaceous earth, ground glass, or barium sulfate, which adds a tooth to the emulsion layer, such that after exposure and development, it can take pencil lines, thus permitting additions to be made to the drawings. The matting material may be present in an amount from three to twenty five percent of the weight of the dry emulsion.

I have found further that the use of the matting material and of the unhardened emulsion render the structure of the emulsion such that evaporation of the organic solvent of the laminating cement used in applying the emulsion layer to the metal sheet is much more rapid than would otherwise be the case.

In use the stripping material is applied to a plate 4 of metal or other rigid material with a suitable lacquer such as an alcohol solution of cellulose nitrate applied between the emulsion and the sheet which remains on the plate.

The stripping paper is ordinarily left on the metal plate to which it is attached until the latter is to be used, when stripping is started at one corner of the dry material.

Stripping takes place between the emulsion layer 3 and the layer 2, which comes off cleanly with the support 1, leaving a metal or other rigid plate 4 with a sensitized matte emulsion layer which is particularly useful for the making of prints of line drawings. This is indicated in Figure 2 where stripping is shown as having been begun.

If desired, an additional layer 5 of a cellulosic material may be applied over the sensitive emul-

sion 3, as indicated in Figure 3. This protects the emulsion prior to its application to the metal plate yet can be attached to the plate where it remains as a sub-layer for the emulsion.

Having thus described my invention, what I claim as new and desire to be secured by Letters Patent is:

1. A photographic stripping material comprising a flexible paper support, a stripping layer on one surface thereof and a photographic emulsion layer over said stripping layer, the emulsion layer being of unhardened gelatine and containing a matting material and the stripping layer comprising hydrolyzed cellulose acetate having an acetyl content of between 16 and 18 per cent, the support and stripping layer being capable of being readily stripped together from the emulsion layer.

2. A photographic stripping material comprising a flexible support, a stripping layer on one surface thereof and a photographic emulsion layer over said stripping layer, the emulsion layer being of unhardened gelatine and the stripping layer comprising hydrolyzed cellulose acetate having an acetyl content of between 16 and 18 per cent, the support and stripping layer being capable of being readily stripped together from the emulsion layer.

3. A photographic stripping material comprising a flexible support, a stripping layer on one surface thereof and a photographic emulsion layer over said stripping layer, the emulsion layer being of unhardened gelatine and the stripping layer comprising hydrolyzed cellulose acetate having an acetyl content of between 16 and 18 per cent and having a salt content of less than .5 per cent, the support and stripping layer being capable of being readily stripped together from the emulsion layer.

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