Nov. 3, 1936. N. F. BEACH 2,059,843

METHOD OF MAKING STRIPPING FILM

Filed Aug. 23, 1934

FIG. 1.

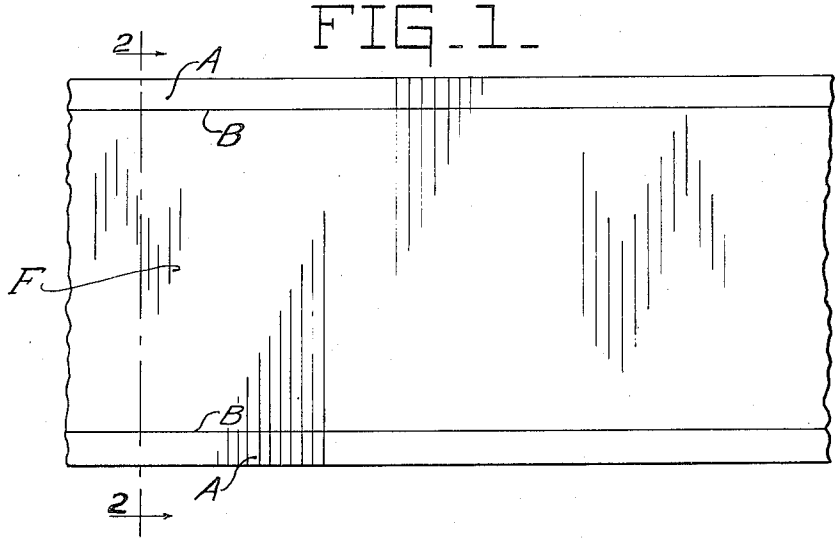
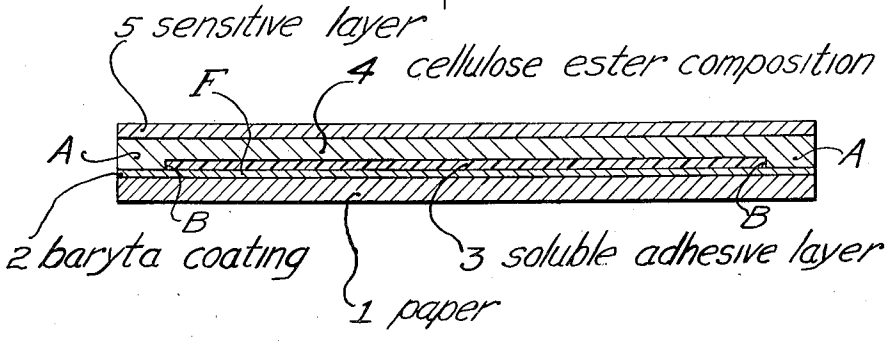


FIG. 2.



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METHOD OF MAKING STRIPPING FILM

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Application August 23, 1934, Serial No. 741,087

3 Claims. (Cl. 91—69)

This invention relates to a method of manufacture of stripping film, such for instance as of the type disclosed in the U. S. patent of C. R. Fordyce and M. Salo, No. 1,973,476, granted Sept. 11, 1934 or the application of H. R. Couch and John H. Folwell, Serial No. 756,294, filed Dec. 6, 1934. In general such a film consists of a support which may be of double weight paper with a glossy baryta coating, coated on the glossy surface with a readily soluble adhesive layer, such as glue and glycerine, and this in turn carrying a transparent layer of cellulose ester composition which acts as the permanent support for the sensitive emulsion layer.

A requirement of such a product is that during the process of developing, fixing and washing, the liquids must penetrate to the readily soluble adhesive layer and dissolve or soften it so that the transparent sheet carrying the emulsion may be readily stripped from the paper and transferred to a glass plate.

It has been found that the stripping time, that is, the time during which the composite sheet must be immersed to permit stripping, may be reduced in various ways, such as by reducing the thickness of the paper or using materials of very high solubility, but that if it is reduced beyond a certain point, difficulties are encountered during the emulsion coating process, in that the moisture from the aqueous gelatine sensitive emulsion, during drying, tends to penetrate to and solvate the adhesive coating, sometimes causing the transparent support to shift on or be separated from the paper support.

I have found that this tendency can be counteracted if the adhesive coating is not applied to the full width of the paper band, but an uncoated border is left at each edge. The transparent support composition is then applied over the full width of the paper band and adheres very tightly at the uncoated borders, anchoring the layer in place. When the emulsion layer is then applied there is no tendency to slip. When the composite layer is fully dried, there will be firm adherence on the entire area. The borders are then slit off, leaving the composite stripping layer only.

Reference will now be made to the accompanying drawing in which the same reference characters designate the same parts throughout and in which

Fig. 1 is a plan view of a panel showing the relation of the uncoated borders and

Fig. 2 is a section of line 2—2 of Figure 1.

The film or strip as a whole is designated F and includes the paper band 1, usually of double weight material and carrying a glossy coating 2. This is coated in a strip coating machine of usual type with a readily soluble adhesive layer 3, this being coated over only a portion of the band 1, leaving strips A, usually and preferably along the borders, uncoated. When this has dried, or at least set, there is coated a layer 4 of any desired transparent cellulose ester composition, this being applied on the full width of the band 1. Preferred compositions are given in the said Fordyce and Salo patent. Upon evaporation of the solvents, this adheres very firmly to the paper along the strips A, and anchors layer 4 firmly in place even if the layer 3 should be softened or dissolved. The sensitive layer 5 is then applied from a dilute aqueous gelatino-halide emulsion. Since the layer 4 is permeable the moisture from the emulsion tends to attack and soften layer 3, but no slippage can occur for the reasons pointed out. When the composite layer is dried, this tendency to slip disappears, and the borders may then be trimmed off along the lines B, B, indicating the edges of the layer 3. It is then cut up into commercial sizes as required in use.

I consider as included within my invention all such modifications and equivalents as come within the scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent of the United States is:

1. The method of making a stripping film that comprises coating a substantial portion only of a supporting sheet with an adhesive layer, readily soluble in photographic baths, leaving a small uncoated area, applying over the entire sheet a coating of a composition which is water-permeable but is insoluble in water or in photographic baths, and which forms a layer firmly adherent to the supporting sheet at the portions uncoated with the adhesive layer, coating the last applied layer with an aqueous photographic emulsion, drying the assembled layers and then trimming off the areas which are uncoated with the adhesive layer before exposure of the photographic emulsion.

2. The method of making a stripping film that comprises coating the central portion of a band of paper with an adhesive layer, readily soluble in water, leaving the borders of the band uncoated, applying over the entire band a coating of a composition which is water permeable but is insoluble in water or in photographic baths and which forms a layer firmly adherent to the supporting sheet only at the borders, coating the last

applied layer with an aqueous photographic emulsion, drying the assembled layers and then trimming off the borders before exposure of the photographic emulsion.

3. The method of making a stripping film that comprises coating a substantial portion only of a supporting sheet with an adhesive layer, readily soluble in photographic baths, leaving a small uncoated area, applying over the entire sheet a coating of a cellulosic material which is water-permeable but is insoluble in water or in photographic baths, and which forms a layer firmly adherent to the supporting sheet at the portions uncoated with the adhesive layer, coating the last applied layer with an aqueous photographic emulsion, drying the assembled layers and then trimming off the areas which are uncoated with the adhesive layer before exposure of the photographic emulsion.

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