Oct. 14, 1930. A. L. GRAMMER 1,778,490

BOOK AND METHOD OF MAKING SAME

Filed Oct. 18, 1928

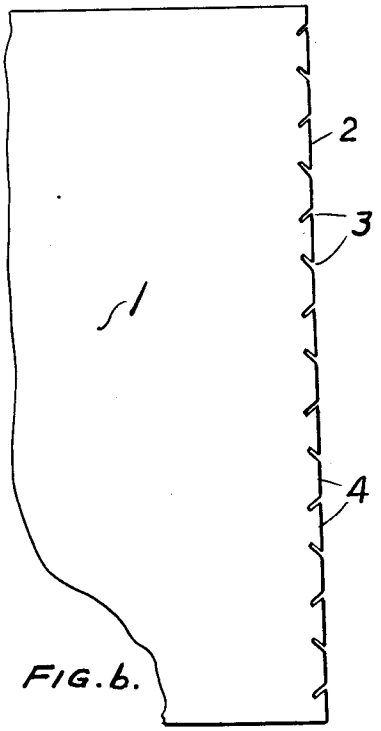


FIG. 6.

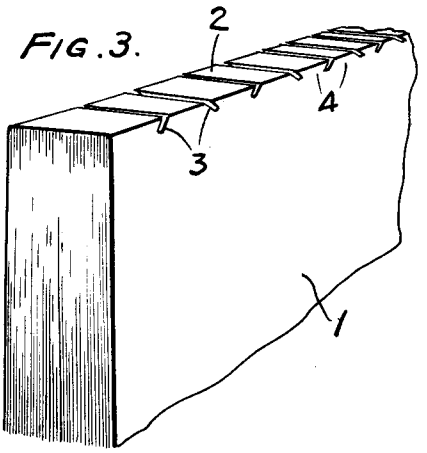


FIG. 3.

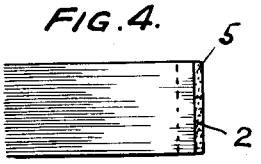


FIG. 4.

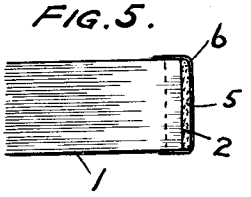


FIG. 5.

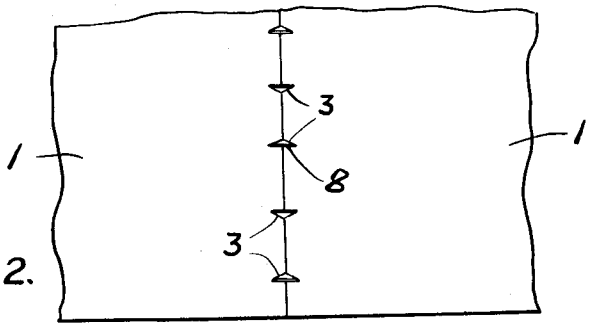


FIG. 2.

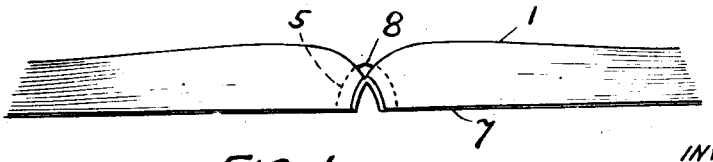


FIG. 1.

WITNESS:

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1,778,490

UNITED STATES PATENT OFFICE

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BOOK AND METHOD OF MAKING SAME

Application filed October 18, 1928. Serial No. 313,207.

Objects of the present invention are to provide books usually consisting of single leaves but often consisting of signatures and which, while firmly secured or bound together, are capable of being opened perfectly flat or more nearly so than books bound by any method heretofore in use and known to me; to provide a simple, expeditious and comparatively inexpensive method of making such books; and to discover a material suitable for the purposes mentioned and to provide for its application and use.

The invention will be claimed at the end hereof but will be first explained in connection with the accompanying drawing in which

Figure 1 is an end view of a book embodying features of the invention and showing an elastic web between adjacent leaves.

Fig. 2 is a top or plan view of a portion of the book shown in Fig. 1.

Fig. 3 is a perspective view illustrating the gutter edges of gathered leaves provided with inclined notches.

Fig. 4 is an end view illustrating the leaves shown in Fig. 1, in the next stage of the manufacture of a book.

Fig. 5 is a similar view illustrating a succeeding stage in the manufacture of the book, and

Fig. 6 is a front view of one of the leaves detached.

One way to practice the method of the invention may be described as follows:

Printed leaves 1 are gathered into book form or into a pile or stack. This may be done by gathering signatures and trimming off and roughening the gutter edges 2. Signatures may be gathered without cutting off the gutter folds. Notches are then cut at the gutter edges and through all the leaves. These notches range crosswise of the book and the cuts by which they are made extend clear through all of the gathered leaves and in the case of signatures through all of them. The notches 3 are inclined and one set of notches is inclined in one direction and the other set of notches is inclined in the other direction providing wedge shaped or dovetail portions 4 between the notches. The material employed for binding the leaves is known as treated latex in the trade. It consists of rubber latex treated or cured to oppose coagulation. It has the property of solidifying from a liquid to a solid state in which latter it is very elastic and remains so and is also unaffected by ordinary conditions of heat and moisture to which books are exposed. It is an advantage that the treated latex is devoid of volatile and inflammable solvent. This material will be hereinafter referred to by its trade name, treated latex. Treated latex is applied in the grooves or notches 3 and to the edges 2 of the leaves as by brushing or spraying as indicated at 5 in Fig. 4. The leaves may be fanned out, first in one direction and then in the other, and the latex applied to them in those positions in order to deposit some of it on the fans near the edges. It is important that the grooves or notches receive the treated latex for reasons that will hereinafter appear.

Supercloth or paper 6 in strip form may then be applied to the edges 2 of the leaves and more treated latex may be applied to the supercloth or paper strip 6 and the cover 7 applied. In all cases the strip 6 is not essential.

It is a feature of the invention that when the book is opened there is between each leaf an elastic web 8 of treated latex which extends through the notches 3, thus the book may be opened very flat and the leaves are bound by what may well be called a dovetail joint provided between the portions 4 of the leaves and the webs 8 of latex and the cover or strip 6 when present.

In the case of inclined notches it is evident that the book is stronger as it is opened, because the stretched webs bear down upon the leaves.

When the latex is applied to the faces near the edges of the leaves as well as to the leaves tongues are provided between the leaves and they bond them together.

While I have referred to treated latex, I do not intend to exclude equivalent materials and I therefore refer to the material as rubber which includes rubber material.

Latex is a water emulsion of rubber, with

the latter in the inner phase, and there is usually added to it a compound of ammonium to keep the emulsion from breaking. Latex may be diluted with water without breaking the emulsion. It may be said that according to my invention rubber is introduced into the binding from an emulsion thereof with a volatile emulsifier. The emulsion like the rubber is not adhesive but by entering the pores and notches and after volatilization of the emulsifier it bonds the book with rubber in the form in which it occurs in natural latex.

A book having the gutter edges of its leaves embedded in rubber latex and providing elastic webs of rubber latex between the leaves when the book is open, which may be produced by fanning the leaves at the gutter edges and applying the latex to them in that position, is not claimed herein since it constitutes a second species of the invention made the subject-matter of application Serial No. 461,898, filed June 18, 1930.

It will be obvious to those skilled in the art to which my invention relates that modifications may be made in details of construction and procedure and matters of mere form without departing from the spirit of the invention which is not limited to such matters or otherwise than the prior art and the appended claims may require.

I claim:

1. A book comprising gathered leaves having marginal notches at the gutter edge, in combination with rubber filling the notches and providing elastic webs of rubber between the leaves when the book is open.

2. A book comprising gathered leaves having marginal inclined notches at the gutter edge, in combination with rubber in non-adhesive form filling the notches and providing elastic webs of such rubber between the leaves when the book is open.

3. A book comprising gathered leaves having marginal inclined notches in sets inclined in opposite directions at the gutter edge, in combination with rubber in non-adhesive form filling the notches and providing elastic webs of such rubber between the leaves when the book is open.

4. The method of making books which includes gathering leaves, notching through the gathered leaves at the gutter edges, and filling said notches with rubber to provide elastic webs of rubber extending between the leaves.

5. The method of making books which includes gathering leaves, notching through the gathered leaves at the gutter edges, and introducing an emulsion of rubber with a volatile emulsifier into the notches and permitting the emulsifier to volatilize.

ALLEN L. GRAMMER.