

(No Model.)

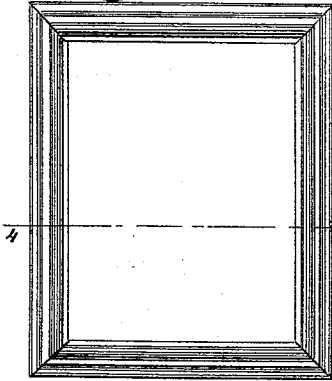
A. C. HAFELY.

METHOD OF MAKING CORNERS, COVERS, AND LIKE PARTS FOR BOOKS,  
BOXES, AND SIMILAR ARTICLES OF CELLULOID OR KINDRED MATERIAL.

No. 488,630.

Patented Dec. 27, 1892.

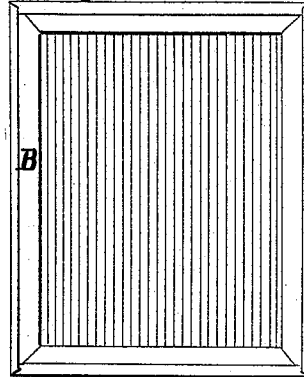
*Fig. 1.*



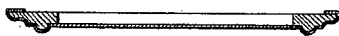
*Fig. 3.*



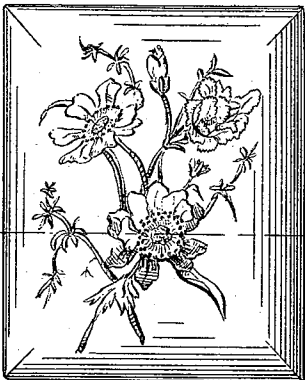
*Fig. 2.*



*Fig. 4.*



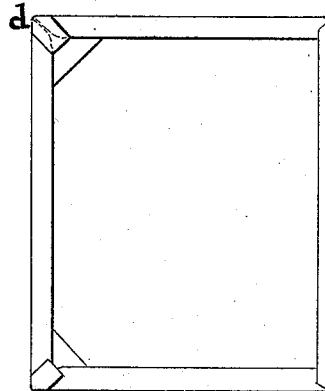
*Fig. 5.*



*Fig. 7.*



*Fig. 6.*



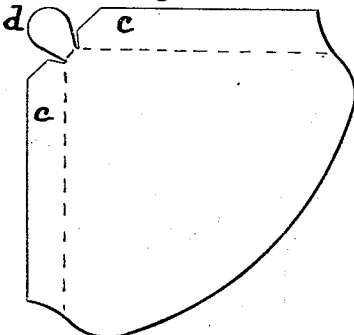
*Fig. 8.*



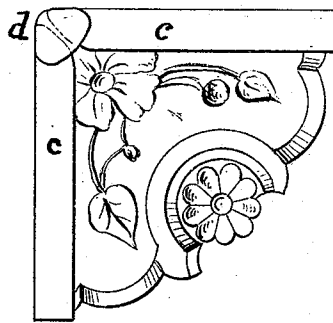
*Fig. 9.*



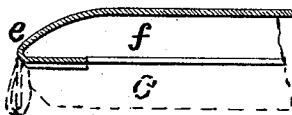
*Fig. 10.*



*Fig. 11.*



*Fig. 12.*



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# UNITED STATES PATENT OFFICE.

ALFRED C. HAFELY, OF NEW YORK, N. Y.

METHOD OF MAKING CORNERS, COVERS, AND LIKE PARTS FOR BOOKS, BOXES, AND SIMILAR ARTICLES OF CELLULOID OR KINDRED MATERIAL.

SPECIFICATION forming part of Letters Patent No. 488,630, dated December 27, 1892.

Application filed April 27, 1892. Serial No. 430,900. (No model.)

*To all whom it may concern:*

Be it known that I, ALFRED C. HAFELY, of New York city, New York, have invented certain new and useful Improvements in Covers and Corners for Boxes, Albums, Picture-Frames, and Like Uses, of which the following is a description, reference being had to the accompanying drawings, which form part of this specification.

10 The object of my invention is to produce covers, corners, and like articles for books, boxes, albums and other uses which shall have certain ornamental features not heretofore accomplished and which may be readily and economically manufactured, may be somewhat elastic and of shapes which do not tend to injure surrounding objects. Heretofore metal corners have been made and used, but owing to the hardness and stiffness of the metal, the shapes which I contemplate cannot be produced, and the sharp stiff edges and corners cut into the covers of the books upon which they are used, and scratch or bruise the neighboring books or other articles with which they come in contact. Moreover it is desirable for producing certain effects to die, tint, or grain the plain or embossed surfaces of the covers and corners and this is so expensive and so unsatisfactory where metal is used, as to almost preclude such ornamentation. I have however discovered a new and useful manner of preparing such covers and corners from thin sheet celluloid or other substance rendered plastic by heat and the finished article can thereby be made to possess features not heretofore possible by any method I am aware of. The elasticity of the celluloid together with its plasticity when warm renders it peculiarly adaptable to my invention and as it may be made transparent, translucent, or tinted, and grained, I am enabled by embossing and by the use of suitable coloring, and suitable tinted backings beneath it, to obtain a variety of very beautiful effects.

45 To such ends my invention consists of and is embodied in the method of forming album, box, book, and like corners, and other ornamental parts, and the article so produced, substantially as hereinafter described, illustrated and claimed.

In the accompanying drawings, Figures 1

and 2 are front and rear views of a box cover made in accordance with my invention. Figs. 3 and 4 are sections of the same on line 4—4 of Fig. 1, and show respectively the wooden frame or patrix with and without the applied sheet of celluloid. Figs. 5 and 6 are front and rear views of a book cover. Figs. 7, 8, and 9, show details of its manufacture. Figs. 10, and 11, show details of a manufacture of an album corner, and Fig. 12 a rear view of the completed article.

In the views like letters of reference indicate like parts.

In making box covers according to my invention I may employ a wooden frame B, which is shown in cross section in Fig. 3 and is provided with ornamental moldings as shown. The celluloid sheet, cut to the proper size and embossed with ornamental figures as will hereinafter be described, or plainly if preferred, is then laid upon the frame. A heated matrix corresponding in shape to the frame B, is then brought down, and the celluloid which is heated and rendered plastic thereby is pressed into shape between the matrix and the frame, the latter forming a patrix therefor to which the celluloid conforms. It is preferable to first coat the frame with celluloid cement so that the celluloid when pressed into place by the heated die may be firmly cemented to the frame. After this operation the edges of the celluloid sheet project perpendicularly from the frame. They may then be heated and turned down as in Fig. 2, and a flat heated iron applied to them. By a pressure from or against the heated iron the overlapping corners are thoroughly blended and united. If desired, the corners may be first covered with celluloid cement so that they may be more readily blended or cemented together. By this means it will be seen a box cover is produced containing a stiff frame, as shown in Figs. 1 to 4. I form covers for books and albums in a similar manner. Preferably however the cover is embossed and its edges turned up at right angles, as shown in Fig. 7, by means of two heated dies which render the material plastic and capable of taking up the curved outline required. A pad made of wadding or other soft material is then substituted in place

of the patrix die, as in Fig. 8, and the corners turned over and secured at the rear of the cover as shown in Fig. 6, in a manner substantially the same as in the case of the box cover just described. In this way a soft padded cover, such as is shown in Figs. 5 and 9, may be produced. Leather, basket work, and other designs may be made use of in forming such a cover and the elasticity and smoothness of the finished surface render it peculiarly adapted for albums and like ornamental uses. The construction may be modified somewhat by substituting a permanent patrix in the process of embossing and turning up the edges upon the back of such albums. This is a mere variation of Fig. 1.

In the forms heretofore described, the finished article has contained a frame, or permanent padding, to which the celluloid covering is secured. In Figs. 10, 11, and 12, is shown, on the other hand, a corner adapted to be fitted over and to be secured to the finished cover of a book or album. In forming this corner the sheet of celluloid is first cut to a suitable blank as in Fig. 10. This blank has the side flaps *c* which turn over the edges of the book, and the flap or tongue *d*, to cover the corner where the two flaps meet. The blank is first pressed between two suitable dies which are heated, and render the blank soft and plastic. By these dies the central or exposed portion is embossed with ornamental designs and given the rounded form shown in Fig. 12 at *e*. The flaps *c* and tongue are turned up at right angles on the line *F*, and present the appearance indicated by dotted lines in Fig. 12. The flaps and tongue are then treated with suitable cement and subjected to pressure between the flap back of the patrix and a heated plate. By this action of heat and pressure are secured together and thoroughly blended as shown in Fig. 11. The corner is now complete and may be removed from the die and the patrix slipped out of it. A full celluloid side or cover of a book may be made in a manner similar to the corner just described it being only necessary to use a blank, dies, &c., provided with two instead of one cover. The material of which like corners and covers are made may be entirely opaque, translucent, or transparent, or may be in part opaque, and in part otherwise. Color effects may be produced by applying color padding at the back of translucent celluloid, or by applying paint or pigment to the under surface. The exposed surface may be ornamented by applying designs of various colors to its embossed surface, and the final polishing by partially removing the colors

from the points most in relief, produces an effect of shades and tints which is exceedingly beautiful.

It must not be understood that my invention is limited to the use of celluloid. On the contrary kindred preparations of cellulose and like substances may be employed and a variety of effects thereby produced.

I am aware that sheet celluloid has been applied to molding by means of heat, vacuum, and external fluid pressure. My method and the articles produced by it are substantially different both in purpose and in result.

I have now set forth several ways of applying my method and several forms of the article it is intended to produce.

I therefore claim as my own and desire to secure by these Letters Patent, the following.

1. The method of making covers, corners, and like parts for books, boxes, and other uses, of sheet celluloid or kindred material, rendered plastic by heat, which consists of forming up its border by suitable dies, first at right angles and then parallel to the cover or corner, and uniting them by the application of heat and pressure, substantially as set forth.

2. The method of making covers, corners, and like parts for books, boxes, and other uses, of sheet celluloid or kindred material, rendered plastic by heat, which consists of forming up its border by suitable dies, first at right angles and then parallel to the cover or corner, uniting and blending them by the application of heat and pressure, and padding or filling the interior so formed, substantially as set forth.

3. The method of making corners, covers, and like parts for books, boxes, and other uses, of celluloid or other material that may be rendered plastic by heat, which consists in applying heat and pressure by suitable dies, folding over the borders, and cementing or otherwise securing them together, substantially as set forth.

4. A cover or corner for books, boxes, and like uses consisting of a sheet of celluloid or kindred material, and provided with round corners, the borders of the said cover or corner being folded over upon its back, and a tongue or flap at meeting edges of the said borders, cemented or otherwise secured thereto, substantially as, for other purposes, set forth.

In testimony whereof I have hereunto set my hand this 14th day of April, 1892.

ALFRED C. HAFELY.

Witnesses:

FRED. HEMMING,  
HAROLD BINNEY.