J. G. MILES.

BOOK COVER.

APPLICATION FILED MAY 23, 1919.

1,365,335. **Patented Jan. 11, 1921.**

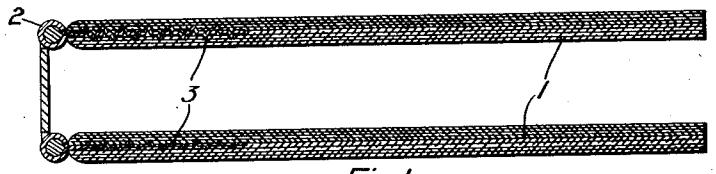


Fig. 1.

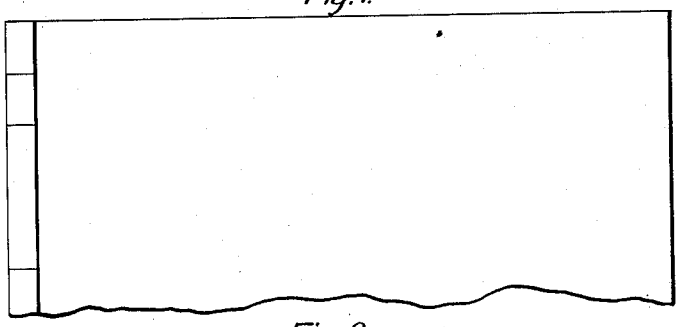


Fig. 2.

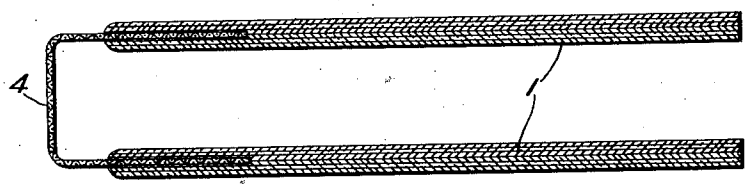


Fig. 3. 3

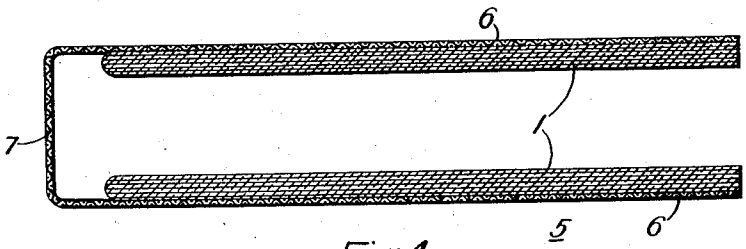


Fig. 4.

WITNESSES:

H. T. Shelhamer

O. E. Bee.

INVENTOR

John George Miles

BY

Wesley G. Carr

ATTORNEY

UNITED STATES PATENT OFFICE.

JOHN G. MILES, OF PITTSBURGH, PENNSYLVANIA, ASSIGNOR TO WESTINGHOUSE ELECTRIC & MANUFACTURING COMPANY, A CORPORATION OF PENNSYLVANIA.

BOOK-COVER.

1,365,335. Specification of Letters Patent. Patented Jan. 11, 1921.

Application filed May 23, 1919. Serial No. 299,233.

To all whom it may concern:

Be it known that I, JOHN GEORGE MILES, a citizen of the United States, and a resident of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Book-Covers, of which the following is a specification.

My invention relates to book covers and it has, for its primary object, the provision of book covers which shall be exceptionally durable in service and which shall possess a decorative finish.

I have found that layers of fibrous material, such as duck or paper, impregnated with a suitable binder and formed into composite plates under the action of heat and pressure possess desirable qualities when employed as book covers. By impregnating the fibrous material with a binder, such as a phenolic condensation product, a highly decorative finish may be obtained during the natural course of construction of a plate. Furthermore, covers formed of plates of this character are exceptionally durable in service, being highly resistant to the effects of moisture, weak acids, or alkalis and possessing such mechanical strength that their corners do not become mashed.

While plates formed of fibrous material, impregnated with a hardened phenolic condensation product, possess desirable qualities for employment as book covers, certain difficulties are encountered in forming covers of such material. For example, a cover may be formed, by employing a plurality of plates of the above mentioned material, which may have hinge members secured thereto by rivets or by employing a suitable adhesive to fasten the hinge members to the plates. Although a structure comprising plates and connecting hinges secured thereto by rivets is durable, the metallic surfaces of the rivet heads are sometimes undesirable. In some instances, to avoid the necessity of rivets, the hinges have been secured to the plates by employing a pliable material and a suitable adhesive. It is difficult, however, to obtain an adhesive which will insure sufficient mechanical strength to prevent the hinges from becoming loosened and consequently, injured during service.

By my present invention, I provide a book cover comprising a plurality of plates composed of layers of fibrous material impregnated with a hardened binder having hinge members secured thereto by molding the hinge members between certain of the layers of the plates or by molding the hinge members upon each plate.

My invention will be more fully understood by reference to the drawings in which Figure 1 is a sectional view of a book cover having hinge members molded therein in accordance with my invention; Fig. 2 is a plan view, parts being broken away, of the cover shown in Fig. 1; Fig. 3 is a sectional view of a plurality of composite plates connected by a suitable hinge, in accordance with my invention, and Fig. 4 is a sectional view of a modified form of book cover.

I may construct a book cover by employing layers of fibrous material, such as duck, paper or linen, cut to suitable size, and by impregnating the material with a suitable binder, such as a phenolic condensation product. The material may be stacked to suitable thickness and the leaf of a hinge member of any suitable design may be interposed between certain of the layers of material, after which they may be subjected to heat and pressure in a mold to compact the material and to harden the binder, thereby securing the hinge member to the resulting composite plate. A plurality of such plates may be employed as a book cover or I may provide a book cover by constructing a plurality of such plates which may be connected by a portion of untreated, pliable material having its ends interposed between certain of the layers of the plates.

In Fig. 1 are shown composite plates 1 comprising layers of duck impregnated with a phenolic condensation product as a binder, the layers being first treated with the phenolic condensation product and then subjected to heat to dry the impregnating agent to facilitate the handling of the material. The material of each plate may be stacked to a suitable thickness and a hinge member 2, preferably having its leaf corrugated or otherwise roughened, as indicated at 3, may be interposed between certain of the stacked layers of material and the body thus assembled may then be subjected to heat and pressure to compact the material and to harden the binder. The hinge member 2 is, therefore, firmly secured to the composite plate 1. A plurality of the plates 1, having hinge members 2, may be connected, in any

well known manner, to form a book cover. The hinge members 2, as shown, are intended merely to illustrate the manner of securing hinges to the composite plates 1. The hinges may, however, be of any suitable form such as are commonly employed in constructing book covers.

In Fig. 3 is shown a book cover 3 of slightly modified form. In this instance, a hinge member 4 comprising a pliable material, such as leather, canvas, linen or any other suitatble fabric, is employed to connect the composite plates 1. The pliable material may have its ends secured to the plates 1 by imposing them between the stacked layers of treated material constituting the composite plates, and the structure thus assembled may then be subjected to heat and pressure to compact the material and to harden the binder. If it is desirable, the pliable hinge member 4 may be partially protected by any suitable metal strips (not shown) which may be secured about the portions thereof which need not be bent in service.

In Fig. 4 is shown a book cover 5 which is similar to the cover shown in Fig. 3. In this instance, the pliable connecting material may have its ends 6 treated with the binder and be superposed upon the layers of material which are to form the plates 1. The connecting portion 7 may be kept free of the binder so that, when the assembled body is subjected to heat and pressure, the ends 6 shall be molded into a homogeneous part of the plate 1 and the portion 7 shall be pliable.

A hinge member secured to a composite plate of the above described material is firmly held in place and presents no uneven surfaces upon either the exterior or the interior of the completed cover. A distinct advantage is obtained, therefore, in that a plurality of books of this type may be evenly stacked and no abrasive surfaces will be exposed which may injure highly polished desks or shelves.

Although I have described a cover constructed in accordance with my invention, it is obvious that minor changes may be made therein, especially in the type of hinge member employed, and I desire, therefore, that no limitations shall be imposed except such as are indicated in the appended claims.

I claim as my invention:

1. A book cover comprising superimposed layers of fibrous material impregnated with a hardened binder and a hinge member interposed between certain of the layers and extending beyond the edges thereof.

2. A book cover comprising superimposed layers of fibrous material impregnated with a hardened phenolic condensation product and a hinge member interposed between certain of the layers and extending beyond the edges thereof.

3. A book cover comprising superimposed layers of duck impregnated with a hardened binder and a hinge member interposed between certain of the layers and extending from the edges thereof.

4. A book cover comprising a plurality of plates including layers of duck impregnated with a hardened binder and a hinge member interposed between certain of the layers of each plate and extending beyond the edges thereof whereby the plates may be connected together.

5. A book cover comprising a plurality of plates including layers of duck impregnated with a hardened binder and a portion of untreated material having one of its ends interposed between certain of the layers of each plate.

6. A book cover including a plurality of plates comprising layers of fibrous material impregnated with a phenolic condensation product and a portion of untreated material having one of its ends interposed between certain of the layers of each plate, the assembled structure having been subjected to heat and pressure in a mold to compact the material and harden the phenolic condensation product.

7. A book cover including a plurality of plates comprising superposed layers of sheet material impregnated with a hardened phenolic condensation product and a layer of material molded to each plate having a pliable portion which connects the plates.

In testimony whereof, I have hereunto subscribed my name this 17th day of May 1919.

JOHN G. MILES.