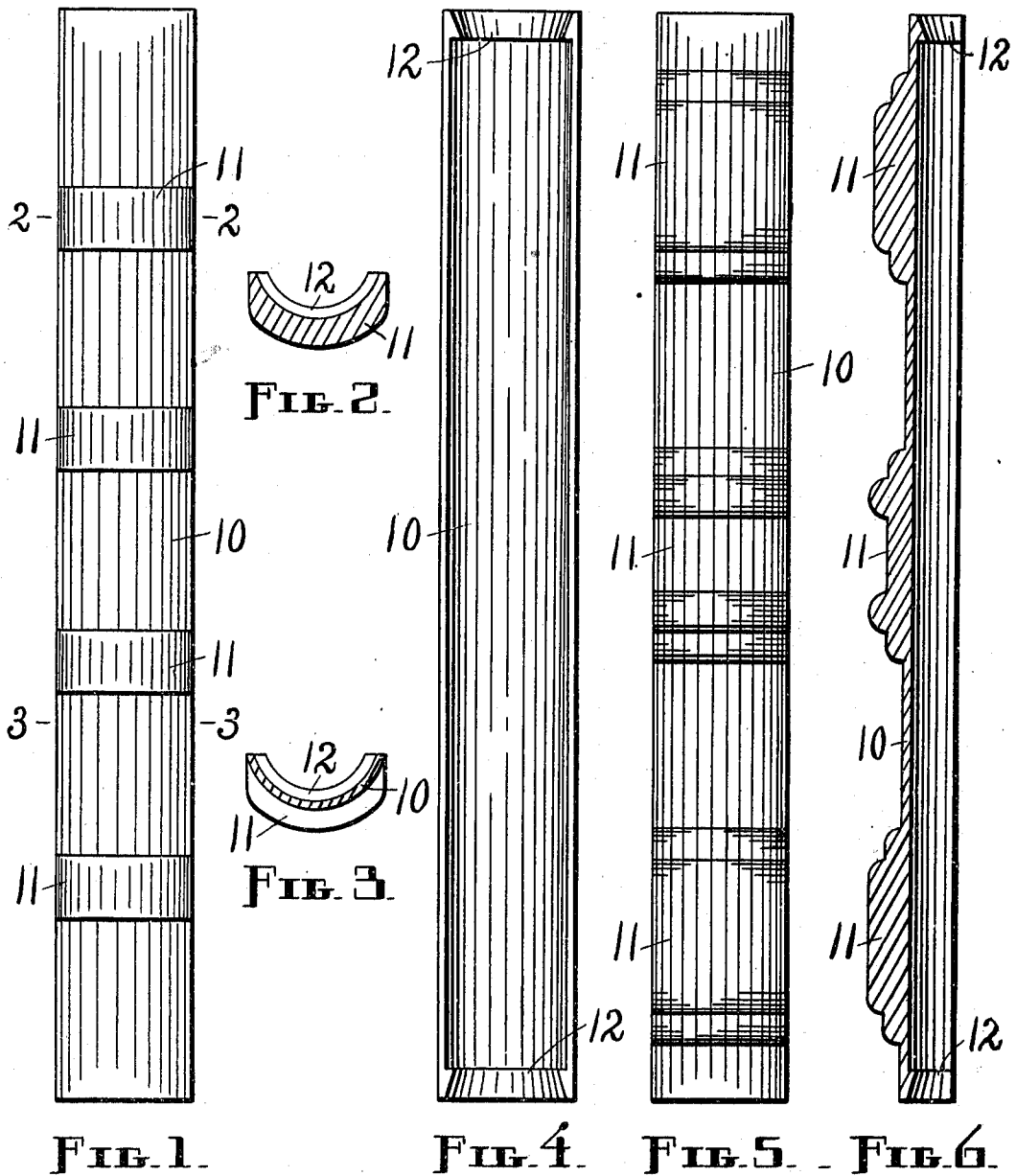


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BOOK BACK.
APPLICATION FILED AUG. 13, 1908.

945,333.

Patented Jan. 4, 1910.



WITNESSES:
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UNITED STATES PATENT OFFICE.

THOMAS E. LAYTON, OF HOLYOKE, MASSACHUSETTS, ASSIGNOR TO NATIONAL BLANK BOOK COMPANY, OF HOLYOKE, MASSACHUSETTS, A CORPORATION OF MASSACHUSETTS.

BOOK-BACK.

945,333.

Specification of Letters Patent.

Patented Jan. 4, 1910.

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To all whom it may concern:

Be it known that I, THOMAS E. LAYTON, a citizen of the United States of America, residing at Holyoke, in the county of Hampden and State of Massachusetts, have invented a new and useful Book-Back, of which the following is a specification.

My invention relates to improvements in backs for blank and other heavy books of comparatively large size in which strength and durability are or should be prominent features, and consists more particularly of a back made in one piece, including the hubs and heads, of some suitable fibrous material, such as paper stock or wood, which is capable of being pressed into shape while in a plastic, or, more correctly perhaps, pulpy condition, and then of hardening to form a substantial mass or body of the required strength, stiffness, and durability, as hereinafter set forth.

The objects of my invention are, first, to produce a book back which is solid and homogeneous throughout, all of the members being integral; second, to provide such a back with hubs of uniform height and width, and with uniform heads, so that all books into the construction of which my backs enter will have a uniform appearance; third, to furnish a back with hubs and heads which cannot work loose, and, fourth, to produce a back that, while being adequately strong and durable, is also very inexpensive, this last being due to the fact that said back can be made in an inconsiderable period of time and without the numerous operations generally resorted to which call for much skill and labor. In this connection it may be well to note that in the manufacture of a hundred of these backs there is a saving of some six, more or less, intricate, laborious and skilful operations, and of about seven hours, over the same number of backs manufactured in the old way by methods best adapted for first-class work in the production of first-class books.

Heretofore book backs have generally been made either by pressing them out of binder's board without integral heads, for cheap backs, or by forming them out of binder's board and afterward gluing on the hubs and heads, or in some cases omitting the heads from the backs themselves as fixed parts or actual attachments thereof. A back produced by the first of these methods

is not stiff or strong enough for the desired purpose and is not therefore used for good work, while a back produced by the second of these methods is expensive and also lacks certain essential qualifications which are possessed by my improved back. In the first place, the binder's board, out of which the best backs are now made, is very much weakened during the process of transforming such board into backs, by reason of the fact that it has to be softened by wetting, then pressed into shape, and then allowed to dry. The binder's board in the back thus produced is not only considerably weaker than the board was originally, but it shrinks more or less in drying.

Owing to the shrinking and to the great difficulty in properly building up the hubs out of strips of binder's board or of leather pasted or glued together to the proper height and attaching them in exactly the right places to the aforesaid back, the finished back is often too large or too small in cross-section, and the titles which are machine-made will not fit in their places, nor can the end and center bands for the back and sides of the book be placed with the exactitude desired. But by far the greatest defect which characterizes a back that is pressed into shape relates to the hubs and headers. Pasteboard is entirely different from metal, and when a properly cut piece of dampened pasteboard is compressed between suitable dies to form a book back with hubs, the pulp will not flow like metal when portions of the board are forced outwardly to form the hubs, but such pulp simply tears apart at the points of junction between the hubs and the main body of the back thus leaving these points thin and weak, and since the hubs are hollow they do not stand ordinary use but will break away from the back. This is true of every book back which is formed by the compression of the dampened binder's board between dies.

A book back is as strong as its weakest point, and if the main body of the back is sufficiently thick and strong then there should be no other portion thinner and weaker than such main body, and all book binders realize this and have aimed to make their book backs as near as possible to this standard, and although it has been essayed to arrive at this result by making the backs and hubs from a solid piece of wood, such a

back has proved a failure because both the back and hubs would warp and crack owing to the moisture in the atmosphere, while constant usage would split the hubs completely away from the backs. My improvement overcomes all these defects and provides a book back which is lighter, stiffer and stronger than a compressed back, and there is no portion of my improved back which is thinner or weaker than the main body portion. Moreover, my back, as it comes from the mold, is completely finished and ready for attachment to a book, and any desired color as is well known in the art may be obtained by simply coloring the pulp before the molding operation. Furthermore, the use of this improved back permits much more machine work on or in connection with the book, of which said back forms a part, to be done than can be done on or in connection with a book in which the old back is embodied, which is a great advantage because machine work is exact while hand work is not, and the former is much cheaper than the latter.

I attain the objects and secure the advantages above pointed out by the means illustrated in the accompanying drawings, in which—

Figure 1 is a rear elevation of a book back embodying my invention; Fig. 2, a cross-section taken on line 2—2, in Fig. 1, looking down; Fig. 3, a similar section on lines 3—3, Fig. 1, looking down; Fig. 4, an inside view of said back; Fig. 5, a rear elevation of a back having different styles of hubs from the style of the hubs shown in the preceding views, and, Fig. 6, a central, longitudinal section through Fig. 5.

Similar figures refer to similar parts throughout the several views.

Referring to the drawings, it will be observed that the back consists of a main portion or strip 10, concavo-convex in cross section, a plurality of properly spaced integral hubs 11 on the outside between the ends of such strip, and an inwardly projecting integral head 12 at each end of the strip. These parts, as above stated, are all formed together at one molding operation out of the same mass of pulp, so that exact uniformity is always present and the structure is homogeneous throughout. Particular attention is called to the fact that no part of this molded back is thinner or weaker than the main body portion 10, and therefore said back possesses in a marked degree all the necessary qualifications and character-

istics required in a back for the best grade of ledgers and other blank books, heavy printed books and the like.

The style of the hub may vary to meet different requirements of taste and utility and I therefore do not wish to be restricted in this particular.

While I prefer to mold the heads integral with the backs, nevertheless the backs themselves are so stiff and strong that I contemplate forming them without these heads in some instances, and therefore I do not wish to be limited to the provision of these heads as an integral part of the back. Also, in the instance of book backs without hubs, the backs and heads are molded integrally, and accordingly I do not wish to be limited to the provision of hubs as a part of my improved article.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a new article of manufacture, a molded pulp book back consisting of a main body portion, concavo-convex in cross section having spaced hubs integral with said main body portion on the convex side thereof, said main body portion being of uniform thickness throughout its length.

2. As an improved article of manufacture, a molded pulp book back, consisting of a main body portion concavo-convex in cross section, spaced hubs projecting from the convex surface of said body portion, and heads at the extremities of the concave surface of said body portion, said hubs and heads being integral with said main body portion.

3. As an improved article of manufacture, a molded pulp book back consisting of a main body portion, concavo-convex in cross section, and heads integral with said body portion at the extremities of the concave surface of the latter.

4. As an improved article of manufacture, a molded pulp book back consisting of a main body portion, concavo-convex in cross section, and spaced hubs projecting from and integral with the convex surface of said portion, the concave surface of said main body portion being perfectly plain and unbroken, whereby there are no portions of the back that are thinner than said main body portion.

THOMAS E. LAYTON.

Witnesses:

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