

(No Model.)

J. P. BRENNAN.
BOOKBINDING.

No. 493,396.

Patented Mar. 14, 1893.

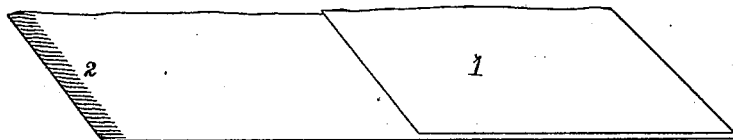


Fig. 1.

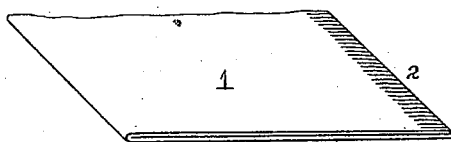


Fig. 2.

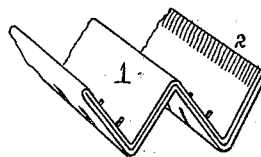


Fig. 3.

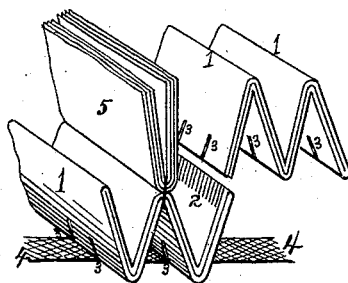


Fig. 4.

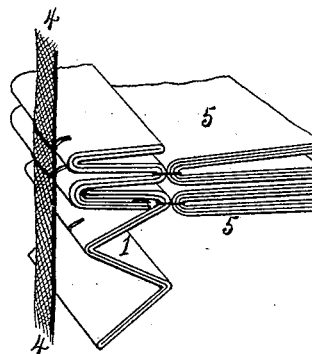


Fig. 5.

Witnesses
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UNITED STATES PATENT OFFICE.

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BOOKBINDING.

SPECIFICATION forming part of Letters Patent No. 493,396, dated March 14, 1893.

Application filed May 7, 1892. Serial No. 432,198. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN P. BRENNAN, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented a certain new and useful Improvement in Bookbinding, of which the following is a specification.

My invention has relation to improvements in books and binding in that class of books of unusual weight used for accounts and records, in which the sections of leaves or signatures are attached to stubs bound in the book back forming a hinge which permits the opposite leaves to lie flat wherever the book is opened.

The object of my invention is primarily to produce, as an improved article of manufacture, improved stubs for the class of books designated, and secondarily, with such improved stubs and the manner of constructing and uniting them together and connecting them with the binding bands and signatures to construct a book of great strength, wherein the leaves will not sag, which shall lie flat wherever opened; present no projecting edge between the opened leaves, and which shall combine the advantage of a continuous stub, with the facility of construction of separate stubs.

To the aforesaid objects my invention consists in the peculiar and novel construction, arrangement and combination of parts hereinafter described and then specifically pointed out in the claims, reference being had to the accompanying drawings forming a part of this specification.

In the accompanying drawings which illustrate successive steps in the construction of the stub and its attachment to other parts, and in which similar reference numerals indicate like parts in the different figures: Figure 1, is a portion of the stub folded once; Fig. 2, the same twice folded; Fig. 3, the same folded into a **W**, and sawed ready for use; Fig. 4, the same attached to the binding band and signature, and a second stub in position to be added; and Fig. 5, two stubs united and attached to the binding band and signatures.

The stub 1, is made preferably of a strip of fine, tough paper folded in three equal parts in the same direction from the ends inward,

the overlying ply being coated on each side of its edge with narrow stripes 2, of adhesive material, as mucilage or glue, which attaches that edge to the intermediate ply, leaving the adhesive material on its opposite face to dry, and for a purpose to be stated. This three-ply strip is then folded in the center in one direction, and between the center and ends in the opposite direction, forming in cross section a letter **W**, with the exposed stripe 2, of adhesive material, on the inside of one of the arms, as shown in Fig. 3. In one-half the stubs for the determined book, cuts 3, are sawed in the two folds corresponding to the bottom of the **W**, as shown in Fig. 3, and in the other half corresponding cuts in the opposite fold and two edges as shown in the detached inverted stub in Fig. 4.

In building up the book, a single stub 1, having the saw cuts in the two folds corresponding to the bottom of the **W**, is placed with those folds upon the binding band 4, and the first fold sewed thereto in the usual manner of attaching signatures to binding bands; and to the central upper fold is stitched a section of the leaves, or signatures, 5, as shown in Fig. 4. One of the stubs containing saw cuts in the opposite edges is then inverted, the adhesive stripe on the free end of the first stub moistened and one edge of the inverted stub placed and pressed against it. The second fold of the first stub is then pressed against the first fold and sewed to the binding band 4, and a second signature 5, sewed to the first outer fold of the second stub, as shown in Fig. 5. The adhesive stripe on the free end of the second stub is then moistened, and the one side of a third stub turned and cut like the first, inserted under and pressed against it, and the center fold of the second stub drawn up and sewed to the binding band, and a third signature sewed to the second fold of the second stub. This process is repeated, each alternate stub being inverted and interlocked with and fastened by adhesive material to the free side of the last stub, and signatures attached to the successive front folds of the stubs until the required number of pages is secured. By this method of construction the stubs are attached to the binding bands and signatures with the same fa-

cility as other single stubs, while by being interlocked and fastened by adhesive material they have all the firmness and strength of stubs of a continuous strip of material; 5 and it will be noticed that no projecting edge of any unattached stub is seen between the signatures when the book is opened. As the leaves after being frequently opened never lie as closely as when the book is first completed, I preferably so arrange the number of 10 leaves of each signature relatively to the number of plies of its respective stub, that the latter shall slightly exceed the former, as for example in the illustrations given, four leaves 15 are folded to constitute the signature of eight leaves, while each stub except the first contains nine plies, and the first stub with the free end next the cover has the same number, which maintains the book of even thickness after long use. 20

I claim as my invention—

1. As an improved article of manufacture a stub for a flat-opening book consisting of a strip of material folded in a number of plies, 25 the last ply attached to the others by adhesive material, folded into **W** form and having adhesive material on the inner edge of one of the outer folds, as set forth.

2. As an improved article of manufacture 30 a stub for a flat-opening book consisting of a strip of material folded to form three equal

plies, the last folded ply provided on each face of its edge with adhesive material, and the plies formed into a **W**, as set forth.

3. As an improved article of manufacture, 35 a set of stubs for a flat-opening book, each stub consisting of a strip of material folded to form three equal plies, folded in **W** form, the inner edge of one of the outer folds having a coating of soluble adhesive material, 40 each alternate stub inverted, and all having saw notches in one direction for attaching the signatures, as set forth.

4. A book having independent sections and stubs, the stubs being in form of a letter **W**, 45 each alternate stub inverted and interlocked with and attached to adjacent stubs by adhesive material as set forth.

5. A book composed of independent stubs in form of the letter **W**, each alternate stub 50 inverted and interlocked with and attached to adjacent stubs by adhesive material, and independent signatures attached to the front folds of said stubs and binding bands to the back folds as set forth. 55

In testimony that I claim the above I hereunto set my hand.

JOHN P. BRENNAN.

In presence of—

C. P. HUMPHREY,

C. E. HUMPHREY.