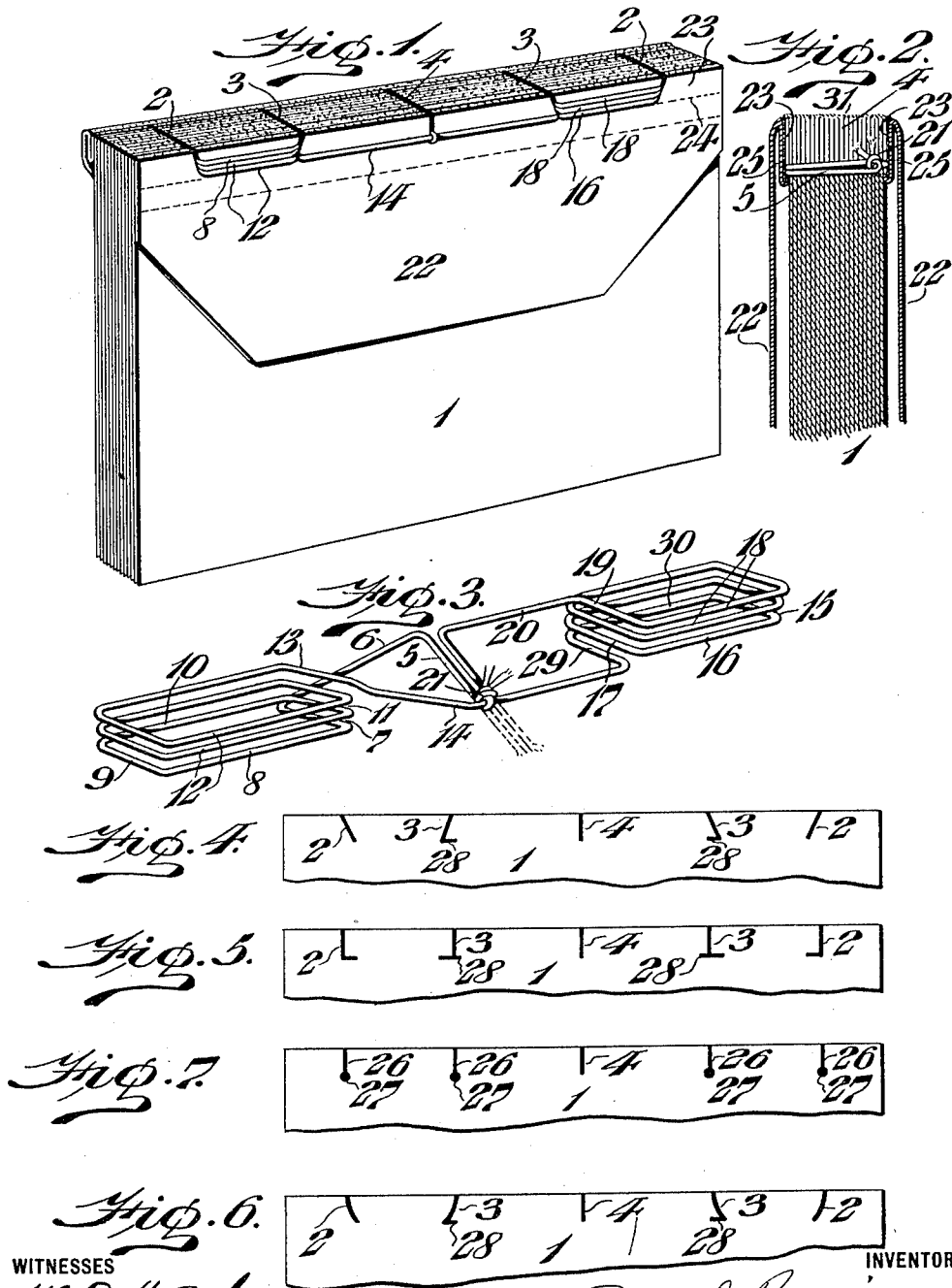


P. J. RENNINGER.
BOOKBINDING.
APPLICATION FILED NOV. 1, 1912.

1,061,779.

Patented May 13, 1913.



WITNESSES
H. G. Dieterich
R. F. Nagle

BY

INVENTOR
Paul J. Renninger
Niedersheim & Fairbanks
ATTORNEYS

UNITED STATES PATENT OFFICE.

PAUL J. RENNINGER, OF READING, PENNSYLVANIA.

BOOKBINDING.

1,061,779.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed November 1, 1912. Serial No. 729,021.

To all whom it may concern:

Be it known that I, PAUL J. RENNINGER, a citizen of the United States, residing in the city of Reading and county of Berks, State of Pennsylvania, have invented a new and useful Bookbinding, of which the following is a specification.

My invention consists of an improvement upon the fastening for the signatures of books, pamphlets and the like, for which Letters Patent, No. 998,303, were granted to me on July 18, 1911.

It further consists of improved reinforcing means for the cut edges of the signatures.

It further consists of improved attaching means for attaching the assembled signatures to the boards of the cover whereby the signatures are confined by the stitching twine to be held, as in a vise, between such attaching means.

It further consists of other novel features of construction, all as will be hereinafter fully set forth.

The annexed drawings and the following description set forth in detail one mechanical form embodying the invention, such detail construction being but one of various mechanical forms in which the principle of the invention may be used.

In said annexed drawings—Figure 1 represents a perspective view of the signatures or folded sheets composing a book and joined or connected according to my invention. Fig. 2 represents a transverse section of such connected signatures with the reinforcing strips glued down and ready to be placed between the covers. Fig. 3 represents a perspective view of the loops of twine as they would appear when removed from the folded and joined signatures. Figs. 4, 5, 6 and 7 represent side-views of signatures having different forms of kerfs embodying my invention.

Similar numerals of reference indicate corresponding parts in the figures.

Referring to the drawings, the reference numeral 1 designates the sheets or leaves of the signatures which go to make up a book. The edges of the assembled signatures are formed with inwardly slanting cuts or kerfs, 2—2, near their ends, and with outwardly slanting intermediate cuts or kerfs, 3—3, at convenient distances inward from said outer cuts or kerfs. A straight cut or kerf 4 is formed at or about the middle of the edges of the signatures. The inner ends of the in-

termediate kerfs 3 have short, inwardly-pointing notches, 28, the purpose of which will later appear. Bookbinders' twine or other appropriate thread or twine is drawn into the middle kerf, as at 5, is thereupon carried along one side of the signatures, as at 6, and drawn through one of the intermediate kerfs, as at 7. The twine is now carried along the opposite side of the signatures to the adjacent outer kerf, as at 8, and drawn through the same, as at 9, and then carried back to the intermediate kerf, as at 10, and again drawn through said kerf, as at 11, whereupon the twine is wound tightly in one or more additional loops, 12, around the portion of the signatures between the intermediate and outer kerf. The last portion, 13, of such wound loops passes through the intermediate kerf and is carried along the side of the signatures to the intermediate kerf on the opposite side of the middle kerf, as at 14, whereupon it is drawn through said kerf, as at 29, and carried, as at 30, to the adjoining end-kerf, and through the same, as at 15, carried back to the intermediate kerf, as at 16, drawn through said kerf, as at 17, and tightly wound around the portion between the two kerfs in one or more loops, 18, and the last portion, 19, of such loops is drawn through the intermediate kerf, carried along the side of the signatures, as at 20, and drawn through the central kerf, whereupon one of the ends of the twine is carried around the portion 14, and the ends are tied in a knot, 21, and the loose ends of such knot doubled back into said kerf. The twine is tightly drawn to closely confine the signatures and to cause the portions in the intermediate kerfs to enter the notches. The inwardly pointing notches 28 at the inner ends of the intermediate kerfs serve to receive those portions of the twine in such kerfs which extend toward or from the middle of the signatures, to prevent strain upon such portions from drawing the portions in the kerfs out of the same along their inclines.

Pieces or wide strips, 22, of bookbinders' muslin, cloth or similar strong textile material are preferably glued or pasted to the outer sheets of the signatures, along the folded edges of the latter, before the backs of the signatures are cut, and said side pieces or reinforcing pieces are preferably glued to said signatures for a space or strip, 23, of a width equal to the depth of the kerfs. Said reinforcing pieces are folded along lines, 24,

bordering the glued strips, back upon themselves, after the kerfs have been cut and the signatures stitched, and cemented to the strips 23 by means of glue, paste or other adhesive, such cemented strips, 25, covering the stitches, whereupon the reinforcing pieces are again folded back upon themselves. The boards of the binding of the book are secured to the free portions of the reinforcing pieces, forming a strong hinge-support for the same, which will admit of said boards being freely folded back; the reinforcing pieces hold the signatures, after the stitches or loops have been formed and tightly drawn, as between the jaws of a vise.

In Fig. 4 of the drawings, the kerfs are disclosed as straight-lined and the end-kerfs and intermediate kerfs as inclined toward each other. In Fig. 5 of the drawings, the end-kerfs and intermediate kerfs are illustrated as L-shaped, with the feet of the Ls pointing toward each other. In Fig. 6 of the drawings, the end-kerfs and intermediate kerfs are illustrated as curved. In all of these forms, the inner ends of the intermediate kerfs are shown as formed with the notches 28 pointing toward the middle of the signature. In Fig. 7, the signatures are illustrated as formed with kerfs, 26, at right angles to the edges of the signatures having enlarged inner ends, 27. In all forms, the tying or stitching is performed in the manner described.

After the cutting and stitching of the signatures is finished, a coating, 31, of glue or similar cement is worked into the back of the book, especially into the kerfs where such cement secures the twine.

Other modes of applying the principle of my invention may be employed for the mode herein explained. Change may therefore be made as regards the structure thus disclosed, provided the principles of construction set forth, respectively, in the following claims are employed.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A book consisting of a plurality of signatures having at the middle of their edges a straight kerf, outwardly-slanting intermediate kerfs at opposite sides of the middle kerf and formed at their inner ends with inwardly-pointing notches, and inwardly slanting end-kerfs, and a twine having its ends carried through the straight kerf and carried around the signatures and

through the oblique kerfs and seated in said notches and united.

2. A book consisting of a plurality of signatures having in their edges a straight kerf and a pair of slantingly converging kerfs on each side of said straight kerf, the intermediate slanting kerfs having at their inner ends inwardly pointing notches, and twine looped through said pairs of oblique kerfs and seated in said notches and through the straight kerf, embracing the sides of the signatures, the ends of the twine being united within said straight kerf.

3. A book consisting of a plurality of signatures having kerfs in their edges, reinforcing pieces of fabric on opposite sides of said signatures having corresponding kerfs, and a twine looped through said kerfs and embracing the sides of the signatures and reinforcing pieces, said reinforcing pieces being cemented to the sides of the signatures for the width of the depth of the kerfs and being folded back upon themselves and cemented.

4. A book consisting of a plurality of signatures having kerfs in their edges, reinforcing pieces of fabric on opposite sides of said signatures having corresponding kerfs, and a twine looped through said kerfs and embracing the sides of the signatures and reinforcing pieces, said reinforcing pieces being cemented to the sides of the signatures near their edges, folded back upon themselves, and again cemented.

5. A book consisting of a plurality of signatures, reinforcing pieces of fabric cemented at their back-edges to the opposite sides of the assembled signatures, and twine securing the back-portions of said signatures and reinforcing pieces together, said reinforcing pieces being folded back upon themselves and cemented to cover such twine.

6. A book consisting of a plurality of signatures having at the middle of their edges a straight kerf, intermediate kerfs at opposite sides of the middle kerf and end kerfs, said intermediate kerfs having notches extending inwardly therefrom, and a twine carried through the straight kerf around the signatures and through the intermediate and end kerfs and seated in said notches, and united.

PAUL J. RENNINGER.

Witnesses:

WM. LESHER,
C. D. McVAY.