

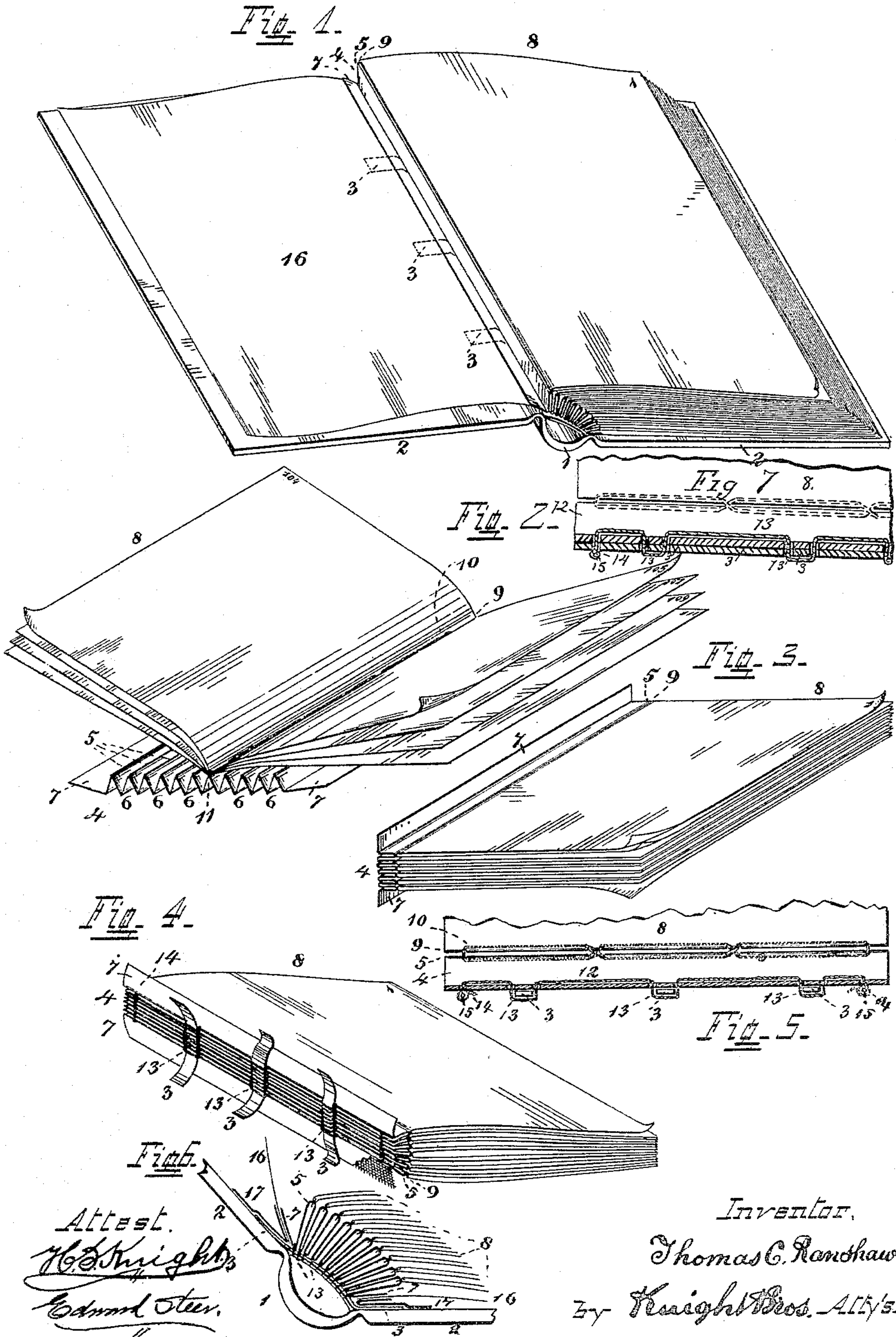
(Model.)

T. C. RANSHAW.

BOOK.

No. 387,917.

Patented Aug. 14, 1888.



UNITED STATES PATENT OFFICE.

THOMAS C. RANSHAW, OF CINCINNATI, OHIO, ASSIGNOR TO CARPENTER
& RANSHAW, OF SAME PLACE.

BOOK.

SPECIFICATION forming part of Letters Patent No. 387,917, dated August 14, 1888.

Application filed August 20, 1886. Serial No. 211,405. (Model.)

To all whom it may concern:

Be it known that I, THOMAS C. RANSHAW, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Books, of which the following is a specification.

My invention relates to that class of books whose folios, leaf-groups, or "signatures," instead of being attached direct to the back-lining or to the bridge-strips, are attached to a stub or stub-strip, which in turn is attached to such bridge-strips, so as to afford to each leaf-group two hinge-like or flexible attachments whose object is to allow the book to lie perfectly flat wherever opened, said bridge-strips being in turn secured to the cover of the book.

In my invention I employ, instead of a series of separately-manufactured stubs, a stub-strip composed of a single continuous sheet of canvas or like tough, yet flexible, material, which (except portions at its extreme ends, which are left for attachment to the cover) is crimped alternately in opposite directions at uniform distances throughout its length, so as to produce by purely mechanical means and with the greatest expedition and accuracy a single stub-strip of the zigzag form herein represented. The stub-strip thus manufactured has its respective edges secured to the bridge-strips (which in turn are secured to the cover-leaves) and to a signature. The means for thus attaching the several parts are immaterial so far as my present invention is concerned, which relates more particularly to points of attachment, the object being to produce a durable book at a reasonable cost which shall be possessed of the greatest flexibility. To this end the zigzag stub strip is secured to the bridge strips by stitches or other means, passing not through the parallel folds of said strips, but through the bent or curved portions which form or constitute those edges or extremities of the said folds which are presented in one direction, (*i. e.*, toward the back of the book when constructed,) the signatures or leaf-groups being in like manner attached to the bent or curved portions which form or constitute those edges or extremities of the folds which are presented in the opposite direction.

The said bridge-strips are made long enough to enable their customary attachment (by pasting) to the cover-leaves, to which also are similarly attached wings or extensions of the stub-strip itself that project beyond its outermost stitched folds. This attachment of the stub-strip may be made either directly to the cover or through interposed fly-leaf and gusset, in the manner hereinafter explained.

In the accompanying drawings, Figure 1 represents a book embodying my invention. Fig. 2 represents a signature or leaf-group flexibly attached (by stitching its back fold) to the bend or grooved portion which forms or constitutes the forward extremities of two of the folds of my stub-strip. Fig. 3 represents several leaves so attached. Fig. 4 shows the rear extremities of a number of stubs constructed of one of my stub-strips tacked together, and customary strips, technically known as "bridge-strips," inserted within the stitch-loops. Fig. 5 is a section through the bent or curved portion which forms or constitutes the rear extremities of two of the folds of the stub-strip, taken after completion of the work to the stage shown in Fig. 4. Fig. 6 is a section taken at right angles to the stub-folds, showing the relation and attachments of the parts in the completed book. Fig. 7 is a section similar to Fig. 5, showing the rear extremities of the folds of the stub-strips stitched to a strip forming the back-lining instead of to the bridge-strips.

1 may represent the back proper, and 2 the cover-leaves of the back.

3 represents customary strips of parchment, canvas, or other strong yet flexible material, technically known as "bridge-strips."

Instead of the customary separately hand-made and hand-pasted stubs, I provide a rectangular sheet, preferably composed of two-ply material, such as muslin and manila paper pasted together. This sheet is, except at its extreme ends, crimped or folded alternately in opposite directions at uniform distances throughout its length, so as to produce a stub-strip, 4, of the represented zigzag form, having the two wings or flies 7.

8 is one of a number of book-sections or leaf-groups, technically known as "signa-

tures," the same being folded in the accustomed manner at 9.

Stitching 10 through the signature at its fold 9 serves to attach it, as by a kind of hinge or flexible joint, 11, to the front extremity of its appropriate fold of the stub-strip.

So far as my present invention is concerned it is immaterial what means are employed for attaching the several parts together, the said invention having relation more particularly to the points of attachment, the object being to produce at a minimum cost a book having the greatest possible flexibility and durability. To this end the signatures are attached, not to the parallel portions or folds of the stub-strips, but to the bent or curved portions 5, which form or constitute the forward extremities or edges of said folds, while the stub-strip itself is not constructed of numerous pasted fragments, but consists of a single crimped sheet. In like manner the stub-strip is secured to the bridge-strips 3 by stitches 12, which pass through the curved portions 6 of the stub-strips, which form or constitute the rear extremities or edges of the folds. Said stitches form loops through which pass the bridge-strips.

In order to secure the greatest amount of flexibility at this hinge-joint between the stub-strip and the bridge-strips, to which they are secured, it is essential that the stitches which secure them together should be situated at this point—that is, the bent, creased, or curved portions 6, which form or constitute the rear extremities of the several parallel folds.

The knotted extremities 14 of the stitching 12 being caught together by stitching 15, the rear extremities of the stub-crimps are thereby firmly knit together. The projecting portions 40 of the bridge-strips are glued or pasted in the customary manner to the cover, as shown in Fig. 6.

The wings 7 of the stub-strip may also be pasted directly to the cover and over said bridge-strips, but said wings are preferably pasted to fly-leaves 16, which in turn are secured to the cover and the previously-attached bridge-strips by means of pasted gussets 17. Instead of one fly-leaf and gusset at each end of the book, several of such leaves and gussets may be employed.

I have described my invention in connection with a "stub-strip," technically so called, but desire to have it understood that I do not regard it as limited thereto. As heretofore suggested, the rear extremities of the folds of the stub-strip may be stitched to the "back-lining," which differs from the bridge-strips in that instead of being very narrow, necessitating the use of quite a number, it is very wide, extending from one end of the back to the other, as shown in Fig. 7.

It is well known that in practice this strip forming the back-lining is secured at its edges to the cover-leaves of the book, and is either free from or united to the back 1 between its extremities. When a stiff back is employed,

it is united thereto at a point intermediate of its edges; but when the back is flexible the entire surface of the back-lining is or may be secured thereto by pasting or otherwise. These remarks apply equally to bridge-strips, so that, as a matter of fact, the back-lining and bridge-strips differ only in shape and not in function; therefore I desire to have it understood that in this specification the expression of one includes the other.

I am aware that it has been proposed to construct newspaper-files of two cover-leaves, to which are secured the respective ends of a strip of leather or other flexible material crimped or folded alternately in opposite directions, each of the bent or curved portions which form or constitute those extremities of the parallel folds being provided with a number of loose cords extending nearly its entire length, and designed to be placed between the leaves of the paper to be filed for the purpose of holding it, while those extremities of the folds which are presented in the opposite direction (or toward the back of the book) are not in any manner secured to anything. This is not the equivalent of my invention, which consists, essentially, in a continuous stub-strip crimped or folded alternately in opposite directions, each one of all the bent, curved, or creased portions which form or constitute those extremities of the folds which are presented in one direction being secured to a bridge strip or strips which in turn is or are secured to the cover-leaves of the book, while the leaves are secured to the bent, curved, or creased portions which form or constitute those extremities of the stub-strip which are presented in the opposite direction.

Perfectly flat "lay" of the exposed pages, at whatever part the book may be opened, is secured by the described doubly-flexible attachment of its leaves.

I am also aware that it has been proposed to secure one leaf of an album to the forward extremity of each of a number of stubs formed by creasing or bending the strip in a manner similar to that employed by me, the rear extremities of said folds being left entirely free, save the restraint put upon them by a single cord passed through a perforation formed through each of the several folds, layers, or laps of the strip.

I claim as my invention—

1. A book having two or more folios or signatures, a continuous stub-strip crimped or folded alternately in opposite directions, and a strip to which each of the bent, curved, or creased portions which form the rear extremities of the stub or stub-strip is secured, the front crimps being left free, the signatures or folios of the book being separately secured to the several bent, curved, or creased portions which form the front extremities of the folds of the stub or stub-strip, the strip to which the rear extremities of the said folds are secured being in turn secured to the cover-leaves of the book, substantially as described.

2. In a book, the combination of the following elements, to wit: two or more folios or leaf-groups, 8, a strip, 4, crimped or folded alternately in opposite directions, so as to form a
5 stub-strip, to the front extremities of which—that is, the bent, curved or creased portions 5, which form or constitute the front edges or extremities of the several folds—are severally secured the said folios or signatures, the bridge-
10 strips 3, to which the rear extremities of said stub-strip—that is, the bent, curved, or creased portions 6, which form or constitute the rear edges or extremities of the several folds—are secured, and the wing 7 of the stub-strip se-
15 cured to the cover, substantially as set forth.

3. A book having two or more folios, signatures, or leaf-groups, a continuous stub-strip crimped alternately in opposite directions, and a bridge-piece to which all of the crimped edges at the rear of the stub-strip are secured, 20 the front crimps being perfectly free and each leaf-group being attached to a separate front crimp, substantially as set forth.

In testimony of which invention I hereunto set my hand.

THOMAS C. RANSHAW.

Attest:

GEO. H. KNIGHT,
RANKIN D. JONES.