H. R. HEYL.

SEWING BOOKS.

No. 180,765. Patented Aug. 8, 1876.

FIG. 1.

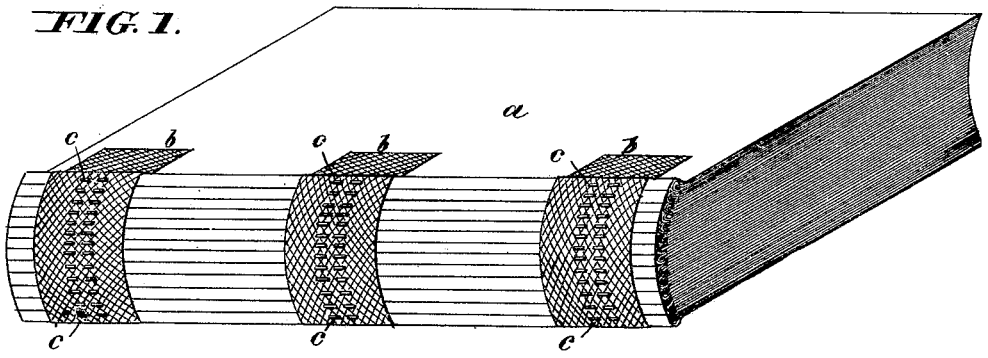


FIG. 2.

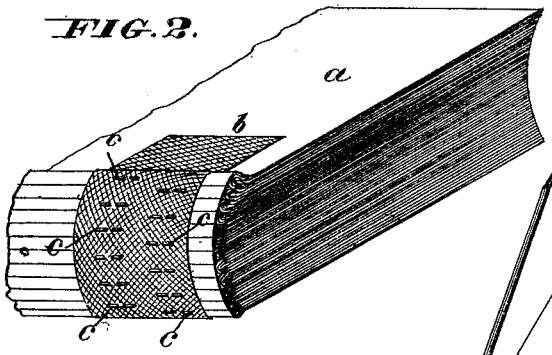


FIG. 3.

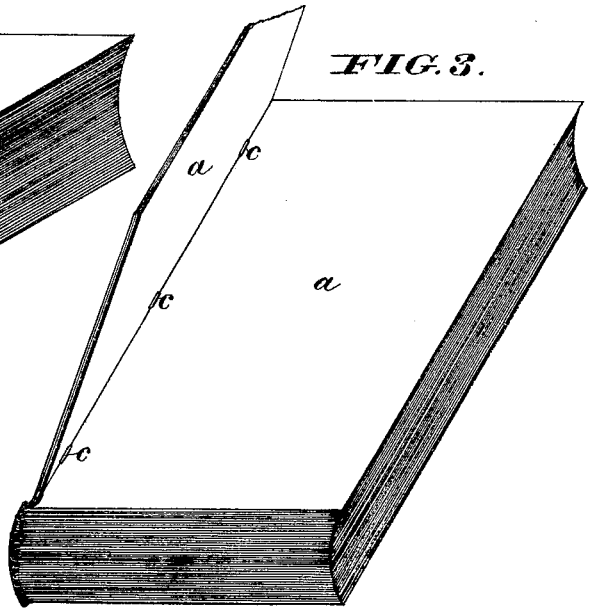
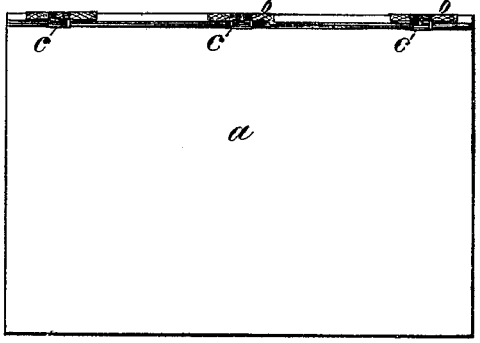


FIG. 4.



WITNESSES

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IMPROVEMENT IN SEWING BOOKS.

Specification forming part of Letters Patent No. **180,765**, dated August 8, 1876; application filed October 14, 1875.

To all whom it may concern:

Be it known that I, HENRY R. HEYL, of the city and county of Philadelphia, in the State of Pennsylvania, have invented an Improvement in Sewing Books, of which the following is a specification:

My invention consists in the employment of metallic staples, peculiarly applied, in combination with tapes or flexible bands, to secure in book form any number of separate sheets.

In the accompanying drawings, Figure 1 is a rear perspective view of a portion of a book sewed by my method in preparation for binding. Fig. 2 is a rear perspective view of a portion of a book, illustrating a modification of the mode of applying the invention. Fig. 3 is a front perspective view, showing a sheet open and exhibiting the backs of the staples, which are inserted from the inside. Fig. 4 is a longitudinal section on the plane indicated by the lines 4 4, taken through the center of a signature.

I employ the flexible bands *b*, placed across the back of the book in the usual form, and for the usual purpose of furnishing a common hinge, to which all the sheets *a* are sewed; but, instead of using thread to sew the sheets thereto, I employ metallic staples *c*, driven through the fold of each sheet *a*, preferably from the inside, as shown in Fig. 3, and through the tapes *b* at the back of the fold, and then firmly unite the sheets thereto by clinching the staple-prongs down upon the tapes. I insert as many staples *c* through each sheet or signature as there are tapes *b* across their folds, so that, when three tapes are used, each sheet is secured to them by three staples entirely independent of each other. Thus sheet after sheet is laid in position and united to the tapes until the book is complete.

When a book contains a great many sheets, so that the rows of staples that lie over each other (see Fig. 1) would naturally increase the bulk or thickness of the back of the book too much, I employ wider tapes and alternate positions of the staples, so that they form two or more rows, and thus avoid excessive thickness, as shown in Fig. 2.

The advantages of my improved method of sewing books are many. It enables the work to be done by simple machinery, already in its essential principles completed, and much more rapidly than the present mode of sewing with thread will admit of. Again, as each sheet is secured to each of the tapes by a separate staple, it follows that the breaking away of any staple does not impair the effectiveness of any of the others, which is not the case in thread-sewed books, for when the thread breaks at one point the several points of fastening for that sheet are all loosened, and frequently, as the same thread runs through several contiguous sheets, they all become loose from the one breakage, and fall out of the book.

Another advantage appears in the fact that the prevalent custom of sawing the backs of the sheets to form recesses for the binding-twine and holes for the passage of the thread in and out is entirely dispensed with, for the staples make their own way through the paper and tape as they are inserted, and form no large holes to weaken the paper. Again, my method, while being much cheaper, produces in perfection the most desirable form of binding—namely, one that permits the book to open wide and free without straining or weakening the sewing.

I am aware that it has before been proposed to connect the leaves of books or pamphlets by means of wire applied in various ways. My mode of combining with flexible tapes or bands independent wire staples, which connect the signatures to the said tapes or bands, possesses several important practical advantages when the staples are driven through the paper and tape from the inside outward, and have their points clinched over the tape in the manner I have described. The middle or head of the staple takes an effective hold of the paper, and the clinched points of the staple, which will not hold so securely and effectually in paper, will hold with perfect security and success in a woven fabric.

I thus accomplish a new and useful result by the combination of flexible tapes and independent wire staples, applied in the manner described; and herein consists an important element of value in my invention.

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

A book sewed with independent wire staples *c*, driven from the inside outward through the fold of the sheets or signatures *a*, and through flexible connecting-bands *b*, and clinched on the outside of said bands, all substantially as described.

HENRY R. HEYL.

Witnesses:
OCTAVIUS KNIGHT,
CHAS. J. GOOCH.