(No Model.)

H. L. ARNOLD.

METHOD OF BOOK STITCHING.

No. 402,218. Patented Apr. 30, 1889.

Fig. 1

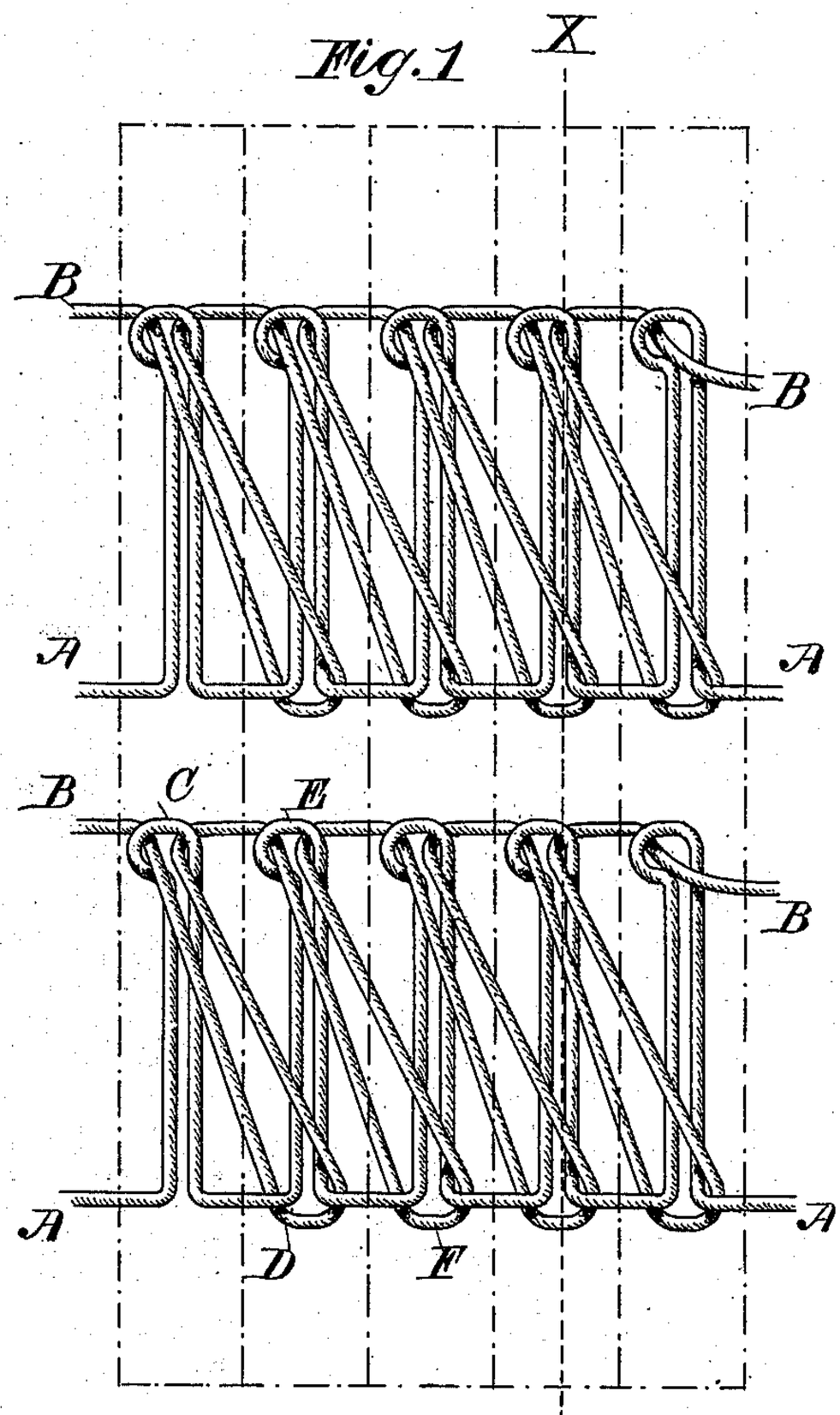


Fig. 2

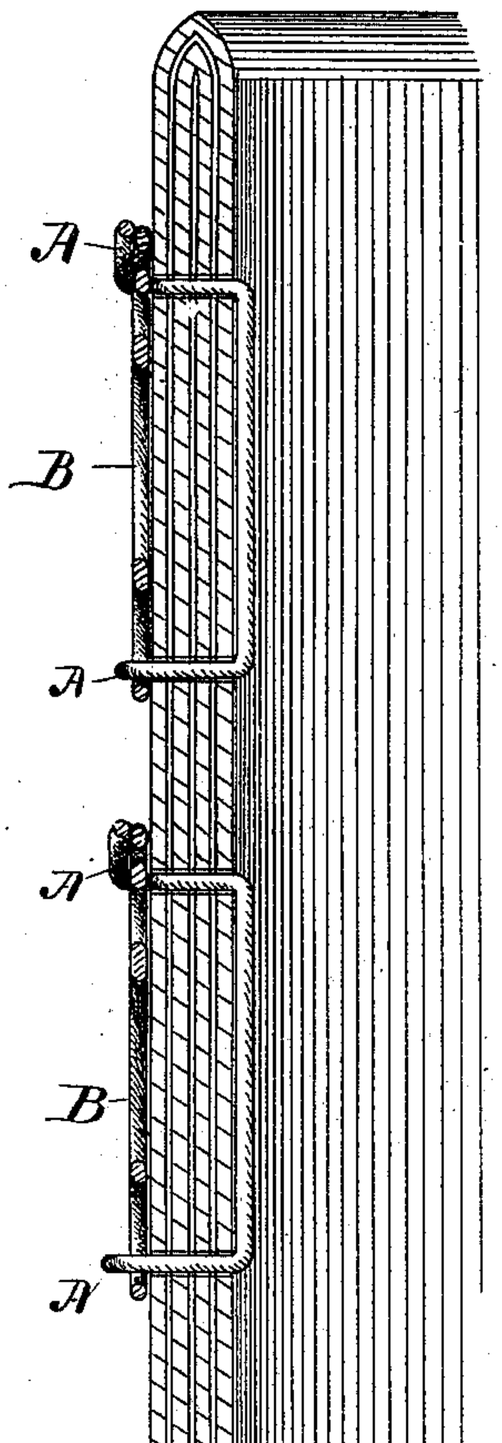
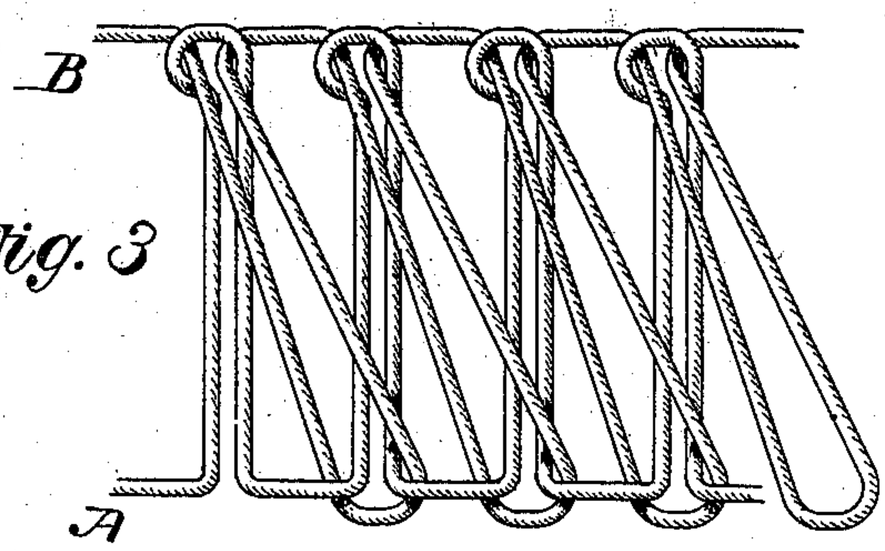


Fig. 3



Witnesses.

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UNITED STATES PATENT OFFICE.

HORACE L. ARNOLD, OF HARTFORD, CONNECTICUT, ASSIGNOR TO ROBERT S. WOODRUFF, TRUSTEE, OF TRENTON, NEW JERSEY.

METHOD OF BOOK-STITCHING.

SPECIFICATION forming part of Letters Patent No. 402,218, dated April 30, 1889.

Application filed September 1, 1886. Serial No. 212,362. (No model.)

To all whom it may concern:

Be it known that I, HORACE L. ARNOLD, of Hartford, Connecticut, have invented an Improvement in the Art of Book-Stitching, of which the following description and claim constitute the specification, and which is illustrated in the accompanying sheet of drawings.

This invention consists of a new method or process of stitching together the leaves of a book.

Figure 1 is an enlarged view of two pairs of threads, each pair of which is combined in my present method with five signatures of book-leaves held together by those threads, the spaces between the broken lines being intended to represent cross-sections of those signatures just within their backs. Fig. 2 is a section through the back of each of the signatures on a line like that which, as to one of them, is indicated by the dotted line X X of Fig. 1. Fig. 3 is a fragmentary view of one pair of threads as combined in my present method, but separate from the signatures.

A is the inside thread, and B is the outside thread, of each pair of threads used in my present method to unite the several signatures of a book.

The method of stitching is as follows, holes being first preferably punched or cut through the backs of the signatures of leaves wherever thread is to be passed through them: The thread A is brought from the left of Fig. 1, and is carried through the back of the first signature, from the outside thereof, at the lower hole therein, in such a manner as to form the loop C. That loop is then carried upward along the inner crease of the signature till the next hole is reached, when it is brought through that hole to the back of the signature. Then the thread B is brought from the left of Fig. 1 and carried through the end of the loop C in such a manner as to form the loop D and to bring that loop in a diagonal direction on the outside of the backs of the first and second signatures till its end is over the lower hole in the second signature, in the position shown in Fig. 1. Then another portion of the thread A is brought from the left, and is carried through the end of the loop D and through the back of the second signature, from the outside thereof, at the lower hole therein, in such a manner as to form the loop E. That loop is then carried upward along the inner crease of the second signature till the next hole is reached, when it is brought through that hole to the back of that signature. Then another portion of the thread B is brought from the left and is carried through the end of the loop E in such a manner as to form the loop F, and to bring that loop in a diagonal direction on the outside of the backs of the second and third signatures till its end is over the lower hole in the third signature, in the position shown in Fig. 1. Thus the process continues till any desired number of signatures of leaves are united.

The upper pair of threads are managed precisely like the lower pair and simultaneously therewith, and any desired number of such pairs of threads may be simultaneously stitched in the same manner across different portions of the back of a series of signatures of leaves.

A parchment strip may be fastened to the backs of the signatures, if desired, by being inclosed under the diagonal reaches of the thread B and between the outward-projecting ends of the two series of loops; or the two threads may be positively prevented from tearing through the edges of the holes in the backs of the signatures by means of two cross-threads, like the thread E, shown in Figs. 1 and 2 of my application, Serial No. 206,400, filed June 28, 1886, for a patent for another improvement in the art of book-stitching; but I do not consider either of those expedients necessary to the utility of this invention.

In order to plainly indicate the courses of the threads, less tension is indicated in the drawings than is proper in actual practice of the invention, and in actual practice that tension may be regulated to the requirements of particular cases.

This invention may be performed and made by hand, and I hope hereafter to perfect a machine for more rapidly performing the described process and more cheaply producing the described result.

I claim as my invention—

The method of stitching together a series of signatures, which consists in carrying a

loop of one thread through the back of one signature from the outside thereof, and then bringing it out through the same back at another place, and then carrying a loop of another thread through the end of the first loop, outside of the signature, and then carrying another loop of the first thread through the first loop of the second thread, and then through the back of another signature from the outside thereof, and then bringing it out through the same back at another place, and then carrying another loop of the second thread through the end of the second loop of the first thread, and then repeating the operation, if necessary, until all the signatures in the series are stitched together, all substantially as described.

Hartford, July 28, 1886.

HORACE L. ARNOLD.

Witnesses:

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