

(No Model.)

H. L. ARNOLD.
METHOD OF STITCHING BOOKS.

No. 401,674.

Patented Apr. 16, 1889.

Fig. 1

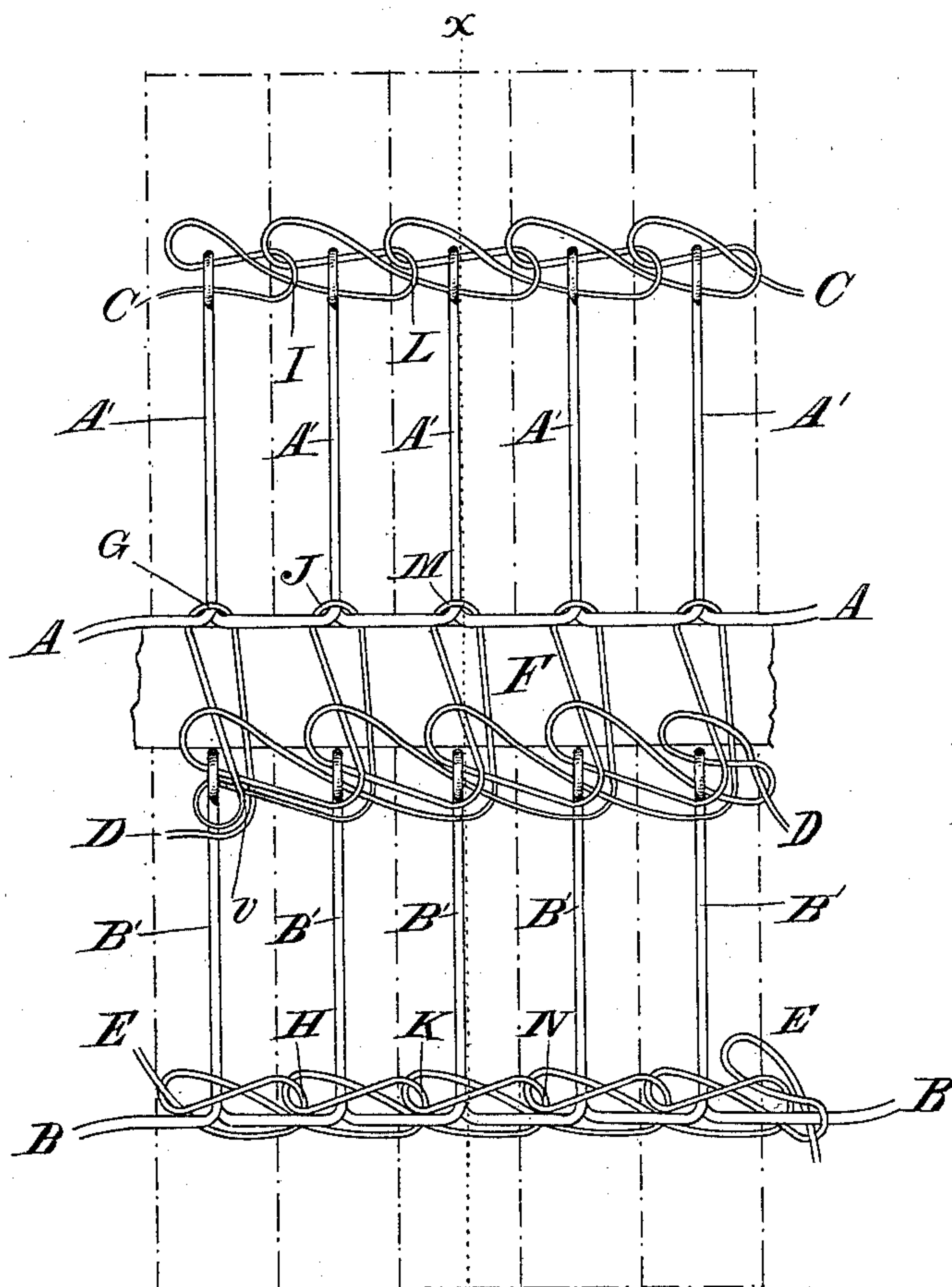


Fig. 2

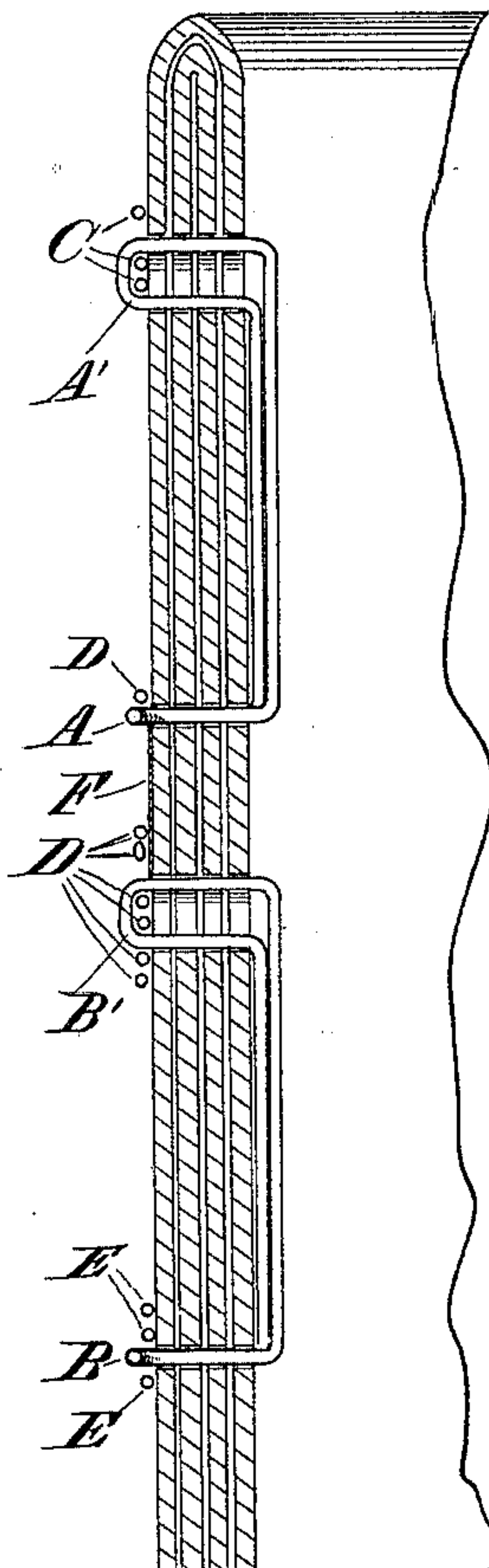
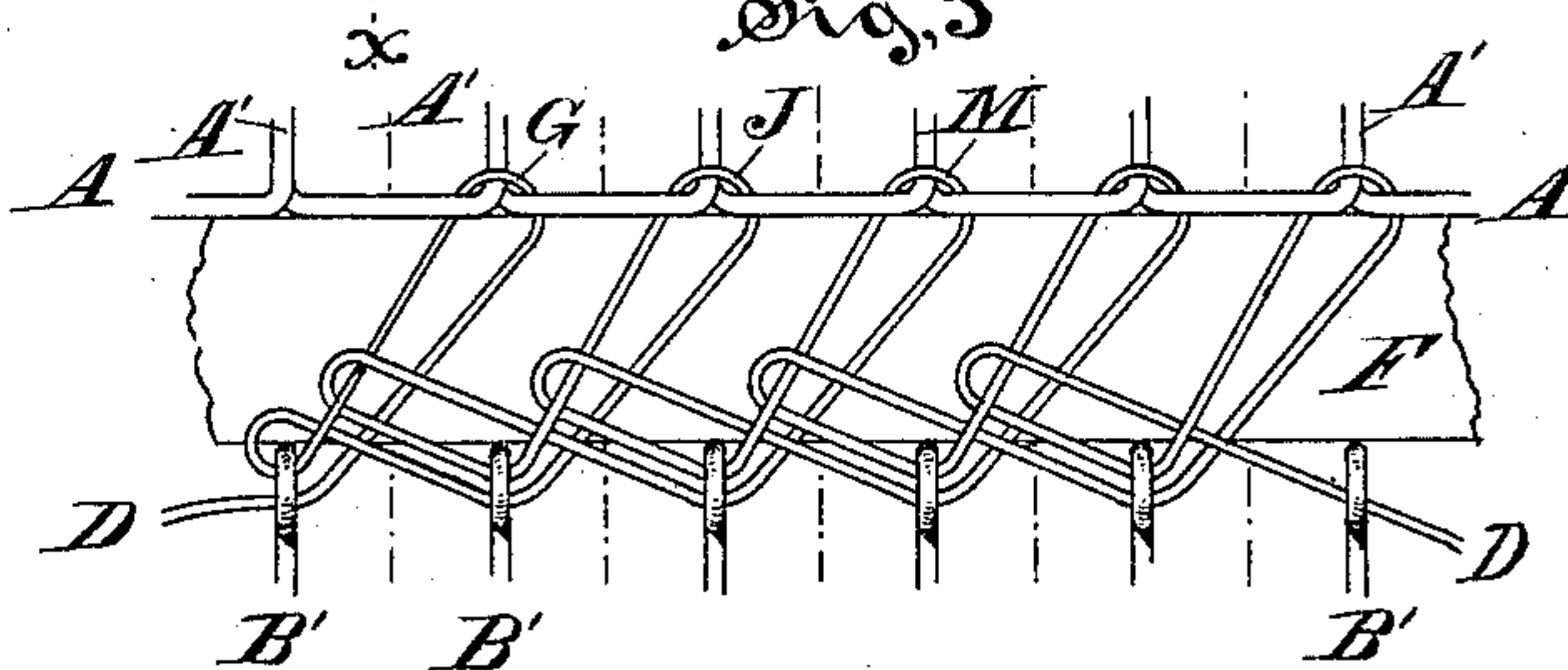


Fig. 3



Witnesses

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METHOD OF STITCHING BOOKS.

SPECIFICATION forming part of Letters Patent No. 401,674, dated April 16, 1889.

Application filed June 28, 1886. Serial No. 206,400. (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 by 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 several threads 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 $x x$ in Fig. 1. Fig. 3 is a fragmentary view of a modified form of arrangement of the loops in the middle of Fig. 1.

A and B are the inside threads, while C and D are the cross-threads combined in producing my present stitch, and in some cases I use, also, the additional cross-thread, E, and in some cases I insert the strip F, made of parchment or other suitable material, between the threads A and B and under the thread D.

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, a portion of the thread D is brought from the left, and is formed into the loop G, extending lengthwise of the first signatures on the outside of the back thereof, and a portion of the thread E is simultaneously brought from the same direction, and is formed into the loop H, extending crosswise of the back of the first signature. Then portions of the threads A and B are simultaneously brought from the same direction and carried through the loops G and H, respectively, and thence through the back of the first signature in such a manner as to form the first loops A' and B'. Those loops are then carried upward along the inner crease of the signature to the adjacent holes, when their ends are brought

through those holes, respectively, to the back of the signature. Then a portion of the thread C is brought from the left, so as to form the loop I and to carry it through the end of the first loop A', and a portion of the thread D is brought from the same direction, so as to form the loop J and carry it through the first loop B', and thence through the loop G, and thence laterally to the back of the second signature, and thence lengthwise of the back of that signature in the course shown in Fig. 1, and a portion of the thread E is brought from the same direction, and is taken through the loop H so as to form the loop K. Then portions of the threads A and B are simultaneously brought from the same direction and carried through the loops J and K, respectively, and thence through the back of the second signature in such a manner as to form the second loops A' and B', respectively. Those loops are then carried upward along the inner crease of the second signature to the adjacent holes, when their ends are brought through those holes, respectively, to the back of that signature. Then a portion of the thread C is brought from the left, so as to form the loop L and carry it through the loop I, and thence through the end of the second loop A', and a portion of the thread D is brought from the same direction, so as to form the loop M and carry it through the second loop B' and thence through the loop J, and thence laterally to the back of the third signature, and thence lengthwise of the back of that signature in the course shown in Fig. 1 and the thread E is brought from the same direction, and is taken through the loop K, so as to form the loop N. Thus the stitching is continued till any desired number of signatures have been stitched together, when the end of the threads C, D, and E are preferably brought forward and inserted through the last one of those threads, respectively. The modification of this method of stitching shown in Fig. 3 consists in making the first loops A' and B' before making the loop G and in passing the loop G through the first loop B', and thence diagonally across the line between the first signature and the second one to a point on the back of the latter, where its end is

afterward entered by the second loop A'; and also consists in not carrying the loop J through the first loop B', but in carrying it through the second loop B', and thence diagonally across the line between the second signature and the third one to a point on the back of the latter, where its end is afterward entered by the third loop A', and consists in carrying out the same modified plan with the subsequent loops of the thread D.

When the strip F is used, as it may well be on heavy books, it may be let into the backs of the signatures in the ordinary manner for such strips, and it will be held in place by the adjacent threads.

The thread E may be omitted; but I prefer to use it, because it positively prevents the adjacent parts of the loops B' from tearing through the backs of the signatures.

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. In some cases it may be desirable to put so much tension on the threads A and B as to draw the inclosed reaches of the threads C and D partly or entirely through the leaves of the signatures.

This invention may be performed and made by hand; but I have conceived and hope to perfect some machinery for more rapidly performing the described process and more cheaply producing the described product.

Much of the foregoing matter is set forth in another application of mine for Letters

Patent of the United States, executed and filed contemporaneously with this; but in order to secure an exclusive right to what is shown in this and not shown in that application,

I claim as my invention—

The process of stitching together a series of signatures, which consists of forming a portion of a thread into a loop and extending that loop lengthwise along the back of a signature, and then carrying a loop of a second thread through the back of that signature from the outside thereof, and then bringing it out through the same back at another place adjacent to the first loop, and also carrying a loop of a third thread through the end of the first loop of the first thread, and then through the back of the signature at a third place, and then bringing it out through the same back at a fourth place, and then carrying a loop of a fourth thread through the end of the first loop of the third thread outside of the signature, and then carrying a second loop of the first thread through the first loop of the second thread and through the first loop of the first thread, and thence laterally to the back of a second signature, and thence lengthwise of the back of that signature, and then repeating the operation until all the signatures in the series are stitched together, all substantially as described.

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Witnesses:

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