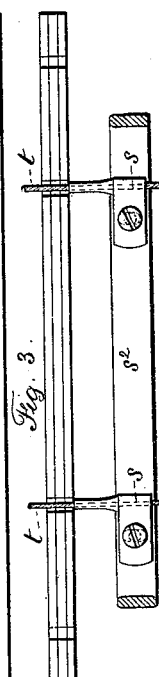
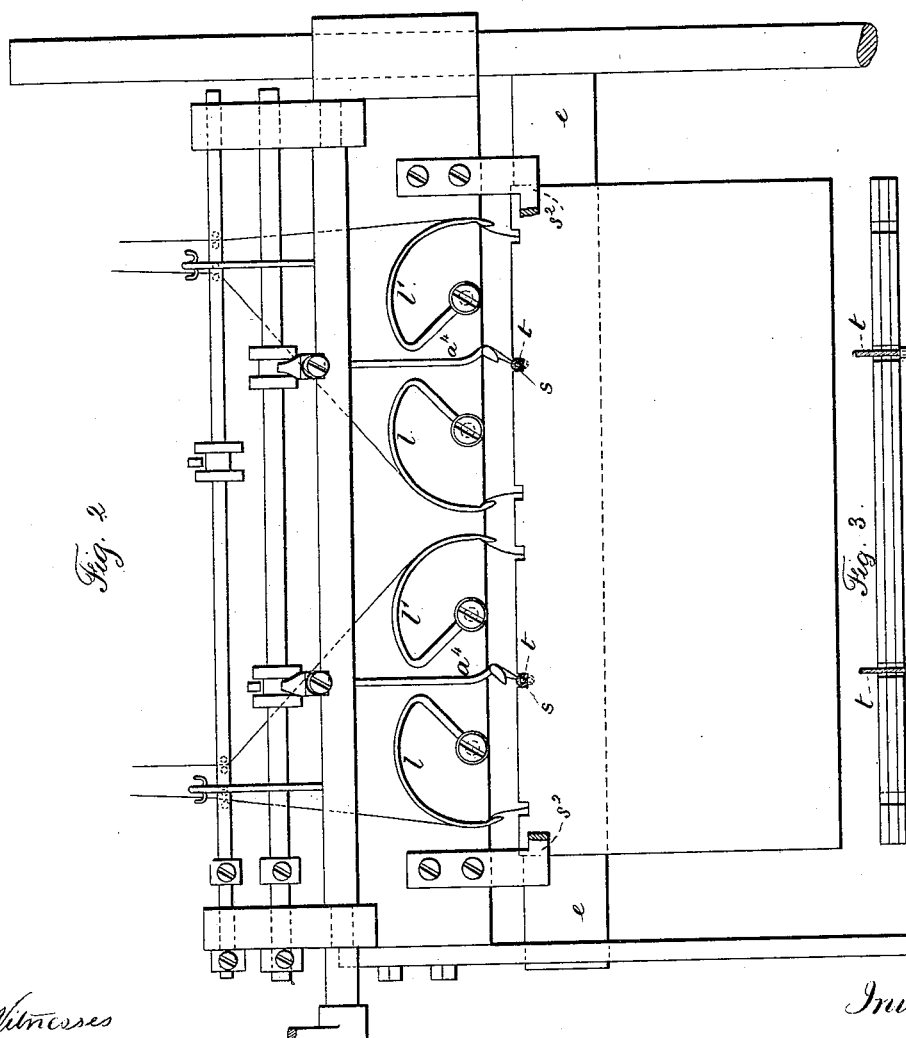
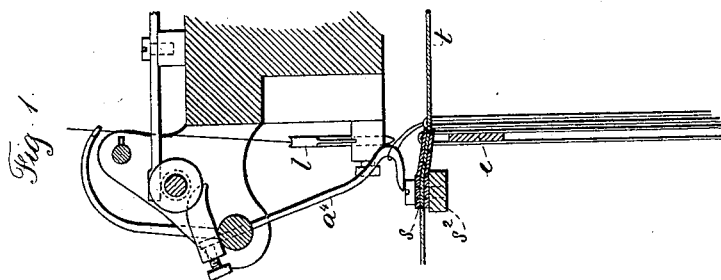


(No Model.)

D. M. SMYTH.
BOOK SEWING MACHINE.

No. 262,325.

Patented Aug. 8, 1882.



Witnesses

Chas. H. Smith
J. Fair

Inventor

D. M. Smyth
per Lemuel W. Ferrill att

UNITED STATES PATENT OFFICE.

DAVID M. SMYTH, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE SMYTH MANUFACTURING COMPANY, OF SAME PLACE.

BOOK-SEWING MACHINE.

SPECIFICATION forming part of Letters Patent No. 262,325, dated August 8, 1882.

Application filed April 24, 1882. (No model.)

To all whom it may concern:

Be it known that I, DAVID M. SMYTH, of Hartford, in the county of Hartford and State of Connecticut, have invented an Improvement in Book-Sewing Machines, of which the following is a specification.

Machines have been made for sewing books in which the thread is carried by a semicircular needle and passes in at the back of the signature and out again at a different place, and the thread from one needle has been interlooped with the thread from the next needle, and these threads have passed above a needle that occupies the channel or saw-cut in the back of the signature, and the same has been used to draw into the said channel a cord or string similar to that usually employed in binding books by hand.

Reference is hereby made to Letters Patent Nos. 238,451, 250,991, 250,987, granted to me, for a more full explanation of the book-sewing devices before mentioned.

In machinery for sewing books difficulty has been experienced in passing the cord or binding-string into the groove during the sewing operation, because the needles are apt to penetrate such cord and prevent the same being drawn to the proper tension in compressing, gluing, and hammering the backs of such books to shape.

My present invention is an addition to book-sewing machines of the general character aforesaid, whereby the transverse cord or binding-string is laid into the groove at the back of the signature as the sewing progresses without the risk of the needles coming into contact with or splitting such cord. Hence in the subsequent binding operations the said cord can be drawn endwise freely through the channel to tighten it up properly or to leave the proper length projecting from the edges of the back for uniting with the cover.

In the drawings, Figure 1 is a section of the tubular cord-shield and of the signatures and needle mechanism. Fig. 2 is an elevation of the needles and section of the cord-shield without the supporting-bar for the cord-shield, and Fig. 3 is a plan of the cord-shields and bar.

The semicircular needles *l* *l'*, looping-hooks *a*⁴, and devices for holding and actuating the same are substantially the same as in my

aforesaid Patent No. 250,991, and the sheet-holder *e* is similar in construction and mode of operation to that in my Patent No. 220,312.

My tubular cord-shield *s* is preferably of steel, of an internal diameter to allow the transverse cord *t* to pass through the same freely, but not loosely, and it is supported by a stationary bar, *s*², in front of the place where the sheet-holder *e* rises and brings the sheet up to place for sewing. The cord *t* is supplied from a suitable spool, and passes through this tubular shield and into the groove or channel across the back of the book. The cord-shield is adjusted so that its end comes behind the plane in which the needles vibrate, and such cord is held by the shield in a fixed position in relation to the needles and the shield surrounding the cord, and, being within the saw-cut in the sheet that is being sewed, prevents the points of the needles penetrating the cord, thereby accomplishing the objects aforesaid, and the back end of the cord-shield is to be in such a position that when a sheet has been sewed and it is pushed back against the previously-sewed sheet it passes off the said cord-shield, leaving nothing in the transverse groove below the threads but the cord *t*. The end of the cord-shield or tube forms a stop to prevent the sewed sheet springing back toward the place occupied by the sheet that is being sewed. This prevents the sheets being drawn too closely together when being sewed, and also maintains the proper relative positions of the sheets and cords. It is to be understood that one of these cord-shields is to be applied at each place where a transverse cord is required, and that the cords are drawn into the books progressively as the sewing is performed.

I claim as my invention—

The combination, in a machine for sewing books, of a holder to support the sheet while being sewed, needles for introducing the threads, a tubular shield protecting the transverse cord, and means for supporting the same in the proper position in relation to the sewing mechanism, substantially as set forth.

Signed by me this 18th day of April, A. D. 1882.

DAVID M. SMYTH.

Witnesses:

CHARLES E. GROSS,
WM. WALDO HYDE.