Nov. 19, 1935. O. MÜLLER 2,021,669

MECHANISM FOR AUTOMATICALLY SEVERING THE TERMINAL THREADS OF A STITCHED BOOK OR THE LIKE

Filed Sept. 28, 1931 3 Sheets-Sheet 1

Fig. 2.

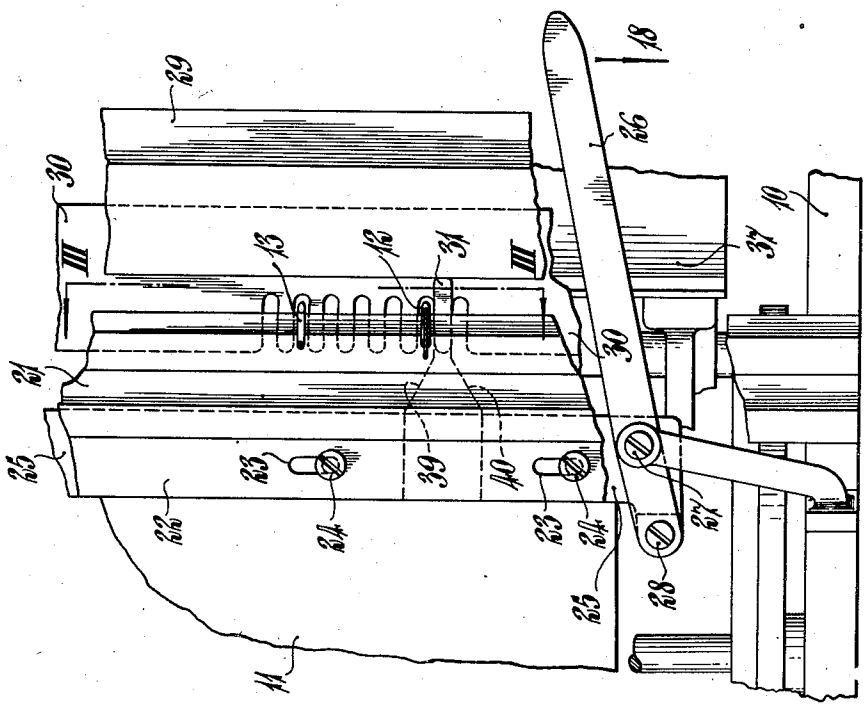
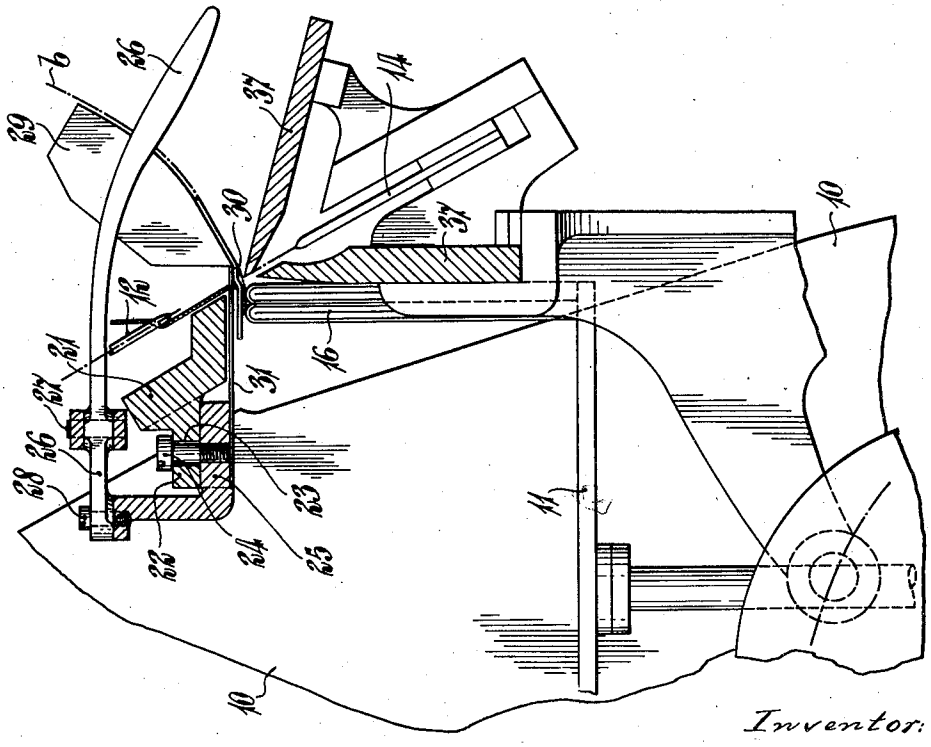


Fig. 1.



Inventor:
Oskar Müller
By Lucius Tolmeyer
Attorney.

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Fig. 3.

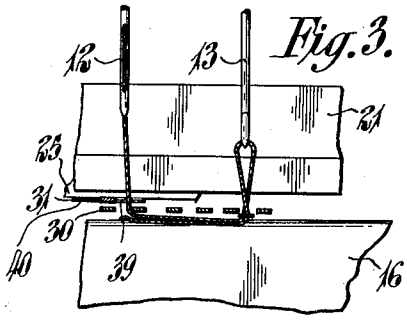


Fig. 4.

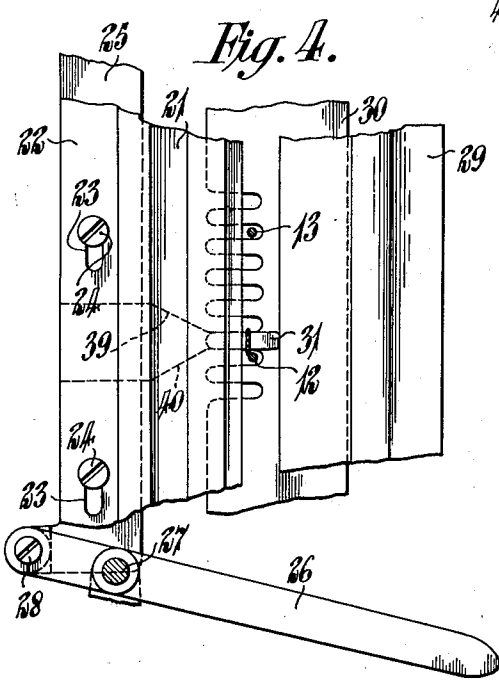


Fig. 5.

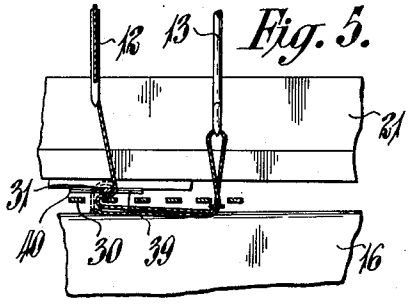


Fig. 7.

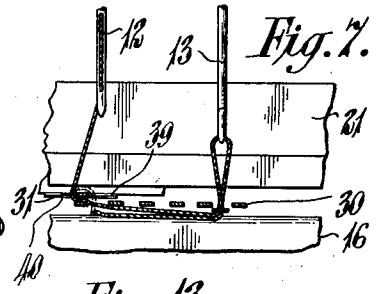


Fig. 12.

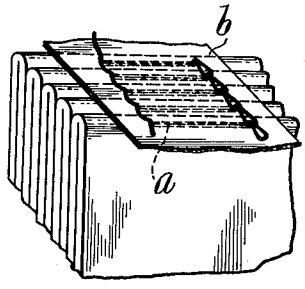
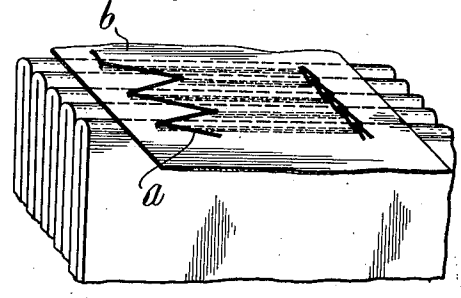


Fig. 13.



Inventor:
Oskar Müller
By Lucius Tarrant & Co
Attorneys.

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MECHANISM FOR AUTOMATICALLY SEVERING THE TERMINAL THREADS OF A STITCHED BOOK OR THE LIKE

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Fig. 6.

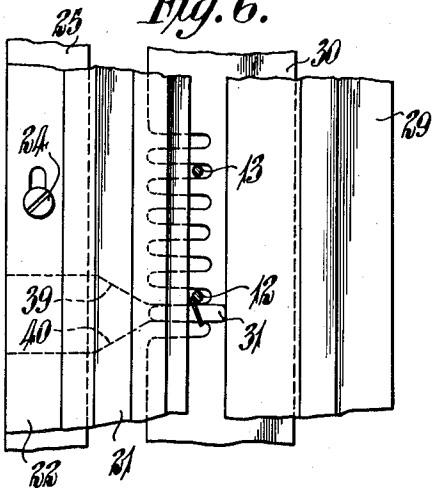


Fig. 8.

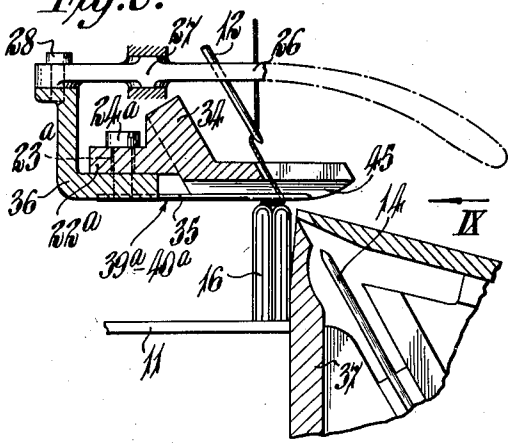


Fig. 9.

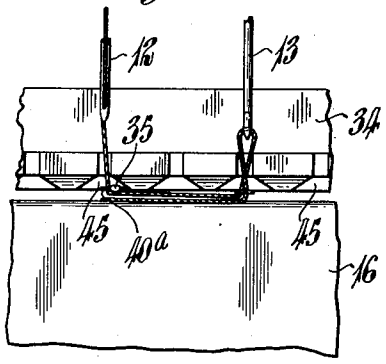


Fig. 10.

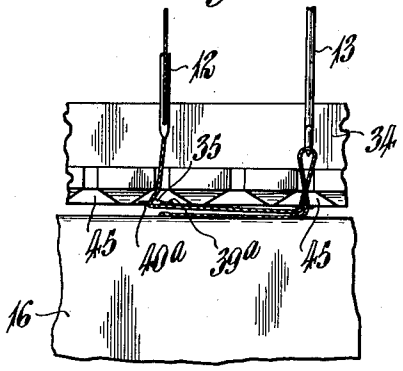
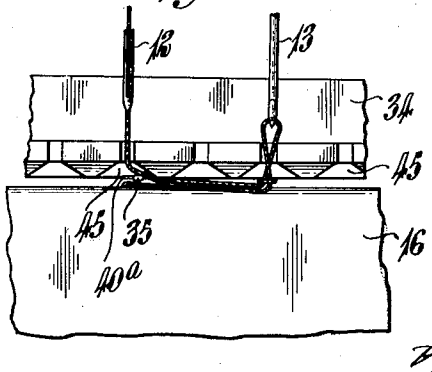


Fig. 11.



Inventor:
Oskar Müller
By Louis Tannenbaum
Attorney.

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UNITED STATES PATENT OFFICE

2,021,669

MECHANISM FOR AUTOMATICALLY SEVERING THE TERMINAL THREADS OF A STITCHED BOOK OR THE LIKE

Oskar Müller, Leipzig-Plagwitz, Germany, assignor to Gebruder Brehmer, Leipzig-Plagwitz, Germany, a limited partnership of Germany

Application September 28, 1931, Serial No. 565,662
In Germany April 10, 1931

35 Claims. (Cl. 112—252)

The present invention relates to book-stitching machines and more particularly concerns that type of machine in which means are provided for inserting, if desired, both simple chain-loop stitches and also cross or staggered stitches into the sections of a continuously stitched book-pad, as is well-known in the art.

In order to separate the stitched books from a book-pad stitched in this manner it is necessary to sever the interconnecting threads between the adjacent books.

Hitherto this operation has been performed manually although, when the interconnecting threads form part of idle stitches provided between the adjacent books, the threads may be severed mechanically as described in the co-pending application filed by Andre Rivlois and Oskar Müller, Serial No. 501,128, dated 9th December, 1930. Such stitches may, however, be inserted in book-pads without the use of interposed idle stitches, or alternatively the stitches may be utilized with or without idle stitches to secure backing strips to the book-pads. In this case it may prove to be impractical to use the mechanism described in the above numbered co-pending application.

The object of the present invention is to provide means for mechanically severing the interconnecting threads between the adjacent books of a stitched book-pad when the latter is stitched with or without the provision of idle stitches between the books, or with staggered stitches and/or provided with a backing strip as is known in the art.

According to this invention mechanism is provided for use in a thread-stitching machine whereby the thread leading from the terminal stitch of a stitched book to the initial stitch of an adjacent book is engaged mechanically and guided to thread severing means.

In order that the above description of the invention may be more readily understood, two embodiments of the invention will hereinafter be described with reference to the accompanying drawings which show, by way of example, constructional forms of the invention applied to stitching machines of the swinging sheet carrier type provided with stitching mechanism whereby both simple chain-loop stitches and staggered stitches may be inserted, if desired, into the book-sections in known manner.

Referring to the accompanying drawings:

Fig. 1 is a part sectional view of a portion of a stitching machine of the swinging sheet carrier type showing the arrangement of one embodiment of the thread-severing mechanism according to this invention and associated with stitching mechanism which includes a tongued strip guide.

Fig. 2 is a plan view of the thread severing mechanism located in the stitching machine.

Fig. 3 is a fragmentary detail view taken on the line III—III (Fig. 2) and showing the stitching needles and thread held thereby in one position of the stitch forming movement.

Fig. 4 is a fragmentary plan view of the thread severing apparatus showing the thread guide moved to engage the terminal thread to be severed.

Fig. 5 is a detail view at right angles to Fig. 4 of the thread selector when engaging the thread.

Fig. 6 is a view corresponding to Fig. 4 showing the thread selector moved to the opposite extreme of its lateral travel to engage the following terminal thread.

Fig. 7 is a detail view at right angles to Fig. 6, showing the thread selector engaging the terminal thread.

Fig. 8 shows an alternative arrangement of the thread severing apparatus according to this invention for use in a thread stitching machine whereby the needle guides are used without tongued strip guides.

Fig. 9 is a view looking in the direction of the arrow IX (Fig. 8) showing the recessed needle-guide and the position of the thread selector while the stitching is proceeding on the first book of a book-pad.

Fig. 10 is a view corresponding to Fig. 9 showing the thread selector moved to one extreme of its lateral travel to engage a terminal thread which is to be severed.

Fig. 11 shows, in a view corresponding to Figs. 9 and 10, the position of the thread selector when moved to engage the next terminal thread at the other extreme of its travel.

Fig. 12 shows, in part, a book-pad provided with a backing strip and stitched with a simple chain-loop stitch such as would be produced in a stitching machine of the above type, and

Fig. 13 shows, in part, a book-pad similarly provided with a backing strip and stitched with both chain-loop and staggered or cross stitches.

As will be seen in Figs. 12 and 13, when a book-pad is provided with a backing strip *b* either by means of a simple chain-loop stitch, Fig. 12, or by staggered stitches, Fig. 13, a thread guide or selector adapted to operate above and parallel to the back of the book-pad (as described in the above numbered co-pending application) will

not locate the connecting or terminal thread *a* since when the simple chain-loop stitch is used, the thread *a* will be positioned under the backing strip *b* while, when stitching the book-pad with staggered stitches the connecting or terminal thread *a* although now positioned on top of the backing strip *b* is displaced from side to side during the stitching and so renders difficult the correct registration of the thread guide and requisite interconnecting thread.

For the purpose of severing the terminal threads associated with backing-strips, as well as staggered or simple chain-loop stitches inserted into book-pads without backing strips as is sometimes the case, irrespective of the stitch being either an idle stitch or an inserted stitch, the thread severing apparatus according to this invention has been devised.

Referring to Figs. 1 and 2, the stitching machine includes a main frame **10** which serves to support a book-pad trough **11** positioned, as is usual, beneath a stitcher head or heads which, since they form no part of the present invention, are merely indicated by the sewing needle **12** and looping needle **13**. The needles are associated in their stitching operations with a swinging sheet carrier **37**, a rear needle guide **21** and upwardly moving piercing needles **14** whereby the book sections placed upon the sheet carrier **37** are stitched and added to the book-pad advancing along the trough **11**. The stitching arrangements are of well known type whereby either or both simple chain-loop or cross and staggered stitches may be inserted into the book-sections which may or may not be provided with a backing strip.

The rear needle guide is associated with a tongued strip guide **30** which is attached in known manner to the underside of a second or front needle guide or bar **29** which latter is supported by the machine frame and is provided with a curved surface adapted to lead a backing strip to the tongued strip guide **30**. The latter is positioned adjacent to and slightly spaced from the underside of the rear needle guide **21**.

The rear needle-guide **21** is rigidly supported from the frame **10** of the machine and is provided with a horizontal projection or flange **22** having slots **23** formed therein. A slide bar **25** is positioned beneath and parallel to the projection **22** and is provided with bolts or shoulder pins **24** adapted slidably to engage the slots **23**.

A lever or rod **26** is pivoted at **27** on the machine frame and pivotally connected by means of the pin **28** to an upwardly projecting flange formed integral with the outer edge of the slide bar **25** at one extremity thereof.

Thread selector or guide members **31** are mounted on the slide bar **25** and project at right angles thereto to extend to the front guide **29** by passing between the lower surface of the guide **21** and upper surface of the tongued strip guide **30**. Thread severing members **39** and **40** are mounted upon or formed integral with the thread guides or selectors **31** and are arranged to have their cutting edges projecting laterally and horizontally to the said thread guides. The effect of the mechanism is that when the lever or rod **26** is moved about its pivot **27**, the slide bar **25** together with the thread selectors or guides **31** are moved laterally of the machine, which movement is guided and limited by the travel of the shoulder pins **24** in their respective slots **23**.

The operation of the device is as follows:

The book-sections or sheets **16** to be stitched are placed one by one on the carrier **37** and so fed singly to the stitching mechanism. The piercing needles **14** move upwardly to pierce the section from below whereupon the sewing needle **12** and looping needle **13** enter, from above, the holes formed by the needles **14** and in association carry out the primary stitch forming operation in known manner. The individual book sections as stitched are packed in the book-trough **11** in the form of a continuously stitched book-pad to which is attached the backing strip *b*, Fig. 12 or 13, fed by the strip guides **29** and **30** as will be readily understood by those having knowledge of the art.

Idle stitches are formed between each two complete books of the book-pad and the completion of each idle stitch brings the needles to their top-most raised position, Fig. 3, with an upwardly inclined terminal thread held taut between the formed idle stitch and the sewing needle. At this moment the lever **26** is moved about its pivot **27** in the direction of the arrow **18**, Fig. 2, and the slide bar **25** is moved to the right, thus moving laterally the thread guide or selector **31** of which a plurality may be used according to the number of stitcher heads employed in the machine.

The guide or selector **31** engages the updrawn terminal thread as shown in Figs. 4 and 5 and remains in this position until the lever **26** is again shifted. The sewing needle now descends to insert a stitch in the first section of the next book fed by the swinging sheet carrier to the stitching position, and thus the terminal thread engaged by the member **31** becomes looped over the latter member as shown by the dotted line in Fig. 5.

During the subsequent stitching of the succeeding books of the book-pad, the thread so looped over the guide **31** is pushed along the latter and finally encounters the cutting edge of the severing member **39** by which it is severed. When the stitching of the succeeding book is completed, a further idle stitch is formed and by means of the lever **26** the thread selector **31** is moved to the opposite limit of its lateral movement with the result that it engages the upwardly extending thread of the last formed idle stitch and pushes it to the left, Figs. 6 and 7. During the continued stitching operation upon the first section of the next book the thread is looped over the thread guide and subsequently progressed along the said guide and severed by engagement with the cutting member **40**.

Referring to Figs. 8, 9, 10 and 11, the thread severing apparatus is shown provided for use in a stitching machine more particularly adapted to stitch booklets which, in the usual course, are not provided with backing strips.

As shown in Fig. 8, in a machine for this purpose, the front needle guide and tongued strip guide are omitted. The rear needle guide **34** is provided with a flanged extension **22***a* which is formed with slots **23***a*. A slide bar **36** is mounted beneath the extension or flange **22***a* parallel thereto and carries shoulder pins or bolts **24***a* which slidably engage the slots **23***a*. The slide bar **36** is moved in a similar manner to that described in reference to the first embodiment, i. e. a rod or lever **26**, pivotally mounted on the frame **10** of the machine, is pivotally linked at **28** to one extremity of the slide bar **36** and when moved actuates the latter.

The slide bar **36** carries one or a series of projecting thread selector or guide members **35** incorporating opposing thread-severing edges **39***a*, **40***a* and similar to the above described members

31 but of modified width. These guide members 35 are preferably set into grooves 45 formed in the undersurface of the needle guide 34 but could, if desired, be disposed adjacent thereto as in the above described embodiment.

The components of the stitching mechanism are similar to those previously described and comprise the swinging sheet carrier 37, which feeds the booklets to be stitched to the book-pad trough 11 and is associated with one or more stitcher heads indicated by the stitching needle 12, Fig. 8.

The operation of the thread severing device is precisely similar to that described in reference to the first embodiment.

Upon the completion of the stitch inserted into the booklet or subsequent locking stitch, the lever 26 is moved about its pivot to actuate the slide bar 36 and thread selector or selectors carried thereby.

The latter, before movement, is in the position shown in Fig. 9 and after the first engaging movement is imparted thereto is caused to engage the terminal thread of the last formed stitch and push the thread to one side out of alignment with the needle 12 as shown in Fig. 10.

When the needle 12 descends to form the stitch in the next fed booklet, the thread is looped over the selector 35 as will readily be understood and when the last formed stitch or subsequent idle stitch is completed, the thread selector 35 is moved to the opposite extreme of its lateral travel and so engages the last positioned updrawn thread which, in turn, is looped over the thread selector or guide 35.

During the formation of the book-pad and its progress along the trough 11, the terminal threads so looped over the thread-selectors 35 are caused to engage either one or the other of the cutting edges or severing members 39 and 40 and thus the severing operation of each book is completed.

The actuating lever 26 as herein described, is a manually operated member, but it can readily be adapted to be operated by timed mechanical means such as, for example, a cam driven link mechanism in timed driving connection with the drive of the stitching mechanism.

Thread severing apparatus of single operative unit construction has, for clearness, been more particularly described herein but it is obvious that the slide bar 25 or 36 would carry a series of thread selector members 31 or 35 in accordance with the number of stitcher heads operating upon the book-pad.

Such thread selectors would each have formed integral therewith the cutting or thread severing edges 39, 40 or 39a, 40a or if preferred separate thread severing means could be mounted on or associated with each of the said thread selectors or guides. The thread severing means need not, of necessity, comprise cutting edges or similar knife blades but for instance be composed of devices adapted to sever the selected threads by means of applied acid or timed electric sparks.

The use of the thread severing apparatus has been described more particularly with reference to the severance of the terminal threads of idle stitches formed after each completely stitched book or booklet but the operation of the apparatus is in no way dependent upon the formation of an idle stitch.

When an idle stitch is not formed after a completely stitched book or booklet, the terminal thread to be severed leads in an upward direction directly from the last inserted stitch to the sewing needle 12, and is engaged as above described during the lateral movement of the said thread selector.

It will be appreciated that, the thread selector or guide members 31 as shown in Fig. 1, and similarly the thread selector or guide members 35 described in reference to the second embodiment, are positioned so that the free extremities thereof are in contact or almost in contact with the vertical face of the needle guide or bar 29. Thus the threads to be severed, when loosened by the downward descent of the stitching needles 12 cannot pass downwardly between the extremities of the thread guides 31 and the face of the needle guide 29 but must lodge upon the upper surface of the said thread guides 31.

What I claim is:

1. In a book-stitching machine, in combination, a needle guide, thread stitching needles associated with said needle guide, means for assembling and stitching a book beneath said needle guide, thread-selecting members projecting between said stitched book and said needle guide adjacent the path of movement of the said stitching needles, a thread-severing device associated with said thread selecting members, means for imparting lateral movement to the said thread selecting members to engage and carry from the normal position the terminal threads extending from the stitched book to the stitching needles, means for looping the displaced terminal threads over the contacting thread-selecting members, and means for progressing the said looped threads towards the said thread severing members.

2. In a book-stitching machine, in combination, a rear needle guide, a front needle guide, a thread selecting member slidably supported by the rear needle guide, means for imparting lateral movement to the said thread selecting member, and means for severing a thread engaged by the said thread selecting member.

3. In a book-stitching machine, in combination, a rear needle guide, a horizontal slide bar slidably supported by said rear needle guide, stitch forming needles associated with said needle guide, a front needle guide, a backing strip guide associated with said needle guides, a thread-selecting member supported by said slide bar and adapted to extend between said rear needle guide and said backing strip guide, means for imparting lateral movement to the said thread selecting member to engage the terminal thread of a stitched book, and means for severing the thread engaged by the said thread selecting member.

4. In a book-stitching machine, in combination, a machine frame, a rear needle guide having a slotted flanged extension and supported on said machine frame, a horizontal slide bar, shouldered pins secured to said slide bar and adapted to engage slidably the slotted extension of said rear needle guide, a lever pivoted intermediate its length to said machine frame and connected to one extremity of said slide bar in order to impart lateral movement to the said slide bar, a front needle guide supported by said machine frame, a tongued strip guide secured to said front needle guide and extending beneath said rear needle guide, thread selecting members secured to said slide bar and adapted to extend between the undersurface of said rear needle guide and the tongued strip guide, stitch forming needles associated with said needle guides and adapted to

position in the path of lateral movement of the thread selecting members the terminal threads of a stitched book and means for severing the said terminal threads when the latter are engaged by the said thread selecting members.

5. In a book-stitching machine, in combination, a machine frame, a book trough, a sheet carrier associated with said book trough, thread stitching needles adapted to stitch book sections fed to the book trough by the said sheet carrier, a rear needle guide supported on said machine frame above said book trough, a horizontal slide-bar slidably supported by said rear needle guide and adapted to move parallel thereto, means for imparting a lateral movement to said slide bar in either direction transversely of said book trough, thread selecting members supported by said slide bar and adapted to extend into the path of the terminal threads extending from the stitching needles to the last stitched book, and means carried by the thread selecting members for severing the said terminal threads.

6. In a book-stitching machine, in combination, a needle guide having recesses in its undersurface, a horizontal slide bar slidably mounted on said needle guide, thread selecting members supported by the said slide bar and having their free ends positioned in the recesses in the said needle guide, means for holding taut in the path of travel of the said thread selecting members the terminal threads of a stitched book, means for imparting lateral movement to the said slide bar and thread selecting members thereby to engage the terminal threads, means for looping the said threads over the thread selecting members, means for progressing the said looped threads along the said thread selecting members, and means for severing said terminal threads during the last mentioned movement.

7. In a book-stitching machine, in combination, a needle guide having recesses formed in its underface, a horizontal slide bar slidably mounted on said needle guide, thread selecting members supported by said slide bar and having their free ends positioned in the recesses in the said needle guide, thread stitching needles associated with said needle guide, thread severing members associated with said thread selecting members, means for imparting a lateral movement to the said thread selecting members to engage the latter with adjacent terminal threads extending from the stitching needles to the stitched book, means for looping the said threads over the thread selecting members and means for progressing the said looped terminal threads towards the said thread severing means.

8. In a book-stitching machine, in combination, a machine frame, a rear needle guide having a slotted flanged extension and supported on said machine frame, a horizontal slide bar, shouldered pins secured to said slide bar and adapted to engage slidably the slotted extension of said rear needle guide, a lever pivoted intermediate its length to said machine frame and connected to one extremity of said slide bar in order to impart lateral movement to the said slide bar, a front needle guide supported by said machine frame, a tongued strip guide secured to said front needle guide and extending beneath said rear needle guide, thread selecting members secured to said slide bar and adapted to contact lightly their free extremities with the front needle guide, stitch forming needles associated with said needle guides and adapted to position in the path of lateral movement of the thread selecting members the terminal threads of a stitched book and means for severing the said terminal threads when the latter are engaged by the said thread selecting members.

9. In a book-stitching machine, in combination, a rear needle guide, a front needle guide, a thread selecting member slidably supported by the rear needle guide and having its free extremity closely adjacent said front needle guide, means for imparting lateral movement to the said thread selecting member, and means for severing a thread engaged by the said thread selecting member.

10. In a book-stitching machine, in combination, a rear needle guide, a front needle guide, a thread selecting member slidably supported by the rear needle guide and having its free extremity contacting with said front needle guide, means for imparting lateral movement to the said thread selecting member, and means for severing a thread engaged by the said thread selecting member.

11. In a book-stitching machine, mechanism for severing the terminal threads of a stitched book or the like, comprising a thread guide, means for displacing the thread guide laterally so that a thread leading from a formed stitch becomes looped over said guide in the formation of the subsequent stitch, and a thread-severing device mounted adjacent said thread guide to engage and sever the looped thread.

12. In a book-stitching machine, mechanism for severing the terminal threads of a stitched book or the like, comprising a thread guide extending transversely of said stitched book, means for displacing the thread guide laterally so that a thread leading from a formed stitch becomes looped over said guide in the formation of the subsequent stitch, and a thread-severing device having two or more cutting edges and mounted adjacent said thread guide to engage and sever the looped thread.

13. In a book-stitching machine, mechanism for severing the terminal threads of a stitched book or the like, comprising a thread guide, means for displacing the thread guide laterally so that a thread leading from a formed stitch becomes looped over said guide in the formation of the subsequent stitch, and a thread-severing device provided with at least one cutting edge and mounted upon said thread guide to engage and sever the looped thread.

14. In a book-stitching machine, mechanism for severing the terminal threads of a stitched book or the like, comprising a thread guide, means for displacing this thread guide laterally so that a single updrawn thread leading from a formed stitch becomes looped over said guide in the formation of the subsequent stitch, and a thread-severing device located adjacent said thread guide and adapted to engage and sever said looped thread.

15. In a book-stitching machine, mechanism for severing the terminal threads of a stitched book or the like, comprising a thread guide, means for displacing the thread guide laterally so that a thread leading from a formed stitch becomes looped over said guide, and a thread-severing device arranged to move with but not relatively to said thread guide and adapted to engage and sever said looped thread.

16. In a book-stitching machine, mechanism for severing the terminal threads of a stitched book or the like, comprising a thread guide, means for displacing the thread guide laterally

so that a thread leading from a formed stitch becomes looped over said guide, and a thread-severing device having at least one cutting edge, said severing device being arranged to move with but not relatively to said thread guide and adapted to engage and sever said looped thread.

17. In a book-stitching machine adapted to produce a continuously stitched book-pad, mechanism for severing the threads connecting the adjacent books, comprising a thread guide, a thread-severing device associated with said thread guide, means for displacing the thread guide laterally so that the thread to be severed becomes looped over said guide and progresses along the latter to contact with said severing device during the subsequent stitching of said book-pad.

18. In a book-stitching machine, means for severing the interconnecting threads of a continuously stitched book-pad, comprising a thread-severing device, a thread guide extending from said thread-severing device to a thread leading from the stitched book-pad, and means for displacing said thread guide transversely of the book-pad so that the thread becomes looped over said thread guide and progresses along said guide to engage said thread-severing member during the subsequent stitching of the book-pad.

19. In a book-stitching machine, means for severing the interconnecting threads of a continuously stitched book-pad comprising a substantially horizontal thread guide, means for imparting a reciprocatory lateral movement to said guide, a stitching needle adapted to draw a thread across the path of travel of said thread guide, means for looping said thread over said thread guide so that the thread traverses said guide, and a thread-severing member mounted adjacent said thread guide to engage the moving looped thread.

20. In a book-stitching machine adapted to produce a continuously stitched book-pad, mechanism for severing the threads connecting the adjacent books, comprising a substantially horizontal thread guide, means for moving said guide transversely of the book-pad to engage a thread updrawn from a formed stitch so that the thread becomes looped over said guide in the formation of the subsequent stitch, and a thread-severing member adapted to engage and sever said looped thread.

21. In a book-stitching machine, means for severing the interconnecting threads of a continuously stitched book-pad comprising a thread-stitching needle adapted to hold a thread extended obliquely from a formed stitch, a thread guide, means for displacing said thread guide laterally to engage said extended thread so that the latter subsequently becomes looped over said guide, and a thread-severing member adapted to engage and sever said looped thread.

22. In a book-stitching machine, in combination, a thread-stitching needle adapted to hold a thread extended obliquely from a formed stitch, a substantially horizontal thread guide having thread-cutting members formed integral with its lateral edges, means for engaging said guide with said thread so that the latter becomes looped over said guide, and means for progressing said looped thread along said guide to contact with at least one of said thread-cutting members.

23. In a book-stitching machine, means for severing the terminal threads of a stitched book, comprising a thread-selecting member adapted to project into the plane of the terminal threads extending from a stitched book, a lateral thread-cutting device arranged to move with but not relatively to said thread-selecting member, means for imparting a reciprocatory lateral movement to said thread-selecting member to engage the terminal thread adjacent thereto, means for looping said terminal thread over said thread-selecting member, and means for progressing said looped terminal thread to said thread-severing means.

24. In a book-stitching machine, means for severing the terminal threads of a stitched book, comprising at least one thread-selecting member adapted to project into the plane of the terminal threads extending from a stitched book, a thread-severing device having opposed lateral cutting edges associated with each said thread-selecting member and arranged to move with but not relatively thereto, means for imparting a reciprocatory lateral movement to each said thread-selecting member so that it engages and pushes to one side of the normal path thereof an adjacent terminal thread, means for looping said terminal thread over said thread-selecting member, and means for progressing the looped terminal thread to said thread-severing means.

25. In a book-stitching machine, a needle guide, a thread-stitching needle adapted to reciprocate transversely of said needle guide, a member movable at intervals between said needle guide and the work to be stitched and across the path of said needle in a direction transversely of the path of movement of the work, so that the thread carried by said needle becomes looped over said member in the following stitch-forming operation of said needle, and a thread-severing device associated with said member to sever the thread engaged thereby.

26. In a book-stitching machine, a needle guide, a thread-stitching needle adapted to reciprocate transversely of said needle guide, a member movable at intervals between said needle guide and the work to be stitched and across the path of said needle in a direction transversely of the path of movement of the work, so that the thread carried by said needle becomes looped over said member in the following stitch-forming operation of said needle, and a thread-severing device mounted upon said member to sever the thread engaged thereby.

27. In a book-stitching machine, an apertured needle guide, a thread-stitching needle adapted to reciprocate through an aperture in said needle guide in each stitch-forming operation, a member movable at intervals between said needle guide and the work to be stitched and across the path of said needle in a direction transversely of the path of movement of the work, so that the thread carried by said needle becomes looped over said member in the following stitch-forming operation of said needle, and a thread-severing device associated with said member to sever the thread engaged thereby.

28. In a book-stitching machine, an apertured needle guide, a thread-stitching needle adapted to reciprocate through an aperture in said needle guide in each stitch-forming operation, a member movable at intervals between said needle guide and the work to be stitched and across the path of said needle in a direction transversely of the path of movement of the work, so that the thread carried by said needle becomes looped over said member in the following stitch-forming operation of said needle, and a thread-severing

device carried by said member to sever the thread engaged thereby.

29. In a machine for producing a continuously stitched book-pad, a needle guide, a thread-stitching needle adapted to reciprocate transversely of said guide, a thread-guiding member provided with at least one cutting edge and movable at intervals between said needle guide and the work to be stitched and across the path of said needle in a direction transversely of the book-pad, so that the thread carried by said needle is engaged by said thread-guiding member and severed by contact with said cutting edge thereof.

30. In a book-stitching machine, a needle guide, a thread-stitching needle adapted to reciprocate transversely of said guide, a blade having at least one sharpened edge and supported by said needle guide, said blade being arranged to move at intervals between said needle guide and the work to be stitched and across the path of said needle in a direction transversely of the path of movement of the work, so that the thread carried by said needle is engaged by said blade and severed by contact with said sharpened edge thereof.

31. In a book-stitching machine, a needle guide plate having an opening for the passage of a thread-stitching needle, a thread-stitching needle which reciprocates through said opening, a member supported by said needle guide plate and movable at intervals relatively to said guide plate and across the path of said needle so as to dwell upon one side of said needle path while the signatures of one book are being stitched, and then to move across and dwell upon the opposite side of said needle path while the signatures of the following book are being stitched, whereby the thread between the adjacent stitched books becomes looped over said member, and a thread-severing device associated with said member to sever the looped thread.

32. In a book-stitching machine, a needle guide plate having an opening for the passage of a thread-stitching needle, a thread-stitching needle which reciprocates through said opening, a member supported by said needle guide plate and adapted to move at intervals below said guide plate and across the path of said needle so as to dwell upon one side of said needle path while the signatures of one book are being stitched, and then to move across and dwell upon the opposite side of said needle path while the signatures of the following book are being stitched, whereby the thread between the adjacent stitched books becomes looped over said member, and a thread-severing device associated with said member to sever the looped thread.

33. In a book-stitching machine a needle guide plate, a thread-stitching needle which moves transversely of said plate, a thread-engaging member positioned between said plate and the work to be stitched and movable at intervals across the path of said needle so as to dwell upon one side of said needle path while the signatures of one book are being stitched, and then to move across and dwell upon the opposite side of said needle path while the signatures of the following book are being stitched, whereby the thread between the adjacent stitched books becomes looped over said member, and a thread-severing device associated with said member to sever the looped thread.

34. In a book-stitching machine for stitching the folded edges of book signatures, a needle guide plate having an opening for the passage of a thread-stitching needle and an opening for the passage of a thread-looping hook, a thread-stitching needle which reciprocates through said needle opening, a thread-looping hook which reciprocates through said hook opening, a thread-engaging member supported by said guide plate and movable at intervals across the needle path so as to dwell upon one side of said needle path during the stitching of the signatures of one book and then to move across and dwell upon the other side of said needle path during the stitching of the signatures of the following book whereby the interconnecting thread between the adjacent stitched books becomes looped over said thread-engaging member, and a thread-severing device associated with said member to sever said looped thread.

35. In a book-stitching machine for stitching the folded edges of book signatures, a needle guide plate having an opening for the passage of a thread-stitching needle and an opening for the passage of a thread-looping hook, a thread-stitching needle which reciprocates through said needle opening, a thread-looping hook which reciprocates through said hook opening, a thread-engaging blade provided with at least one thread-severing edge, said blade being supported by said guide plate and movable at intervals between said plate and the work to be stitched and across the needle path so as to dwell upon one side of said needle path during the stitching of the signatures of one book and then to move across and dwell upon the other side of said needle path during the stitching of the signatures of the following book whereby the interconnecting thread between the adjacent stitched books becomes looped over said thread-engaging blade and severed.

OSKAR MÜLLER.