March 28, 1933. O. KLEINSCHMIT 1,902,864

METHOD OF AND MECHANISM FOR EXTRACTING INTERCONNECTING THREADS BETWEEN STITCHED BOOKS

Filed April 21, 1932 4 Sheets-Sheet 1

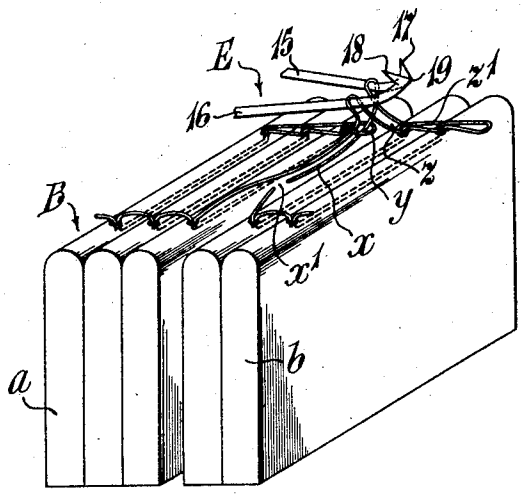


Fig. 1.

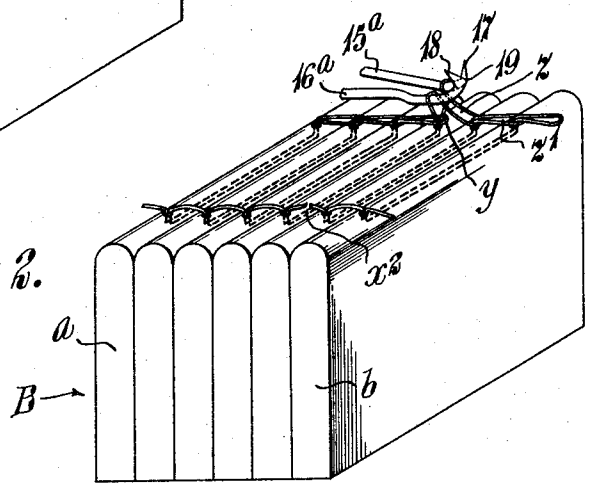


Fig. 2.

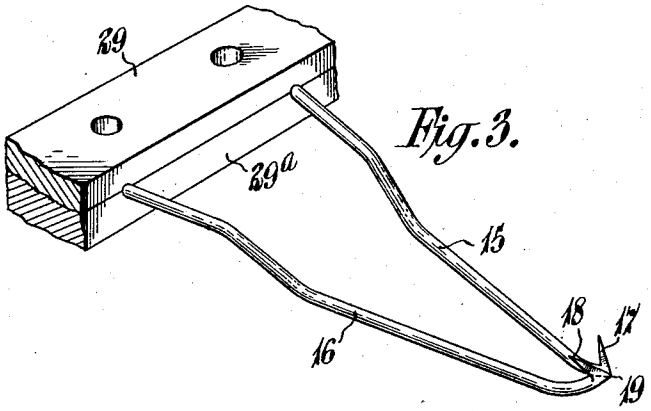
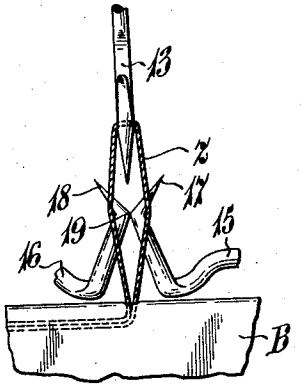


Fig. 3.

Fig. 3a



Inventor:
Oscar Kleinschmit
By Lauritzen
Attorney.

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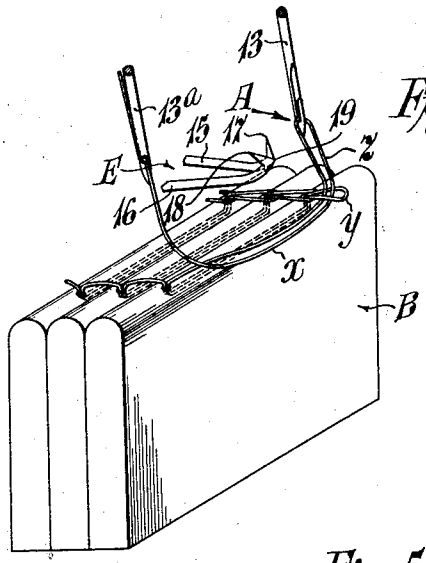


Fig. 4.

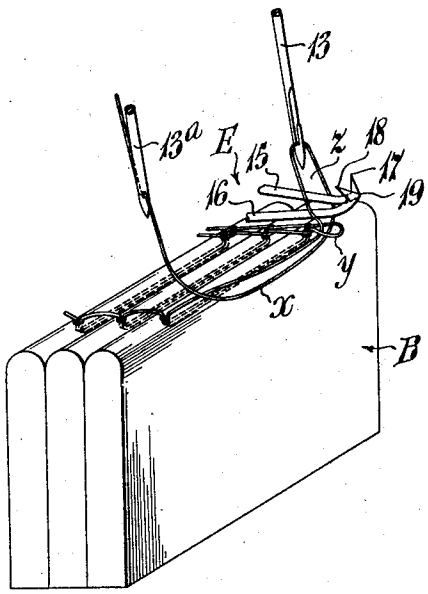


Fig. 5.

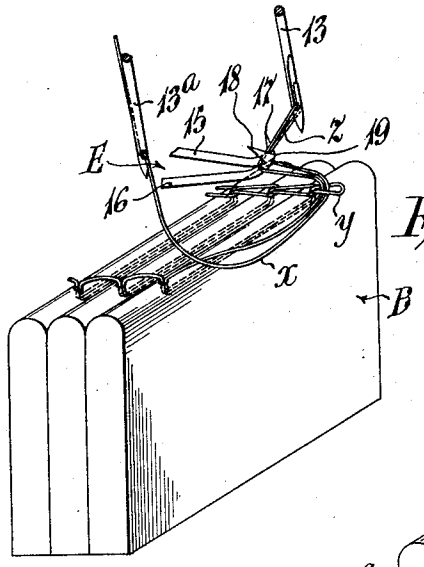


Fig. 6.

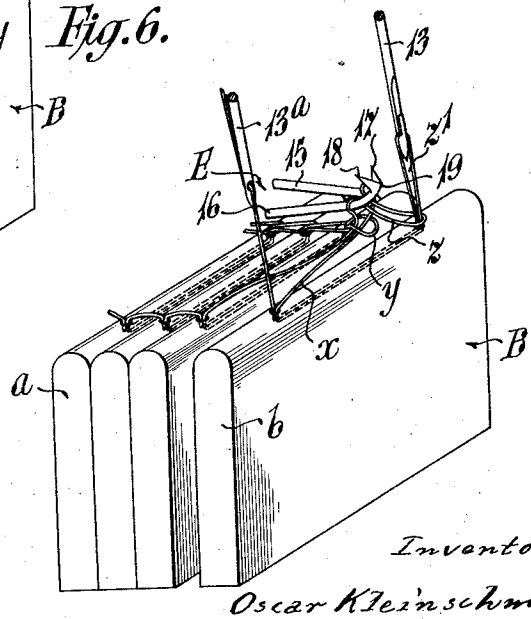


Fig. 7.

Inventor:
Oscar Kleinschmit
By Lucius Tower & Co
Attorney.

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METHOD OF AND MECHANISM FOR EXTRACTING INTERCONNECTING THREADS BETWEEN STITCHED BOOKS

Filed April 21, 1932 4 Sheets-Sheet 3

Fig. 8.

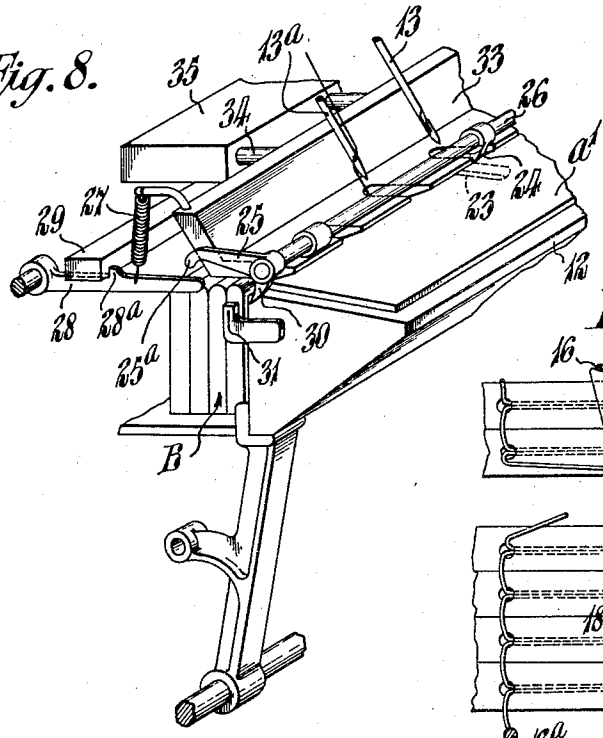
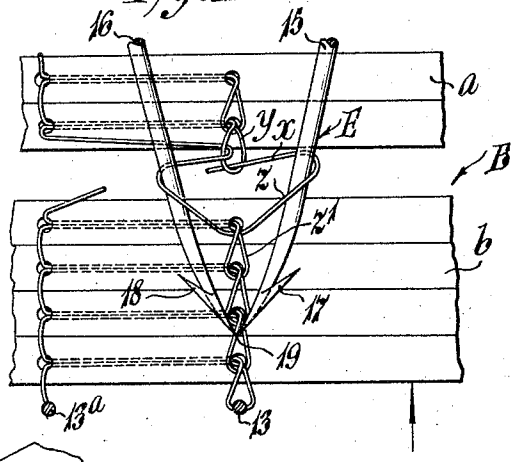


Fig. 11.



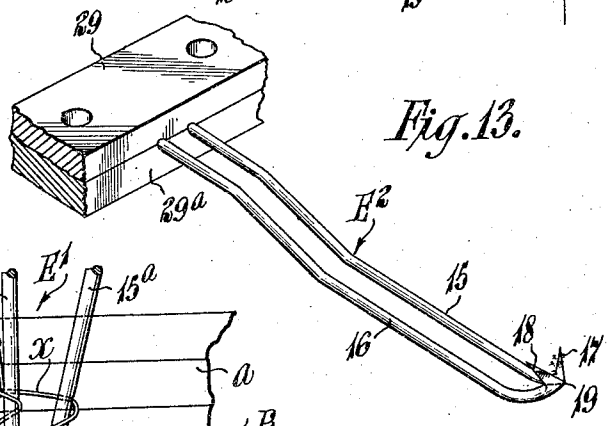


Fig. 13.

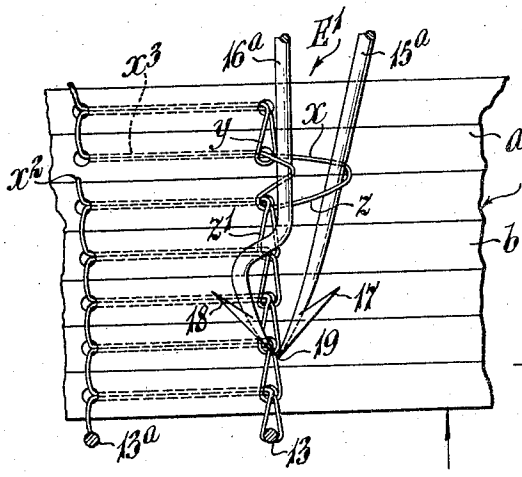


Fig. 12.

Inventor:
Oscar Kleinschmit
By Lucius Tuttle
Attorney.

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METHOD OF AND MECHANISM FOR EXTRACTING INTERCONNECTING THREADS BETWEEN STITCHED BOOKS

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Fig. 10.

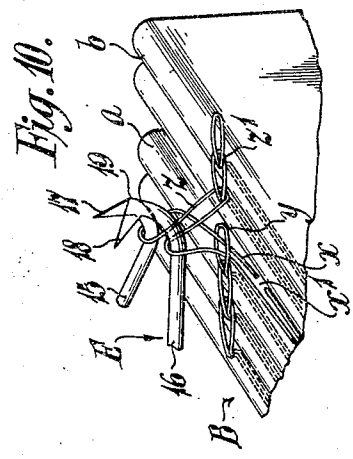


Fig. 9.

Inventor:
Oscar Kleinschmit
By Louis Pamitzke
Attorney

Patented Mar. 28, 1933

1,902,864

UNITED STATES PATENT OFFICE

OSCAR KLEINSCHMIT, OF LEIPZIG-PLAGWITZ, GERMANY, ASSIGNOR TO GEBRUDER BREHMER, OF LEIPZIG-PLAGWITZ, GERMANY, A LIMITED PARTNERSHIP OF GERMANY

METHOD OF AND MECHANISM FOR EXTRACTING INTERCONNECTING THREADS BETWEEN STITCHED BOOKS

Application filed April 21, 1932, Serial No. 606,748, and in Germany June 4, 1931.

The present invention relates to book-stitching machines and more particularly concerns that type of machine in which book-sections are fed, upon a stitching saddle, to suitable thread stitching means and progressed therefrom in the form of a continuously stitched book-pad comprising a series of completely stitched books which are joined together by interconnecting threads which may or may not be in the form of idle or locking stitches.

When such interconnecting threads are severed in order to separate the books, the severed threads are left interhanging in the loops of the terminal stitches of the adjacent books and must be extracted from these books to complete the separation of the books.

The object of this invention is to provide an improved method of and means for extracting the interconnecting threads of a stitched book-pad after the manual or mechanical severance of the said terminal threads.

According to this invention in a method of extracting the severed interconnecting threads of a stitched book-pad from the loops of the adjacent stitches the thread to be extracted is positively engaged and guided so that by the normal progression of the book-pad the thread after its severance is freed from the adjacent thread loops.

In carrying this method into effect use is made of the movement of the book-pad per se to extract the interconnecting threads which are severed by means actuated and controlled mechanically or manually in any desired manner. Such thread-severing means do not form any part of the present invention and therefore are not herein described or shown in the accompanying drawings.

In one constructional embodiment of this invention, a wedge-shaped thread guiding and extracting device is provided preferably by arranging two thread guiding members with their shafts inclined one to the other in the form of a wedge having its apex formed by the hooked portions of the thread-guiding members. The thread guiding members are set preferably horizontal or parallel to the stitched back of the book-pad and have their hooks touching at a common point to form a nose and extending obliquely away from the nose in the form of wings or horns.

If desired, when dealing with chain loop stitches not formed with idle stitches, one guide or extractor shaft only, i. e. that furthest from the stitches to be extracted, is inclined relatively to the longitudinal sides of the book while the other guide or extractor shaft is set parallel thereto.

In another form of the device the head only of the thread extracting device may be wedge-shaped, the body or extension of the device being formed, for instance, by parallel shafts.

The thread extracting device so arranged is reciprocated to engage and guide the threaded loop to be extracted and the nose of the device penetrates the chain loop so that the threads thereof lodge behind the oblique wings or horns of the said thread guiding members and during the return movement of the latter member the threads of the loop are pulled therewith. During the stitching and progression of the subsequent book sections the threads held by the extracting device are pushed along the length thereof and owing to the inclination of the guide shafts the loop is opened to an increasingly wider extent until the interconnecting terminal thread which, meanwhile, has been severed, is drawn out of its suspending loop.

When idle stitches are used in the book-pad and are to be severed, the formation of these stitches may be utilized to time mechanically the actuation of the above described extracting device or devices.

Three forms of a device for carrying the method of this invention into effect, and an operative arrangement of mechanism incorporating the devices will now be described with reference to the appended drawings, in which:

Fig. 1 shows in perspective view one form

of thread extracting device engaging the chain-loop of an idle stitch;

Fig. 2 shows in perspective view another form of thread extracting device engaging the looped interconnecting thread leading from a tight stitch;

Fig. 3 is a detail perspective view of the first form of thread extracting device;

Fig. 3*a* shows the manner in which the wedge-shaped nose of a double hooked thread extracting device enters the loop of a chain loop stitch;

Figs. 4 to 7 illustrate intermediate stages in the engagement of the thread extracting device with the thread to be extracted.

Fig. 8 is a fragmentary perspective view of the stitching end of the book trough, showing the pivotal sheet carrier or stitching saddle and stitching needles;

Fig. 9 is a part sectional side elevational view of one arrangement of mechanism for operating the thread extracting devices;

Figs. 10 and 11 are detail views showing the stages of thread extraction after the severance of a thread forming part of an idle stitch.

Fig. 12 is a similar detail view showing the extraction of a severed looped thread which leads from a tight stitch, and

Fig. 13 is a perspective detail view of a further form of the thread extracting device.

Referring more particularly to Figs. 1 and 2 it will be seen that the operation to be performed by the method of this invention is as follows:—

B represents part of a continuously stitched book-pad and between the adjacent books *a* and *b* of the book-pad the interconnecting thread *x* is severed, e. g. at *x'*. The severed thread, however, still hangs in the chain-loop *y* and the book *a* can be removed from the book-pad B only by the withdrawal of the severed thread *x* through the chain-loop *y* and from around the chain loop *z'*.

One manner of achieving this result according to the method of the present invention is to engage the loop *z* with a thread extracting device E or E' so that during the normal progression of the book-pad the loop *z* is spread out to an increasing extent to effect the automatic withdrawal of the severed thread *x* as desired.

As shown in Fig. 3 in one practical form each thread extracting device E comprises two substantially horizontal hooked shafts 15, 16 mounted at one extremity on a common support and inclined one to the other in the form of a wedge the apex of which is formed by the hooked portions of the said shafts. The shafts 15, 16 are set preferably parallel to the stitched back of the book-pad and have their hooked extremities lightly touching at a common, foremost extending point to form a nose 19.

The hooked extremity of each shaft, both of which are slightly resilient, is formed by upwardly curving the free end of the shaft and then providing at the uppermost point thereof an outwardly and obliquely extending wing or horn 17 or 18.

Means such as hereinafter described are provided for reciprocating the thread extracting device E longitudinally.

Referring to Figs. 8 and 9, means are indicated for producing a book-pad continuously stitched with chain-loop stitches.

The signatures 10 are placed on the pivotal support 12 and thereby brought beneath the stitching needles 13, 13*a* where in known manner and with the aid of additional stitch forming mechanism (not shown) they are stitched with chain-loop stitches and added to the previously stitched portion of the book B.

To the extent to which newly stitched signatures are added to the book-pad B the latter progresses forward, as will be well understood by those skilled in the art, and the thread extracting device or devices E is or are caused to engage the looped interconnecting threads of the terminal stitches of the adjacent books of the book-pad or the idle stitches formed therebetween as shown in Figs 1 and 2.

The manner in which the thread loop formed for example in this manner is engaged by the thread extracting device is shown more clearly in Figs. 3*a* to 7.

When an idle stitch has been formed after the terminal stitch of a book, Fig. 4, the thread looping needle 13 is raised and suspended therefrom is the thread loop *z* extending from which is the interconnecting thread *x* leading to the thread sewing needle 13*a*.

The thread extracting device E is timed to move at this juncture in the direction of the arrow A so that the nose 19 of the device E penetrates the loop *z*, Fig. 3*a*, and passes therethrough as shown in Figs. 3*a* and 5. By this movement, as shown clearly in Fig. 3*a*, the obliquely extending wings or horns 17, 18 press upon the thread limbs of the loop *z* which thereupon open outwardly and then close behind the horns.

The loop *z* is thus trapped or hooked by the horns of the thread extracting device E so that when the latter is retracted in the completion of its reciprocatory movement the thread loop *z*, still held by the hooked needle 13, is drawn forwards intermediate its length as shown in Fig. 6.

In the normal course of stitching the next signature of the book-pad (the first signature of the subsequent book) the hooked needle 13 carries the thread loop *z* downwards to engage the loop *z'* of the next formed stitch.

The downward pull on the thread loop *z*

causes the threads thereof to pass into the V shaped recess formed by the inner sides of the oblique horns 17, 18 and bear upon the upper edge of the nose 19 thereby causing the resilient hooked extremities of the shafts to part slightly so as to permit the passage of the threads. The loop z thus becomes positioned as shown in Fig. 7.

When so positioned the loop z during the forward progression of the book-pad B is moved along the outwardly diverging shafts of the thread extracting device E and thus is spread so that the thead x to be extracted is placed under tension.

At an appropriate instant the thread x is severed at a point intermediate its length, e. g. at x', Fig. 10, and as shown clearly in Figs. 10 and 11 the severed thread x, which is a continuation of one limb of the constantly widening loop z progressing along the thread extracting device E is finally withdrawn from the loop y and passed around the loop z' thus freeing the book a from the adjacent book b of the book-pad B.

The thread x, the extraction of which has been above described, forms part of an idle stitch. When the extraction of an interconnecting thread leading from a tight stitch is desired it is preferable to alter somewhat the form of the thread extracting device.

As shown in Figs. 2 and 12 the thread to be extracted is severed at the point $x2$, i. e. at the cross-over from one book a to the adjacent book b of the connecting thread x extending laterally of and inside the book a to be separated.

When the loop z is engaged by and looped around the thread extracting device, the thread x to be extracted extends from the right-hand side of the loop z as viewed in Fig. 12 while the left-hand limb of the loop z extends to the stationary thread $x3$ which latter forms the loop y.

It is obviously undesirable to exert more than slight tension upon the thread $x3$ and for this reason in dealing with tight stitched books a thread extracting device E′ is used.

The left-hand shaft $16a$ of the device E′ is inset in relation to its hooked extremity and positioned parallel to the axial line of the thread extracting device while the right-hand shaft $15a$ is inclined to the axial line as in the arrangement of the device E.

The thread loop x is engaged by the wedge-shaped hook nose of the device E′ similarly to the manner described in reference to the device E and the loop when thus engaged and progressed along the shafts of the device E′ is spread to the right-hand side only (as shown in Fig. 12).

Thus the thread x is extracted from the loop y with a minimum of tension upon the thread $x3$ which latter is drawn sufficiently merely to tighten the loop y upon the thread $x3$ where the latter emerges from the book a.

In this case the severed thread x will not be withdrawn from around the loop z' during its progress along the thread extracting device E′ as will be clear from Fig. 12. However, the thread x, withdrawn from the loop y and disengaged from the shaft $15a$ of the device E′, will continue to progress along the shaft $16a$ as the book-pad progresses and finally meets the rear face $29a$ of the holder 29 which serves to support the thread extracting device or devices E or E′. Obviously at this point the thread x looped around the shaft $16a$ can no longer progress forward although the book-pad B continues its progression.

The book-pad during its continued movement draws the thread x around a guideway constituted by the face $29a$ of the holder 29 and the rearwardly extending shaft $16a$ thereby first extracting the severed thread end from around the loop z' and finally from around the shaft $16a$ of the thread extracting device E′ thus freeing the book a from the adjacent book b of the book-pad B.

From the foregoing description it will be clear that although it is preferable to incline the shafts of the thread extracting devices in a wedge-shaped formation such formation of the body of the thread extracting device is not essential. If the shafts 15, 16 are set parallel behind a wedge-shaped loop-engaging head as shown in Fig. 13, the device E2 thus provided can be utilized to carry into effect the method of thread extraction according to this invention since when the loop z of an idle stitch or tight stitch is progressed along the parallel shafts it will be opened out to a limited extent and eventually abut the face $29a$ of the holder 29 and during the continued progress of the bookpad the severed thread x will be withdrawn as above described.

It is desirable to carry out the method of this invention in a fully automatic manner and one arrangement of mechanism for this purpose is shown in Fig. 9.

The pivotal stitching saddle 12 is provided adjacent its apex with a slotted recess 23 which latter when in the stitching position and not covered by an opened signature is adapted to receive the downwardly extending arm 24 of a bell-crank lever which latter is mounted on a rotatable shaft 26 extending above and transversely of the stitching position of the pivotal stitching saddle 12 and parallel to a needle guide 33 which forms part of the known thread stitching means. The second arm 25 of the bell-crank lever extends inwardly towards the machine and has its free extremity downwardly curved to form a nose $25a$.

During the stitching of each book signa-

ture the arm 24 rests upon the signature since by reason of the latter it is prevented from entering the slot 23.

A horizontal shaft or shafts 34 set at right angles to the needle guide 33 and supported approximately at the same level in the machine frame (not shown) has or have slidably mounted thereon a sleeve or sleeves 35 to the underpart of which is attached a holder bar 29 set parallel to the needle bar 33. One or more thread extracting devices E or E2 are firmly secured to the holder bar 29 to project at right angles thereto with their free hooked extremities in alignment with and normally slightly in front of the thread loops suspended from the appropriate hooked looping needles 13.

A rocking arm 32, pivoted intermediate its length in the machine frame (not shown) on a transverse stub shaft 32*a*, is pivotally connected at its upper extremity to the sleeve 35 and carries at its lower extremity a cam follower which is urged by the helical tension spring 36 to engage the cam 37 (the latter also being mounted in the machine frame).

A locking lever 28 pivoted at one extremity in the rear of the holder bar 29 extends forwardly beneath the said holder bar and nose 25*a* of the crank arm 25 as shown in full lines in Fig. 9. Intermediate the length of the lever 28 an upwardly extending lug 28*a* is provided in the proper position to engage the face 29*a* of the holder bar 29. A helical tension spring 27 anchored at one extremity to the needle bar 33 and secured at its further extremity to the lever 28 serves to hold the lug 28*a* in engagement with the holder bar 29.

Fixedly mounted on the shaft 26 in addition to the bell-crank lever 24, 25 and offset to one side of the saddle 12 is a curved, downwardly extending finger 30 which in the absence of a signature on the saddle 12 assumes an approximately downward position by reason of the natural position of balance of the shaft 26. When so positioned its lower extremity enters the arcuate path of travel of an abutment or cam member 31 securely mounted on the stitching saddle 12.

During the stitching of a continuously stitched book-pad provided with idle stitches interposed between the adjacent books of the pad the operation of the above described mechanism is as follows:

Assuming that the foremost book *a* of the book-pad B is completed by the stitching of the book-signature *a'* shown on the stitching saddle 12 in Fig. 9 the following stitch or row of stitches will be an idle stitch or stitches and during this stitch forming operation the pivotal sheet carrier 12 will swing forward into the stitching position without carrying a signature thereon. Consequently the arm 24, under the weight of the bell-crank lever will drop into the recess 23 thus rocking the arm 25 into contact with the spring-held locking lever 28 as shown in chain-dotted lines in Fig. 9. The movement of the bell-crank lever 24, 25 rotates the shaft 26 thus rocking the finger 30 into the path of the abutment 31 as above described.

When the idle stitch is formed, as shown in Fig. 4, the stitching saddle 12 swings away from the book-pad and in this movement the abutment 31 encounters the downwardly extending finger 30 which is rocked in the direction of the arrow C until its lower extremity lifts clear of the abutment 31. This additional positively urged rocking movement of the shaft 26 causes the nose 25*a* of the lever 25 to press the lever 28 downwards against the pull of the spring 27. The lug 28*a* is so tripped out of the path of the holder bar 29 and under the urge of the spring 36, the slide member 35, holder bar 29 and thread extracting devices E or E2 are moved rearward to the extent permitted by the throw of the cam 37.

In the rearward movement of the thread extracting devices E or E2 the thread loops *x* are engaged as above described and immediately this engagement is effected the throw of the cam 37 causes the device E or E2 and threads held thereby to be retracted.

The devices E or E2 are again locked in the retracted position by means of the spring-urged engagement of the lug 28*a* with the face 29*a* of the bar 29 until release consequent upon the formation of the next idle stitch or row of such stitches.

Instead of the arrangement above described for automatically controlling the reciprocatory movement of the thread extracting devices, a counting mechanism or the like driven from the machine drive may be utilized or alternatively the attendant may control the impulse of the actuating mechanism.

Such controlling devices as those last mentioned will be necessary if an idle stitch is not present in the book-pad in which case the thread extracting device E' may be used with advantage.

The sequence of thread severance and extraction is in no way limited to that above described while any suitable form of thread extracting device or actuating mechanism therefor may by employed without departure from the spirit of the invention as defined in the appended claims.

What I claim is:—

1. A method of extracting the severed interconnecting threads of a stitched book-pad from the loops of the adjacent stitches,

which includes positively engaging a looped thread length with a thread-guiding device and thereby guiding the thread length so that by the normal progression of the stitched book-pad the thread length after the severance thereof is caused to withdraw from the adjacent interdepending thread loop.

2. A method of extracting the severed interconnecting threads of a stitched book-pad from the loops of the adjacent stitches, which includes positively engaging a thread length with a thread guiding device and causing the thread length to loop around said thread guiding device so that by the normal progression of the stitched book-pad the thread loop after the severance thereof is caused to travel around the thread guiding device and is thus extracted from the interdepending thread loop.

3. A method of extracting the severed interconnecting threads of a stitched book-pad from the loops of the adjacent stitches, which includes positively engaging with a wedge-shaped thread guiding and extracting device the thread length to be extracted and causing the thread length to loop around said thread extracting device so that by the subsequent progression of the looped thread along said wedge-shaped extracting device the thread loop is distended and the thread length when severed is withdrawn from the interdepending thread loop.

4. Means for extracting the severed interconnecting threads of a stitched book-pad from the loops of the adjacent stitches, including a thread guiding device, means for causing said device to enter and distend a thread loop, and means for retaining said thread loop upon said device so that the normal progression of the book-pad causes the thread loop after the severance thereof to move relatively to said device and withdraw the severed thread length from the interdepending thread loop.

5. Means for extracting the severed interconnecting threads of a stitched book-pad from the loops of the adjacent stitches, including a thread guiding and extracting device comprising thread engaging members arranged to provide a wedge-shaped nose adapted to enter a thread loop and segregate the limbs thereof, and means for retaining said thread limbs in engagement with said thread engaging members so that during the normal progression of the book-pad the thread loop so engaged is distended and when severed passes around said device to withdraw from an interdepending thread loop.

6. A thread guiding and extracting device comprising thread engaging members arranged in wedge-shaped formation, means for engaging a looped thread length upon the converging extremities of said members, and means for retaining said looped thread length upon said thread engaging members so that during the normal progression of the stitched book-pad the looped thread length so engaged is distended and when severed passes around said members to withdraw from an interdepending thread loop.

7. Means for extracting the severed interconnecting threads of a stitched book-pad from the loops of the adjacent stitches, including a thread guiding and extracting device which comprises two thread engaging members one of which is arranged substantially parallel to the vertical plane of the book-pad while the other diverges therefrom at an angle, means for engaging upon the converging extremities of said members a looped thread length, and means for retaining said looped thread length upon said members so that by the normal progression of the stitched book-pad the looped thread length is caused to pass around said members to withdraw from the interdepending thread loop.

8. Means for extracting the severed interconnecting threads of a stitched book-pad from the loops of the adjacent stitches, including a thread guiding and extracting device which comprises two thread engaging members having their outer lateral edges substantially parallel and arranged longitudinally of the book-pad, a wedge-shaped nose provided at one extremity of the associated thread engaging members and split to permit a looped thread length engaged thereby to pass around said members, and means for retaining said looped thread length in engagement with said members so that during the normal progression of the stitched book-pad the looped thread length when severed is caused to travel around said members to withdraw from the interdepending thread loop.

9. A thread guiding and extracting device comprising a carrier extending transversely of a stitched book-pad, two relatively inclined shafts secured at one extremity to said carrier and having their free extremities converging to form a wedge-shaped nose, means for moving said device to enable the nose thereof to engage a looped thread length leading from said book-pad, and projections on the converging extremities of said shafts to retain thereon the looped thread length.

10. A thread guiding and extracting device comprising a carrier, two shafts secured to said carrier and extending longitudinally of a moving, stitched book-pad, said shafts being relatively inclined and having their free extremities upturned and converging to form a nose, obliquely set horns projecting from said nose, and means for moving said shafts so that the nose thereof engages a looped thread length leading from said

book-pad the limbs of which thread loop become lodged behind said horns and thereby retained on said shafts until progressed along the latter.

11. A thread guiding and extracting device comprising a carrier, two shafts secured to said carrier and extending longitudinally of a moving, stitched book-pad, one of said shafts being parallel to the direction of movement of said book-pad and the other inclined thereto so that the free extremities of said shafts converge to form a wedge-shaped nose, and thread retaining horns obliquely projecting from the converging extremities of said shafts.

12. A thread guiding and extracting device comprising a carrier, two shafts secured to said carrier and extending longitudinally of a moving stitched book-pad parallel to the direction of movement thereof, both shafts having their free extremities inwardly and upwardly inclined to form a nose, and thread retaining horns obliquely projecting from said free extremities of the shafts.

13. A thread guiding and extracting device comprising a carrier, two resilient shafts secured at one extremity to said carrier and having their free extremities converging and in mutual contact to form a wedge-shaped nose, and thread retaining horns projecting from said converging shaft-extremities.

14. Means for extracting the severed interconnecting threads of a stitched book-pad from the loops of the adjacent stitches, including a reciprocatory carrier, two resilient shafts secured at one extremity to said carrier and having their free extremities converging to form a nose, thread retaining horns projecting from said converging shaft extremities, means for imparting reciprocatory movement to said carrier, and means for timing said movement in relation to the book stitching operations.

15. Means for extracting the severed interconnecting threads of a stitched book-pad from the loops of the adjacent stitches, including a reciprocatory carrier, two resilient shafts secured at one extremity to said carrier and having their free extremities converging and in mutual contact to form a wedge-shaped nose, thread retaining horns projecting obliquely from said contacting shaft extremities, means for imparting movement to said carrier so that the nose formed by said thread engaging members engages a thread loop the limbs of which are parted, engaged by said horns and pass between the contacting shaft extremities, and means for timing the movement of said carrier in accordance with the stitching of the book-pad.

16. In a stitching machine adapted to produce a continuously stitched book-pad, a sheet stitching support, thread stitching needles associated with said stitching support, a carrier arranged to move longitudinally of the book-pad as the latter is progressed from said stitching needles, two thread guiding and extracting shafts secured at one extremity to said carrier and converging to contact at their free extremities to form a wedge-shaped nose which is positioned above said book-pad, means for imparting movement to said carrier so that the nose of said thread guiding members is interposed between the limbs of a thread loop extending from said book-pad to said stitching needles, and means for timing the operative movement of said thread guiding members in accordance with the formation of the book-pad.

17. In a stitching machine adapted to produce a continuously stitched book-pad, a sheet stitching support, thread stitching needles associated with said stitching support, a horizontal needle guide extending transversely of the machine, supporting shafts secured at one extremity to said needle guide and extending longitudinally of said machine, sleeve members slidaby mounted on said supporting shafts, a transverse carrier bar secured to said sleeve members, at least one pair of thread engaging shafts, each pair being secured at one extremity to said carrier bar and converging at their free extremities to form a wedge-shaped nose which is positioned above said book-pad, a driven cam disc mounted in said machine frame, a rocking shaft pivoted intermediate its length and linked at one extremity to one of said sleeves, said shaft having at its further extremity a cam follower adapted to engage said cam whereby reciprocatory movement is imparted to said carrier bar and thread guiding members so that the nose of the latter is caused to enter a thread loop extending from the book-pad to a stitching needle, and means for timing the movement of said thread engaging members relatively to the formation of said book-pad.

18. In a stitching machine adapted to produce a continuously stitched book-pad, a pivotal stitching saddle having its apex slotted, thread stitching needles associated with said stitching saddle, a carrier bar arranged to move longitudinally of the book-pad as the latter is progressed from said stitching needles, thread guiding and extracting members secured to said carrier bar and adapted when moved to engage the loop of an idle stitch extending from the book-pad and held by a stitching needle, means for imparting reciprocatory movement to said carrier bar and said thread guiding members for the purpose set forth, means for blocking said movement, means for tripping said blocking means to release to

movement said carrier bar, and means for actuating said tripping means by the movement of said stitching saddle during the formation of said idle stitch.

19. Thread guiding and extracting means as claimed in claim 18, in which the means for timing and controlling the movement of the carrier bar comprise a pivotal locking lever having a shoulder adapted to engage and hold from movement said carrier bar, a freely rotatable shaft positioned adjacent the stitching position of the stitching saddle, a bell crank lever fixedly mounted on said shaft so that one arm thereof registers with a slot in the apex of said stitching saddle and the other arm is adapted to engage said pivotal locking lever, an abutment carried by said stitching saddle, a finger fixedly mounted upon said shaft and adapted to move into the path of said abutment when permitted to do so by the entry of the bell crank arm into the slot in said stitching saddle and for the purpose set forth.

In testimony whereof I affix my signature.

OSCAR KLEINSCHMIT.