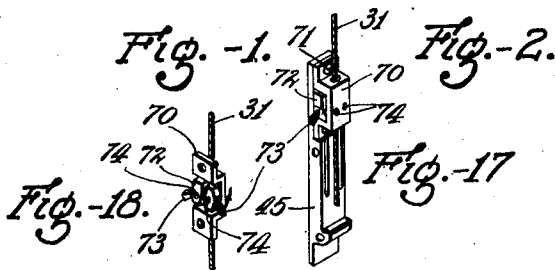
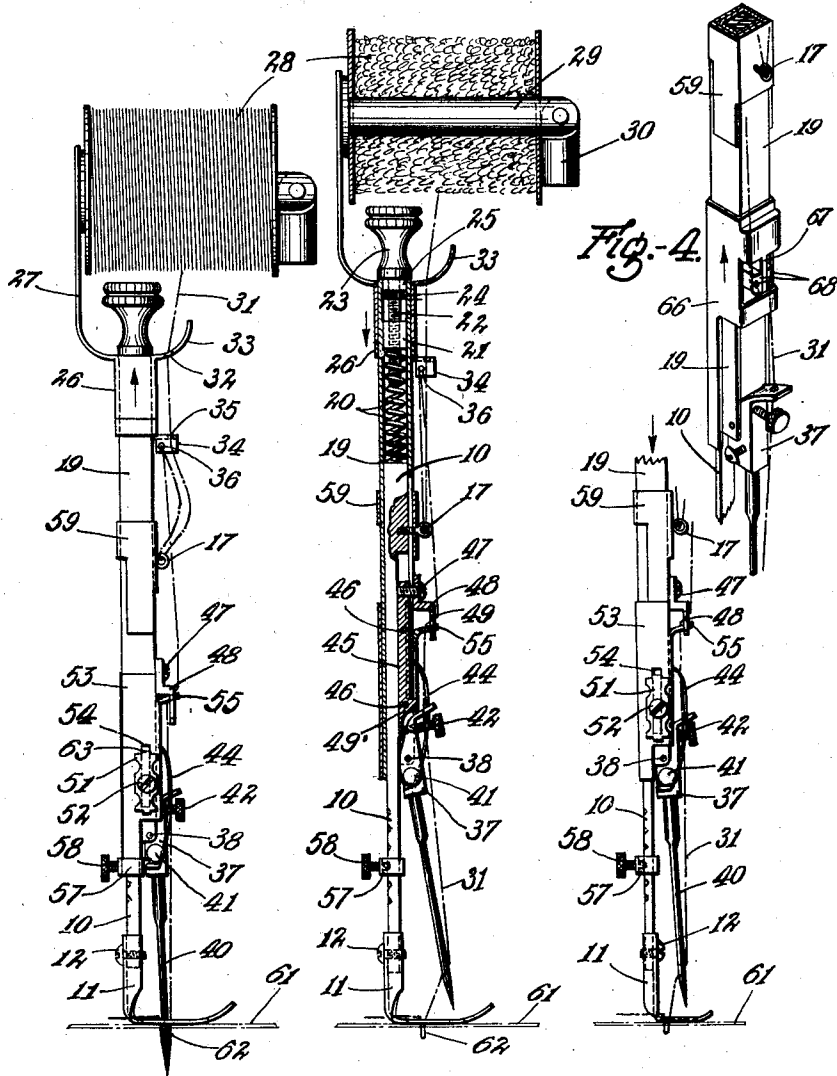


M. BASSISTY.
 AUTOMATIC HAND EMBROIDERING MACHINE.
 APPLICATION FILED JUNE 18, 1920.

1,389,115.

Patented Aug. 30, 1921.

2 SHEETS—SHEET 1.



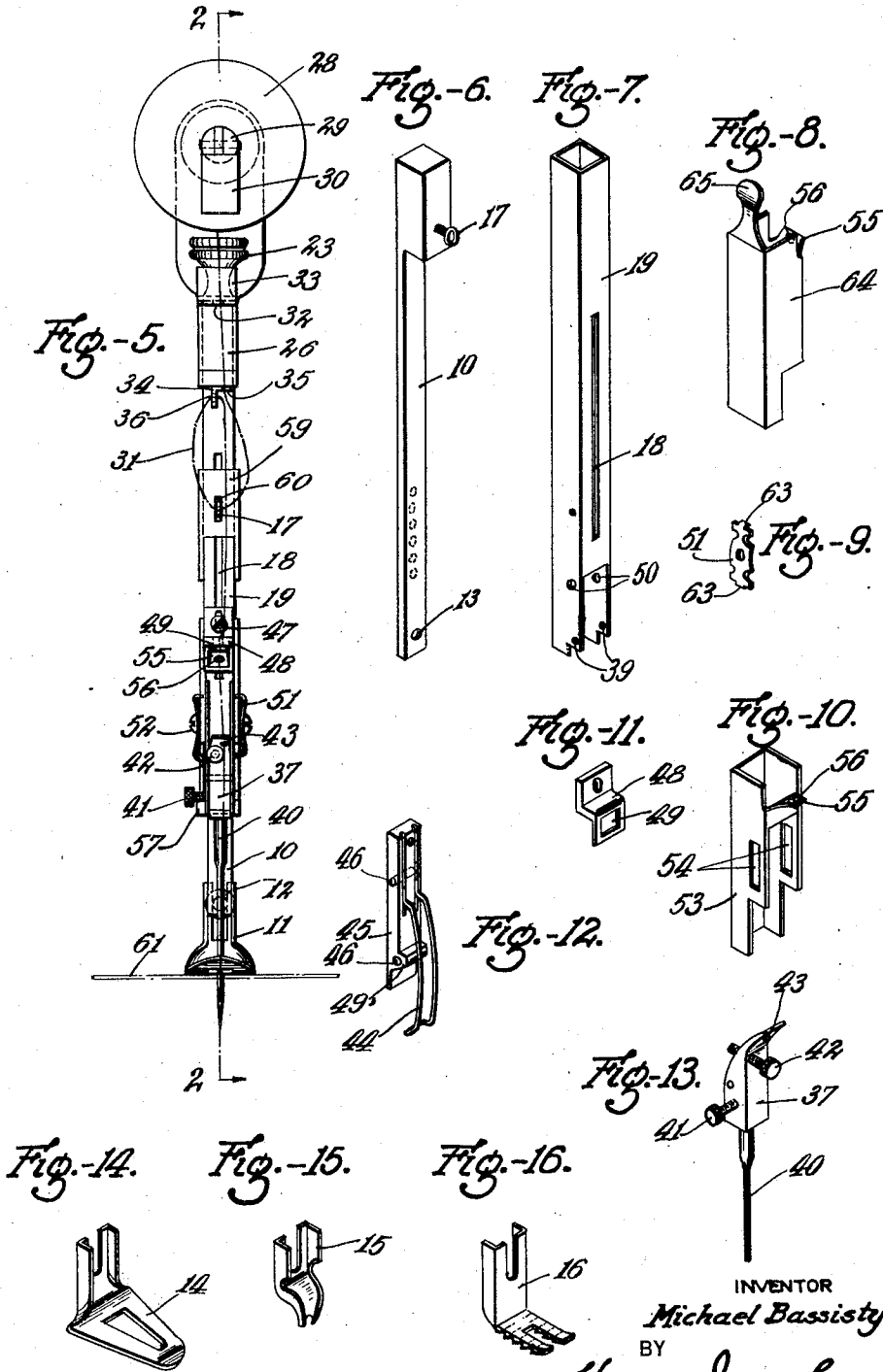
INVENTOR
 Michael Bassisty
 BY
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INVENTOR

Michael Bassisty

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 ATTORNEY

UNITED STATES PATENT OFFICE.

MICHAEL BASSISTY, OF NEW YORK, N. Y.

AUTOMATIC HAND-EMBROIDERING MACHINE.

1,389,115.

Specification of Letters Patent.

Patented Aug. 30, 1921.

Application filed June 18, 1920. Serial No. 389,813.

To all whom it may concern:

Be it known that I, MICHAEL BASSISTY, citizen of Russia, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Automatic Hand-Embroidering Machines, of which the following is a specification.

This invention relates to hand embroidering machines, and especially to that type which, in addition to being operative to form a series of loops in a piece of fabric, is also designed to advance automatically under guidance, one step after each stitch. It is usual in machines of this kind, to provide a needle which is arranged to swing about a point near its upper end, in order that said needle, when depressed, may be made to enter the fabric at an angle, whereby the point of the needle enters the fabric considerably in advance of the remainder of the machine. Before the withdrawal of the needle from the fabric, the remainder of the machine is brought quite close to said needle by the action of suitable springs, without appreciable manipulation on the part of the operator, the entire machine thereby being given a step by step motion when guided along the pattern on the fabric. The operation of the machines of this description is usually effected by vertically reciprocating the needle. This necessitates the use of both hands of the operator, one hand to move the needle up and down, and the other to hold the machine down on the upward movement of the needle and of the mechanism connected therewith.

One of the objects of this invention is to provide means for raising the needle out of the fabric automatically, whereby the machine may be operated with one hand only.

Another object of this invention is to provide means for readily adjusting the horizontal length of the stitch and for adjusting the size of the loop formed by the machine.

A further object of this invention is to provide means for locking the thread against movement in the lowermost position of the needle thereby relieving the loop formed in the fabric from any stress when the needle is lifted out.

A still further object of this invention is to provide a slackened portion of the thread between the source of supply and the needle so that a loop of thread may be formed

without any stress being exerted on either the loop or the remainder of the thread.

Further objects will appear from the description which follows, reference being had to the accompanying drawings, in which,

Figure 1 is a side view of my invention as it appears when the needle is in its lowermost position. Fig. 2 is a vertical section on line 2—2 of Fig. 5. Fig. 3 is a side view of the lower part of my machine as it appears when the adjustment is made to produce a short stitch. Fig. 4 is a perspective view of a modified form of the means for locking the thread against movement. Fig. 5 is a front view of Fig. 1. Fig. 6 is a perspective view of the presser foot bar. Fig. 7 is a similar view of the reciprocating frame. Fig. 8 is a perspective view of a modified form of band for carrying the lower thread locking member. Fig. 9 is a perspective view of the flat spring engaging the lower thread locking member, and Fig. 10 is a similar view of the preferred form of said member. Fig. 11 is a perspective view of the upper thread locking member. Fig. 12 is a similar view of the needle bar spring and of the carrier therefor. Fig. 13 is a perspective view of the needle bar and of the needle carried thereby. Figs. 14, 15 and 16 are perspective views of various forms of presser feet adapted to be used in connection with my improved machine. Fig. 17 is a perspective view of a modified form of thread locking means and Fig. 18 is a perspective view of the back of the same.

In the practical embodiment of my invention, the presser foot bar 10 carries at the lower end thereof, presser foot 11, which is removably attached thereto by means of screw 12 passing through threaded hole 13 of bar 10. Presser foot 14 (Fig. 14) for large stitches, or foot 15 for small stitches, or foot 16 roughened on its under side may readily be substituted for foot 11 when desired. The upper part of bar 10 carries eye 17 therein, said eye passing through slot 18 of the hollow main frame 19, which incloses the upper end of bar 10. A spring 20 designed to sustain compression is positioned inside of frame 19, one end of said spring resting on the uppermost end of bar 10, while the other end abuts against movable nut 21, which is capable of adjustment inside of frame 19 by means of screw 22, on which is a suitable collar 24 for preventing said screw from lifting out of frame 19

when screw handle 23, resting on the closed end 25 of said frame, is turned. A band 26 is secured to the upper end of frame 19, and has bracket 27 thereon, for carrying the spool 28 of thread, on shaft 29, an arm 30 being hinged to the end of said shaft for holding said spool in place. For providing a guide for the thread 31, an opening 32 is made in the projection 33 outstanding from band 26. An angular piece 34 projects from the lower end of said band and has openings 35 and 36 therein, through which said thread 31 is passed.

At the lower end of frame 19, needle bar 37 is pivotally mounted by means of pin 38 passing through the holes 39 of said frame. A needle 40 having the usual eye at the lower end thereof, is removably held in said needle bar by means of a set screw 41. A second set screw 42 is provided for adjusting the limit of the rotary movement of the needle bar and needle about pin 38, said screw being preferably offset from the center to allow the passage of the thread through opening 43 at the upper extremity of said bar. Wire spring 44 engages the lower part of said bar 37, the upper end of said spring being held in spring carrier 45, which is suitably held to frame 19 by pins 46. Attached by a screw 47 to the upper end of said carrier 45 is the upper thread locking member 48, having a rectangular opening 49 therein, said screw 47 passing through slot 18 of frame 19. Flat springs 51, held by screws 52 which pass into projection 49' of carrier 45 through slots 54, serve to hold stop member 53 slidably on frame 19, a lower thread locking member 55 having thread opening 56 therein, being formed from said stop member and passing through the opening 49 of member 48. An adjustable stop gage 57 held to presser foot bar 10 by screw 58 is provided to engage the lowermost edge of member 53 to limit the downward movement of frame 19 and needle 40, while loose band 59 having a slot 60 therein through which eye 17 is passed, serves to limit the upward movement of said frame and needle, by engaging the uppermost edge of member 53.

Lower locking member 64 (Fig. 8) carrying spring 65 at the upper end thereof, may be substituted for member 53, springs 51 and screws 52, in my thread locking device, said member 64 acting in the same manner as member 53 acts.

A modified form of thread locking means is shown in Fig. 4, and comprises slidable band 66 mounted in frame 19, said band being provided with the tongue 67 which is arranged to enter the space between lugs 68 on frame 19, the thread hole in said tongue 67 being normally above lugs 68 to allow free passage of the thread therethrough, the thread being locked when the parts assume the position illustrated in Fig. 4 which oc-

curs when member 66 strikes stop 57 on the downward movement of the frame 19. On the upward movement, when the member 66 strikes band 59, it is held stationary while frame 19 continues to move up, lugs 68 moving to the upper end of tongue 67, and the thread freed.

Another form of locking means (Figs. 17 and 18) is provided for use with a comparatively coarse thread. In this modification, the upper end of the carrier 45 is made thin to allow the attachment thereto of cam frame 70 as by screws 71. Small cams 72 pivoted to cam frame 70 at 74 have projecting ears 73 thereon which pass through suitable slots in frame 19.

On the downward movement of frame 19, cams 72 are rotated to grip and lock the thread when ears 73 strike the upper edge of band member 53, locking members 55 and 48 being omitted in this form of construction. On the upward movement of said frame 19, the thread is released when said ears 73 strike the lowermost edge of band 59.

Having described the arrangement and to some extent the functions of the parts, I will now proceed to describe the operation of my machine.

The thread 31 is passed through opening 32 of projection 33 and hole 35 of piece 34, then through eye 17 back to hole 36 of piece 34, then through opening 49 of member 48 and opening 56 of member 55, then through opening 43 of needle bar 37, and lastly through the eye of needle 40, after which the machine is ready for operation.

To manipulate the machine with one hand, one finger is placed on handle 23, while band 59 is grasped with the remaining fingers of the hand, the parts being in the position shown in Fig. 2 in which the descent of the needle is about to commence. Downward pressure on handle 23 forces frame 19 and the parts carried thereby downwardly against the action of spring 20, the needle 40 entering the fabric 61, which has previously been stretched on a suitable frame in the usual manner, and a loop 62 formed. On the downward movement of frame 19, part of the thread on spool 28 is withdrawn by member 34, while that portion of the thread 31 between eye 17 and piece 34 is slackened so that the thread necessary to form loop 62 is readily withdrawn from the slack portion without any appreciable stress being put on said thread. The needle on its entrance into the fabric tends to straighten out about pivot 38 against the action of spring 44, thereby pulling presser foot 11 over close to said needle and causing said foot to make a step forward.

Ordinarily, the downward pressure on frame 19 is transmitted through member 45, screws 52 and springs 51 to member 53 to cause said member to move with said frame,

but when the needle reaches its lowermost position, that is, when the lowermost edge of member 53 strikes gage stop 57, springs 51 are not strong enough to hold the parts im-
 5 movably together and frame 19 and the parts rigidly connected thereto move downwardly a slight distance while member 53 is kept stationary by stop 57 until the bent end 63 of spring 51 reaches the lower end of slot 54,
 10 at which time all further downward movement is arrested.

The above described slight relative movement of member 53 and frame 19 is sufficient to cause upper locking member 48
 15 to engage lower locking member 55 whereby the thread is locked between them. When operator's finger is removed from handle 23, spring 20, which has been compressed on the downward movement of the frame, acts to raise said frame and the needle at-
 20 tached thereto. Locking members 48 and 55 are separated near the end of the upward movement and the thread released, when the upper end of member 53 strikes the lower end of band 59, piece 34 moving
 25 along the thread 31 in readiness to feed the thread when the next downward movement begins. At the same time, the needle is withdrawn from the fabric and when
 30 the needle is entirely withdrawn, spring 44 acts to swing needle bar 37 about pivot 38, to the position shown in Fig. 2, the amount of swing being limited by the contact of the end of screw 42 with member 45. With-
 35 drawal of the needle shortens loop 62 to the predetermined size (Figs. 2 and 3), adjustment of the length of said loop being obtained by moving gage stop 17 along bar 10. Adjustment of the length of the stitch,
 40 that is the distance between the points where the needle enters the fabric, is obtained by the adjustment of screw 42.

I claim:

1. In a hand embroidering machine, a
 45 hollow frame, a needle bar pivotally mounted in said frame, a needle carried by said bar, a presser foot bar inserted in said frame, and means interposed between the upper end of said presser foot bar and the
 50 upper end of said frame for automatically raising said frame to its uppermost position after said frame has been manually depressed.

2. In a hand embroidering machine, a hol-
 55 low elongated frame, a presser foot bar slidable therein, a needle carried by the lower end of the frame, a sleeve on said frame having frictional sliding engagement therewith, a pair of eyes carried respectively
 60 by said frame and sleeve through which the thread is adapted to be passed, said eyes presenting elements adapted to engage and lock the thread, and a pair of abut-
 65 ment members located on said presser foot bar one above and one below the said sleeve

and adapted to engage said sleeve upon movement of said presser foot bar in the frame in opposite directions to alternately move the said engaging elements of the said eyes toward and away from one another. 70

3. In a hand embroidering machine, a hol-
 low elongated frame, a presser foot bar slidable therein, a needle carried by the lower end of the frame, a sleeve on said frame having frictional sliding engagement
 75 therewith, a pair of eyes carried respectively by said frame and sleeve through which the thread is adapted to be passed, said eyes presenting elements adapted to engage and lock the thread, and a pair of abut-
 80 ment members located on said presser foot bar one above and one below the said sleeve and adapted to engage said sleeve upon movement of said presser foot bar in the frame in opposite directions to alternately
 85 move the said engaging elements of the said eyes toward and away from one another, a second pair of eyes carried by said bar and frame through which said thread is looped, said eyes being adapted to move toward one
 90 another as the frame descends, for the purpose set forth.

4. In a hand embroidering machine, a hol-
 low elongated frame, a presser foot bar slidable therein, a needle carried by the
 95 lower end of the frame, a sleeve on said frame having frictional sliding engagement therewith, a pair of eyes carried respectively by said frame and sleeve through which the thread is adapted to be passed, said eyes
 100 presenting elements adapted to engage and lock the thread, and a pair of abutment members located on said presser foot bar one above and one below the said sleeve and adapted to engage said sleeve upon
 105 movement of said presser foot bar in the frame in opposite directions to alternately move the said engaging elements of the said eyes toward and away from one another, said frame being longitudinally slotted on
 110 one side, the abutment member above said eyes consisting of a sleeve surrounding said frame, said presser foot bar having a member projecting through the slot in the frame to unite it with the said sleeve. 115

5. In a hand embroidering machine, a frame, means pivoted on said frame for making thread loops in a piece of fabric, on the reciprocation of said frame, a thread carried by said frame and by said loop forming means, means for slackening a portion of said thread during the formation of a loop for relieving said thread from stress, and means for automatically bringing said frame back to its initial position after it has
 125 been operated to form a loop.

6. In a hand embroidering machine, a frame, means carried by said frame for forming thread loops in a piece of fabric on the reciprocation of said frame, said means 130

including a needle, a source of thread supply, a thread from said source carried by said frame and said loop forming means, means for slackening a portion of said thread
 5 between said source and said loop forming means during the formation of a loop, means for locking said thread against movement relatively to the needle after the formation of one loop and before the formation of the
 10 next loop, and means for automatically bringing said frame back to its initial position after it has been operated to form a loop.

7. In a hand embroidering machine, a hollow frame closed at its upper end, a presser
 15 foot bar slidably inserted in said frame, a spring interposed between the upper end of said bar and the upper end of said frame for automatically raising said frame to its uppermost position after said frame has been
 20 manually depressed, means carried by said frame for making loops in a piece of fabric on the reciprocation of said frame, said means including a needle, a source of thread supply, a thread from said source carried by
 25 said frame and said loop forming means, means for slackening a portion of said thread between said source of supply and said loop forming means during the formation of a loop, and means for locking said
 30 thread against movement relatively to the needle after the formation of one loop and before the formation of the next loop.

8. In a hand embroidering machine, a hollow frame closed at its upper end, a presser
 35 foot bar slidably inserted in said frame, a spring arranged between said frame and said presser foot bar for raising said frame to its uppermost position after said frame has been manually depressed, and means for
 40 forming loops in a piece of fabric, comprising a needle bar pivotally mounted on the lower end of said frame, an adjusting screw on said needle bar for limiting the swing

of said needle bar, a needle removably held in said needle bar and a spring for swinging
 45 said needle forward after it has been withdrawn from the fabric.

9. In a hand embroidering machine, a hollow frame closed at its upper end, a presser
 50 foot bar slidably inserted in said frame, a spring arranged between said bar and the upper end of frame, means for forming thread loops in a piece of fabric comprising a needle bar pivoted on the lower end of
 55 said frame, an adjusting screw on said needle bar for limiting the swing of said needle bar, a needle removably held in said needle bar and a spring for swinging said needle forward after it has been withdrawn from
 60 the fabric, a source of thread supply, a thread from said source carried by said frame and said loop forming means, means for slackening a portion of said thread between said source and said loop forming
 65 means during the formation of a loop, and means for locking said thread against movement relative to the needle bar after the formation of one loop and before the formation of the next loop.

10. In a hand embroidering machine, a
 70 slotted frame, means carried by said frame for forming loops in a piece of fabric, a presser foot bar inserted in said frame, a source of thread supply, a band on the upper
 75 end of said frame having a thread opening therein, a thread holding piece having two thread openings therein projecting from said band and an eye in said presser foot bar projecting through the slot in said frame,
 80 the thread being passed through the openings above-mentioned in such a manner as to provide a slackened portion in the thread on the downward movement of said frame.

In testimony whereof I have affixed my signature this 12th day of June, 1920.

MICHAEL BASSISTY.