

No. 875,604.

PATENTED DEC. 31, 1907.

W. N. PARKES.  
ORNAMENTAL STITCH SEWING MACHINE.

APPLICATION FILED JAN. 23, 1902.

3 SHEETS—SHEET 1.

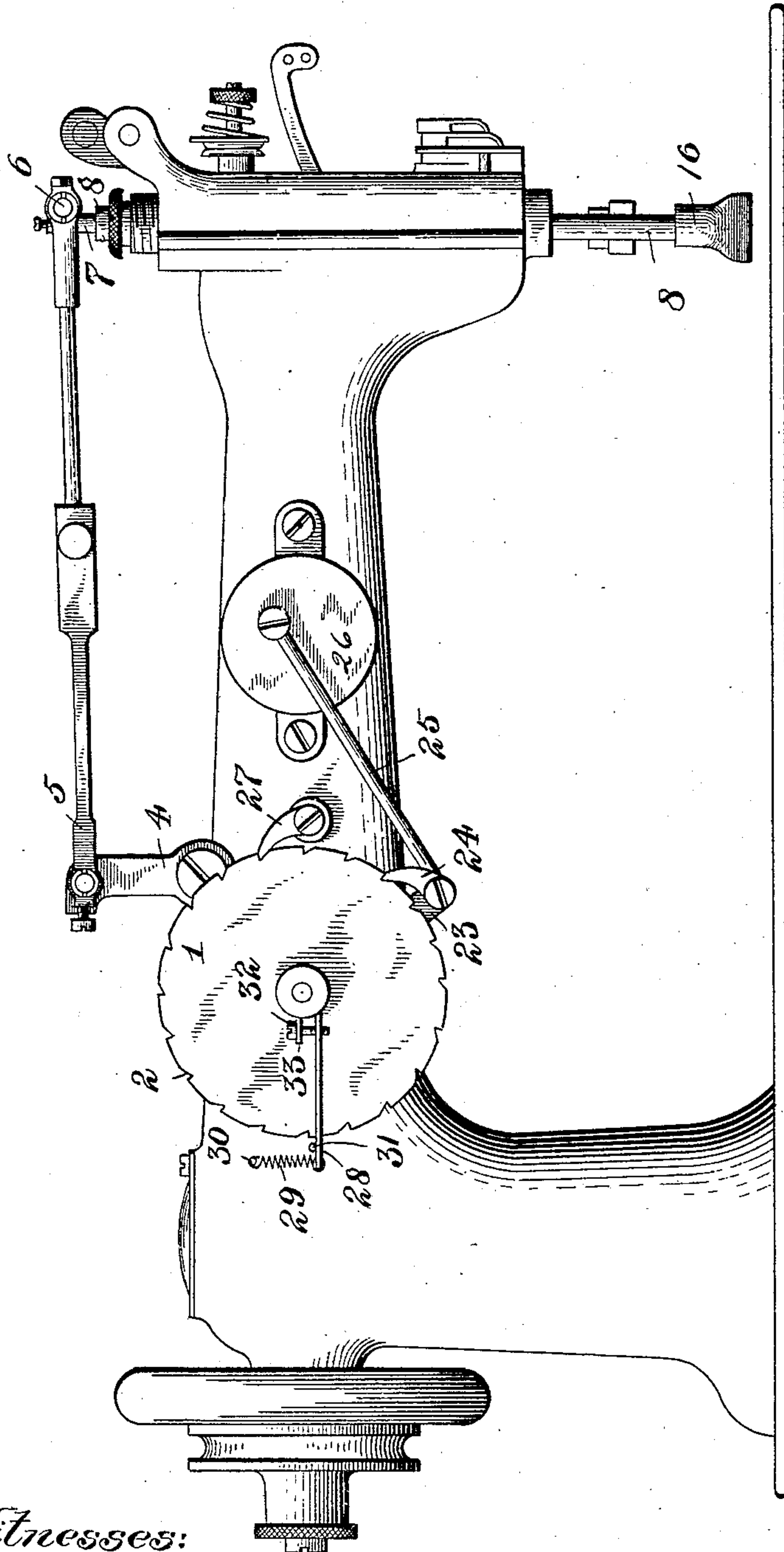


Fig. 1.

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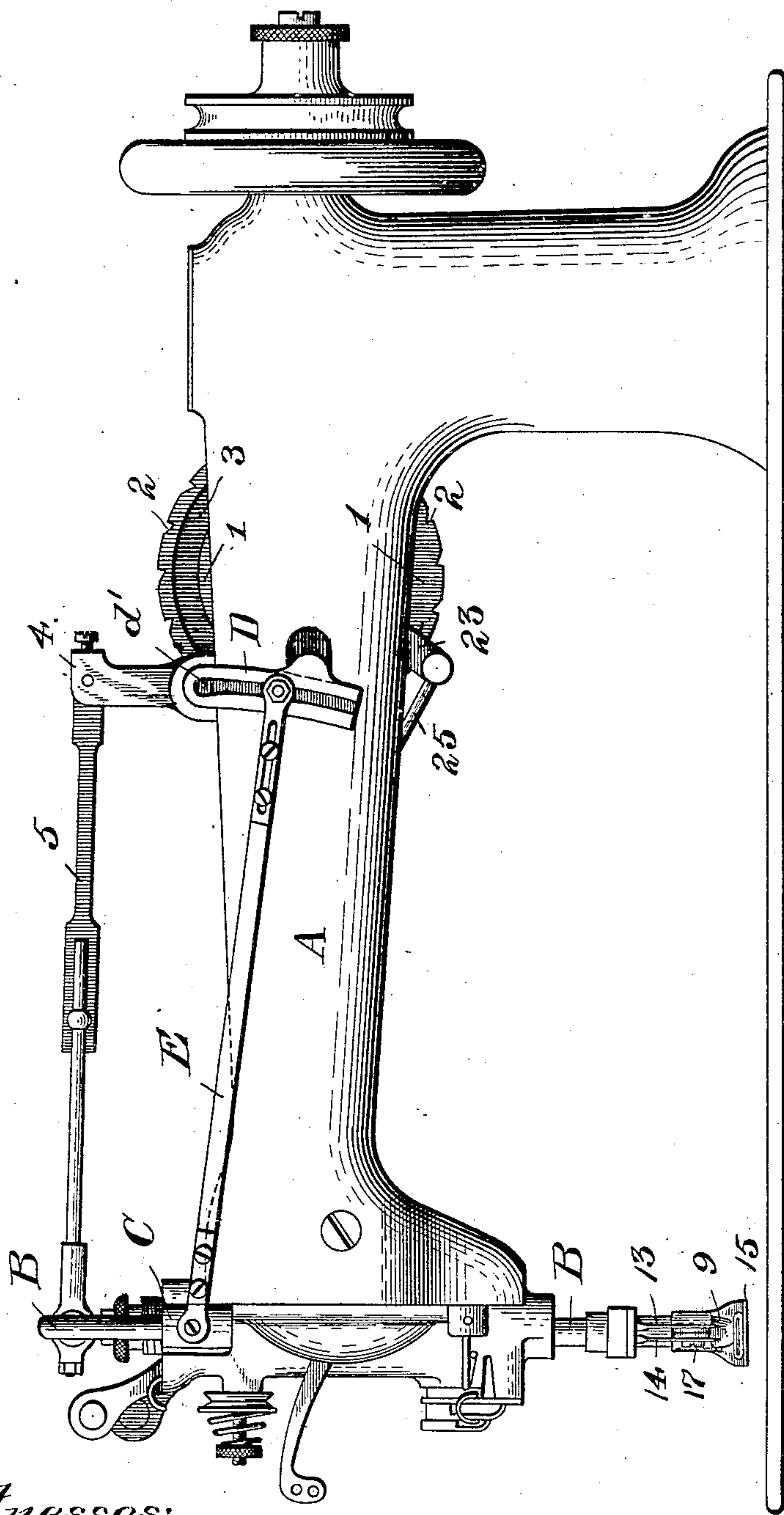


Fig. 2-

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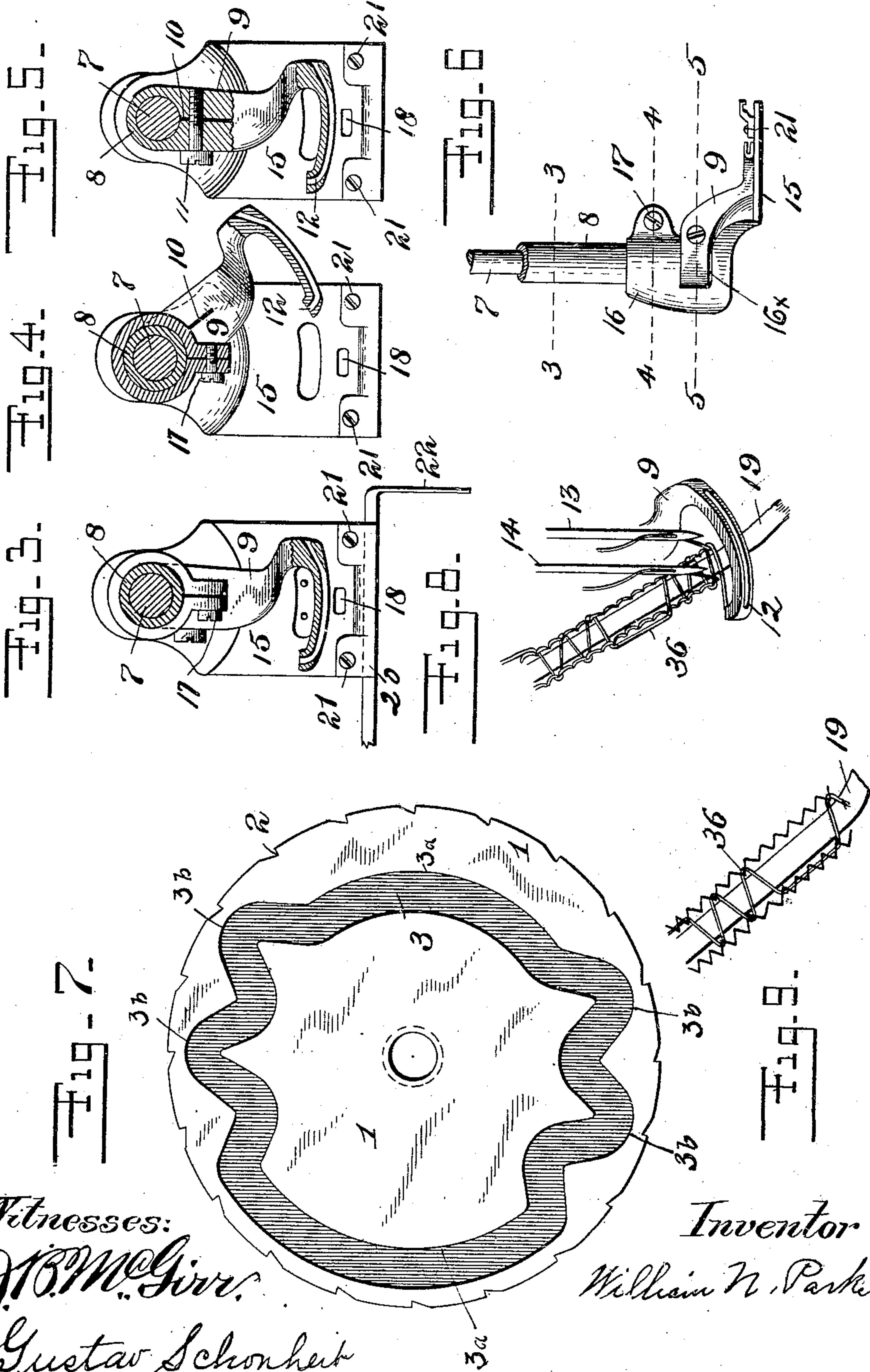
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3 SHEETS—SHEET 3.



Witnesses:  
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*Gustav Schonheit*

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# UNITED STATES PATENT OFFICE.

WILLIAM N. PARKES, OF BROOKLYN, NEW YORK.

## ORNAMENTAL-STITCH SEWING-MACHINE.

No. 875,604.

Specification of Letters Patent.

Patented Dec. 31, 1907.

Application filed January 23, 1902. Serial No. 90,915.

*To all whom it may concern:*

Be it known that I, WILLIAM N. PARKES, a citizen of the United States, and resident of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Ornamental-Stitch Sewing-Machines, of which the following is a specification.

This invention relates to ornamental stitch sewing machines, and especially to those designed for the ornamentation of fabrics by connecting separate material to the same for ornamenting it or for other purposes.

One of the main features of the machine involves a construction for the manipulation of the stitch-forming mechanism, and other devices in connection therewith, so that a ribbon or the like may be removably connected to the fabric or stitched to it if desired. The ribbon, or strip of material to be connected to the fabric, is fed between two needles, and at intervals an auxiliary thread or cord is passed back and forth across the said ribbon thereby making cross-bars and giving a laced or beading effect as if the ribbon had been laced in under the said thread or cord after the stitching had been completed. If it is desired to remove the ribbon for the purpose of washing the fabric, or for any other reason, it can be very readily done and again placed under the said auxiliary thread or cord by the use of an ordinary bodkin or other means. The machine is also effective for looping the said auxiliary cord or the like to the fabric so that a ribbon or a similar article can be readily laced under it, or for the ornamentation of fabrics without the use of the said ribbon.

From the following description it will be evident that the ornamental effects contemplated by my invention, may be produced on the surface of the fabric in the body thereof, or on or near the edge of the work, or may be the connecting medium between two pieces of fabric.

In the drawings: Figure 1 is a rear view of a machine embodying my invention; Fig. 2 is a front view of the same; Fig. 3 is a sectional view on line 3—3 of Fig. 6, showing the device or looper, for carrying the auxiliary thread or cord, in one of its extreme positions, part of the said device being broken away to show the channel or guideway for the said auxiliary thread or cord; Fig. 4 is a sectional view on line 4—4 of Fig. 6, showing

the said looper in the other of its extreme positions; Fig. 5 is a sectional view of the same on line 5—5 of Fig. 6; Fig. 6 is a side view of the presser-foot and auxiliary looper; Fig. 7 is the combination looper-operating cam and ratchet; Fig. 8 is a diagrammatic view in perspective, showing the manner of stitching the auxiliary thread or cord to the fabric as it is passed back and forth across the ribbon or material to be connected or held to the fabric; and Fig. 9 is a view showing the work when the needles are given a lateral movement.

A, represents the overhanging arm of the machine; B, the needle-bar; C, the needle-bar gate in which the needle-bar is mounted; D, the segment lever pivoted at  $d'$ ; E, the connection between the segment lever and the needle-bar gate C. The needle-bar B, is reciprocated vertically in a usual manner by means of a usual connection between the same and the upper shaft of the machine and is moved or vibrated laterally from the movement of the segment lever D.

The mechanism employed for vertically reciprocating the needle-bar and moving it laterally is of a usual construction used in a zig-zag or overseaming sewing machine and forms no part of my present invention.

I have not shown any under stitch-forming mechanism or feed in my present invention as any feed mechanism and any under stitch-forming mechanism can be used in connection therewith, the under stitch forming mechanism being arranged to co-act to engage the loops of the needle threads.

On a suitable bearing attached to the arm A, of the machine is pivoted a ratchet-wheel or disk 1, in the periphery of which are formed teeth 2. In the side of the said wheel is formed a cam-groove 3, as shown in Fig. 7. This cam-groove 3, is composed of two concentric portions  $3^a$ , one nearer the axis than the other, and between the two concentric portions and on opposite sides of the disk the groove is scalloped or given an odd number of convolutions as at  $3^b$ , for the purpose hereinafter described. On the lower end of a pivoted lever 4, is suitably pivoted a friction roller (not shown) which is located in the cam groove 3, and by means of which the said lever 4, is oscillated. To the upper end of the lever 4, is connected one end of a link 5, the other end of which connects with an arm 6, extending from a rod forming a journal or shaft 7, which is mounted in and



extends through a hollow presser-bar 8, said bar being mounted in suitable bearings in the forward end of the arm A, of the machine and lifted in the usual manner by a usual presser-  
 5 bar lifter. To the lower end of the rod 7, is attached a carrier 9, for carrying the auxiliary thread, cord or the like. The shank of the said carrier is slotted as at 10, Fig. 5, and a screw 11, passing through the same serves as  
 10 a means for clamping the carrier to the rod 7. A channel 12, formed through the carrier 9, serves as a means for carrying the auxiliary thread or cord back and forth under the needles 13, and 14, which are carried by the  
 15 needle-bar B, so that the said needles stitch the auxiliary thread or cord to the fabric as shown in Fig. 8. To the lower end of the presser-bar 8, is attached a presser-foot 15, which has a shank 16, formed on it, as shown  
 20 in Figs. 3, 4 and 6, the said shank being adapted to be clamped to the presser-bar 8, by means of a screw 17, which passes through a slotted portion of the said shank, as shown in said figures. The shank of the presser-foot  
 25 is provided, between its clamping portion and its foot portion, with a recess 16<sup>x</sup>, into which the shaft or journal 7, of the carrier 9, extends and in which the shank of said carrier is clamped to its shaft or journal.  
 30 Through the forward end of the presser-foot 15, is a slot 18, which serves as a means for guiding a ribbon between the needles 13 and 14 or the rows of stitching formed thereby. An auxiliary piece 20, held by screws 21,  
 35 serves as a means for clamping an edge guide 22, to the said foot.

Attention is here directed to the compact character of the mechanism, obtained by disposing and locating the carrier 9, as shown,  
 40 viz., by connecting it directly to the end of a rod or bar supported by and extending through the presser-bar. This enables all the actuating mechanism to be placed above, on or alongside the overhanging arm of the  
 45 machine and the carrier to be so disposed as to avoid contact of the work with any of the operating parts. Moreover, the pivot of the carrier is placed behind the needles, avoiding interference with manipulation of  
 50 the work and sight of the latter.

The ratchet or toothed wheel 1, is rotated by means of a suitably pivoted pawl-lever 23, which carries a pawl 24, the lever being oscillated by means of a connection 25,  
 55 between the same and a disk 26, which disk is rotated in a usual manner by the upper shaft of the machine and once to each rotation of the said shaft. A suitable stop pawl 27, pivoted on the arm A, of the machine engages the teeth 2, of the wheel 1, and prevents retrograde movement of the said wheel. To prevent the wheel 1, from throwing ahead a clamping piece 28, surrounds a hub formed on the wheel 1, a suitable friction material,  
 60 not shown, being interposed between the

said piece 28, and the said hub of the wheel 1. One end of a spring 29, is attached to a pin 30, which has a seat in the arm A, of the machine, and the other end of the said spring is attached to the end of the piece 28. The  
 70 normal tendency of the spring 29, is to draw the end of the piece 28, against a pin 31. A screw 32 which passes freely through the end 33, of the piece 28, and has a seat in a threaded hole in the said piece, (as shown in  
 75 Fig. 1.) serves as a means for regulating the friction between the said piece 28, and the wheel 1; and the spring 29, drawing on the said piece 28, in the opposite direction to the forward movement of the wheel, serves as a  
 80 means for producing a yielding force on the said wheel, drawing in the opposite direction to its forward movement and thereby preventing the wheel from throwing ahead. This positively actuated ratchet-mechanism,  
 85 including the frictional holding means, is an important feature of my invention, as the intermittent movement of the cam connected directly thereto can be made to synchro-  
 90 nize with the stitch-forming mechanism, and by applying the friction device to the ratchet-mechanism as described, the operation of the latter is rendered accurate and certain and overthrow and back-lash are prevented. These are important functions in machines  
 95 of this character.

While my invention, as herein disclosed, is shown in connection with a machine having a needle-bar that is moved laterally, I desire it understood that this lateral movement of the  
 100 needle-bar, in itself, has essentially no connection with the said invention; but, by use of a machine in which the needles can be moved laterally a desirable variation in the ornamental stitch is obtained. By using the  
 105 said invention in connection with any ordinary two needle machine the result obtained will be the same as indicated in Fig. 8, and if two shuttles or loop-engaging devices are used in connection with the said needle, only  
 110 two separate rows of stitches will appear on the under side of the fabric while the ornamental effect will be on the upper side of the same. When the end of the connection E, is located over the pivot d', of the segment  
 115 lever D, the needle-bar has no lateral movement and the stitching is then as indicated in the said Fig. 8; but when the needles are given a lateral movement the stitching will be as indicated in Fig. 9.  
 120

Any suitable means can be used for carrying the spool of auxiliary thread or cord and leading the said cord to the carrier, and also for carrying the ribbon. The cam-groove 3, is so constructed that it moves the carrier 9,  
 125 back and forth an odd number of times, preferably five times, thereby carrying the cord 36, across the ribbon 19, five times, as shown in Figs. 8 and 9; then the movement of the said carrier is arrested and remains in the  
 130



position shown in Fig. 3, until five stitches have been made, after which the carrier 9, again moves back and forth five times, when it is again brought to a rest, but this time in the position shown in Fig. 4, or on the opposite side. This is an important feature of my invention, because it produces symmetrical, uniform work. If the carrier 9, were caused to have an even number of movements from side to side and then rest, the cord would be stitched down, or caused to lie, invariably on the same side of the work, resulting in uneven and unsightly work.

I do not wish to be confined to the specific construction and arrangement of parts as herein disclosed. The auxiliary thread or cord, for example, might be dispensed with and a finger or other suitable device used for manipulating one of the threads of the said needles so as to pass it across under the other needle during the formation of a plurality of stitches, and then the movement of the said finger might be arrested during the formation of a plurality of stitches, then again operated as before. This would give an effect similar to that which I show in Fig. 8, but I prefer to use the auxiliary thread or cord and carrier as it is obviously much better. The effect produced by the mechanism I have described can be varied by changing the colors of the ribbon 19, the cord 36, and the threads carried by the needle with respect to each other and with respect to the fabric to which it is being connected. It can also be varied by varying the construction of the cam groove 3, or by varying the lateral movements of the needles.

In practice the stitches are much closer than shown in Figs. 8 and 9, and the cord 36, is either stitched down or lies very close to the needle thread during the formation of the stitches when the carrier is at rest. When the lateral movement is given to the needle, the cord 36, is covered during the interval when the carrier is at rest as indicated in Fig. 9.

From the above description it will be seen that my invention contemplates the formation of a plurality of rows of stitching,—either straight or zigzag,—the production of cross-bar effect between the rows of stitching, and the leading in of ribbon between the rows of stitching and under the cross-bars. It will also be seen that the number of needles employed can be increased to any desired extent, that the cross-bar effect can be produced in several ways within the scope of my invention, and that the character of complementary stitch-forming, or under-stitch, mechanism can be varied according to the particular effect desired.

Having thus described my invention what I claim and desire to secure by Letters Patent is:

1. A sewing machine comprising a plural-

ity of thread carrying needles, an auxiliary thread carrying device for cooperating with said needles, means for operating said device so that its threads is passed back and forth under said needles consecutively a plurality of times, and means for alternately suspending the movement of said device in the opposite extremes of its movements during a plurality of stitch forming operations.

2. A sewing machine comprising two thread carrying needles, an auxiliary thread carrying device, means for operating said device so its thread is passed back and forth under said needles consecutively a plurality of times, means for guiding a strip of fabric or ribbon under the links of the auxiliary thread, and means for suspending the movement of said device alternately on opposite sides of said ribbon during a plurality of stitch forming operations.

3. A sewing machine comprising a plurality of vertically reciprocating and laterally vibrating needles, an auxiliary thread carrying device for cooperating with said needles, means for operating said device so that its thread is passed back and forth under said needles consecutively a plurality of times, and means for alternately suspending the movement of said device in the opposite extremes of its movements during a plurality of stitch forming operations.

4. A sewing machine comprising a reciprocating needle-bar, an auxiliary thread or cord carrying part, a ratchet wheel, means intermediate said ratchet wheel and the auxiliary thread carrying part whereby when the ratchet wheel is operated the said part is operated, and means actuated separately from the needle-bar for operating said ratchet wheel.

5. In a sewing machine, mechanism for stitching and ornamenting fabrics comprising a tubular presser-bar having a recessed presser-foot, a rod or shaft mounted in the said presser-bar, a cord-carrier attached to the lower end of the said rod within the recess of said foot, a cam and connections between the same and the said rod, and means for actuating the said cam.

6. A sewing machine comprising a plurality of vertically reciprocating and laterally vibrating needles, a presser foot bar, an auxiliary cord carrier carried by said presser bar, means for operating the same so as to pass the cord back and forth under said needles, and means for periodically arresting the movement of said cord carrier in the opposite extremes of its movements.

7. A sewing machine comprising a plurality of thread carrying needles, a cord carrier, a ribbon guide, and means for operating the cord carrier to pass the cord back and forth across the ribbon an odd number of times and for suspending the movement of said cord carrier during a plurality of stitch form-



ing operations and for again passing said cord back and forth across said ribbon an odd number of times after said suspension of the movement of said cord carrier.

5 8. A sewing machine having a hollow presser-bar; a cord-carrier having its journal extending through said bar; and means for actuating said carrier.

9. A sewing machine having stitch-forming mechanism comprising a plurality of  
10 needles, a presser-bar carrying a foot, a cord-carrier, and a ribbon-guide, the cord-carrier being mounted on the presser-bar in rear of the needles and extending in front thereof,  
15 and the ribbon-guide being disposed on the presser-foot in advance of the needles and so as to lead ribbon between the said needles.

10. A sewing machine comprising two reciprocating needles disposed abreast at  
20 right angles to the direction of the movement of the work, an auxiliary thread carrying finger, a ratchet wheel, a connection between said ratchet wheel and said finger, and means separate from the needle operating  
25 mechanism for operating said ratchet wheel.

11. A sewing machine comprising a plurality of reciprocating needles, an auxiliary thread carrying finger a revolving part, a  
30 ratchet wheel operated from the movement of said revolving part, and a connection between said ratchet wheel and the aforesaid finger.

12. A sewing machine having a hollow presser-bar; a foot secured to the said bar  
35 and provided with a recess in its shank; a cord-carrier having its journal extending into the presser-bar and projecting into the said recess; and means for securing the carrier to its journal.

40 13. A sewing machine having a presser-bar carrying a foot, the shank of which foot is provided with a recess under said bar; a cord-carrier journaled in said recess concentric with said bar; and means for actuating  
45 said carrier.

14. A sewing machine comprising two reciprocating needles, a tubular presser bar, a shaft journaled in the same, an auxiliary thread carrier carried by said shaft, means  
50 for oscillating said shaft, and means adapting said presser bar to carry a presser foot.

15. A sewing machine comprising two reciprocating needles disposed abreast, a presser-bar having a longitudinal bore

formed in it, a shaft journaled in said bore, 55 an auxiliary thread carrier carried by the lower end of said shaft, a presser foot secured to the lower end of said presser bar that extends horizontally under said auxiliary thread carrier, and means for oscillating said 60 shaft.

16. A sewing machine comprising a driving shaft, two reciprocating needles disposed abreast, a presser bar having a longitudinal bore therein, a shaft journaled in said bore, 65 an auxiliary thread carrier carried by the lower end of said shaft, a presser foot carried by said presser bar, a cam mounted on the driving shaft of the machine, and a connection between said cam and said shaft where- 70 by the shaft is oscillated from the action of said cam.

17. A sewing machine comprising two reciprocating needles disposed abreast, a tubular presser bar, a presser foot carried by the 75 lower end of said presser bar, a shaft journaled in said presser bar, an auxiliary thread carrier attached to the lower end of said shaft, said auxiliary thread carrier so constructed and disposed that it extends over 80 the top of said presser foot, a delivery eye formed in said thread carrier, said carrier so constructed that the part in which said eye is formed is adapted to oscillate in front of the needles, and means for oscillating said 85 shaft.

18. A sewing machine comprising a driving shaft, two needles disposed abreast, a tubular presser-bar, a shaft journaled in said presser bar, a presser foot secured to the 90 lower end of said presser-bar, an auxiliary thread carrier secured to the lower end of said shaft and constructed and disposed so that it extends laterally above said presser foot, an arm attached to the upper end of 95 said shaft on the end of which a ball is formed, a cam operated from the movement of the driving shaft, a lever operated by said cam, and a pitman connection between said lever and said ball. 100

Signed at New York in the county of New York and State of New York this 22nd day of January A. D. 1902.

WILLIAM N. PARKES.

Witnesses:

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MAXWELL HALL ELLIOT.