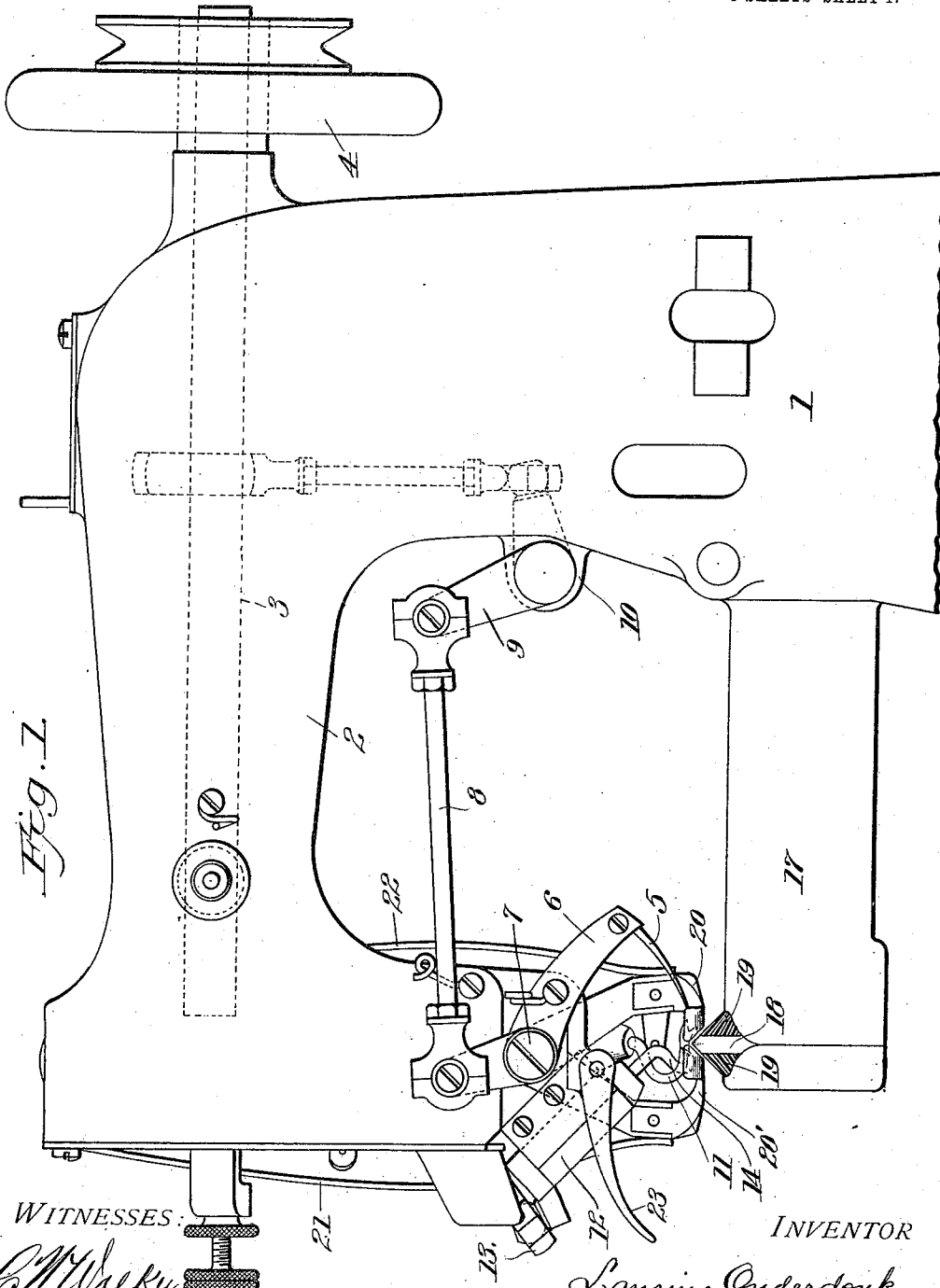


L. ONDERDONK.
BLINDSTITCH SEWING MACHINE.
APPLICATION FILED DEC. 6, 1907.

1,132,964.

Patented Mar. 23, 1915.

3 SHEETS-SHEET 1.



WITNESSES:

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Mary W. Hammer

INVENTOR

Lansing Onderdonk

BY

Sturtevant & Mason

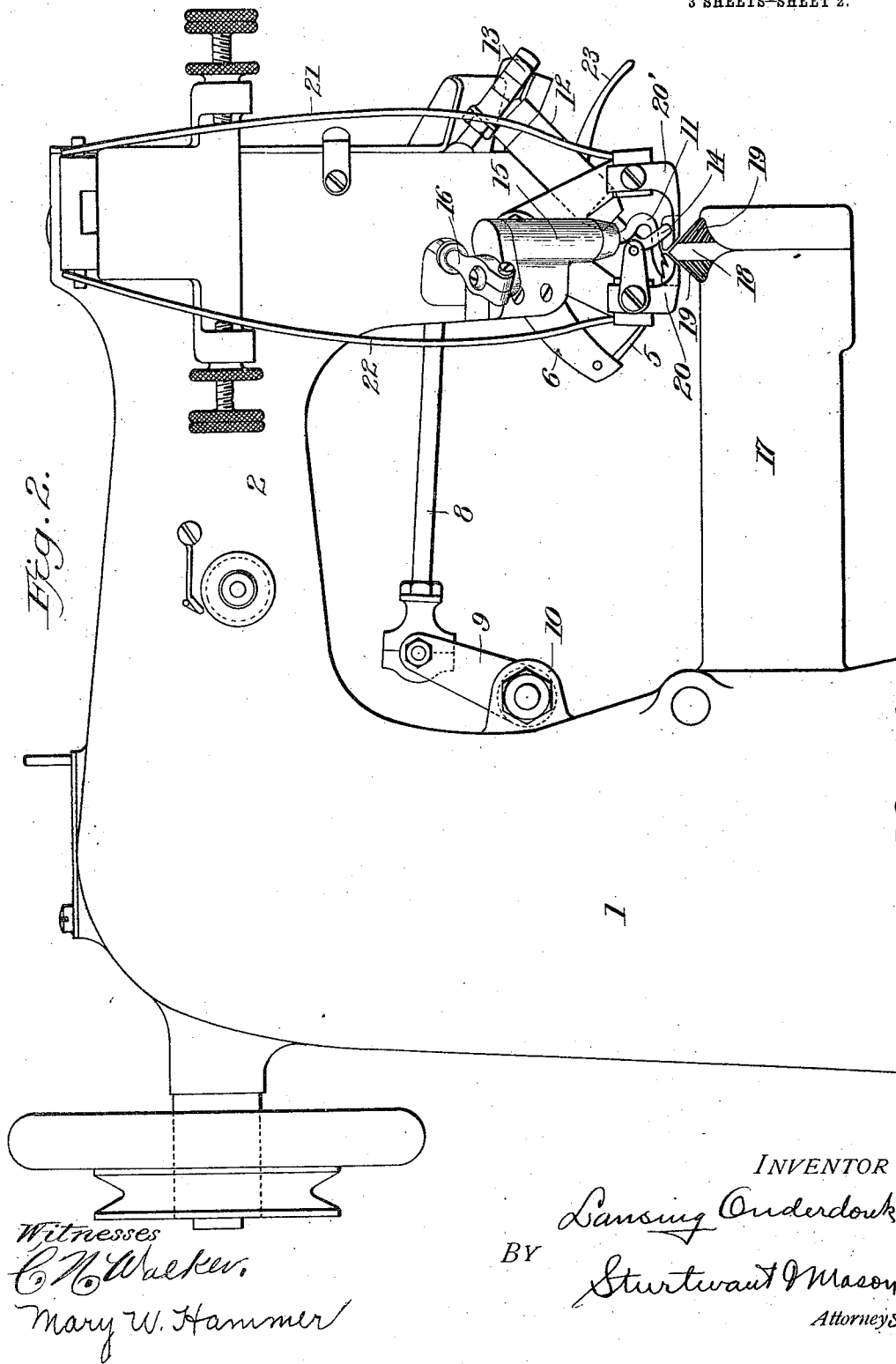
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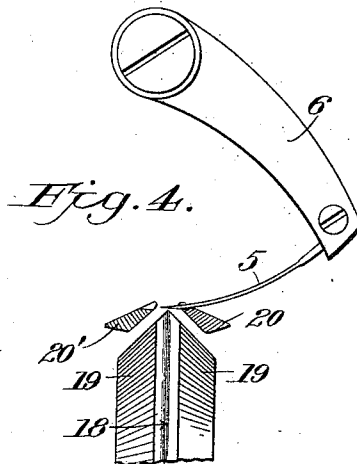
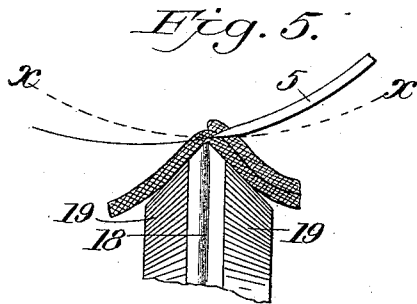
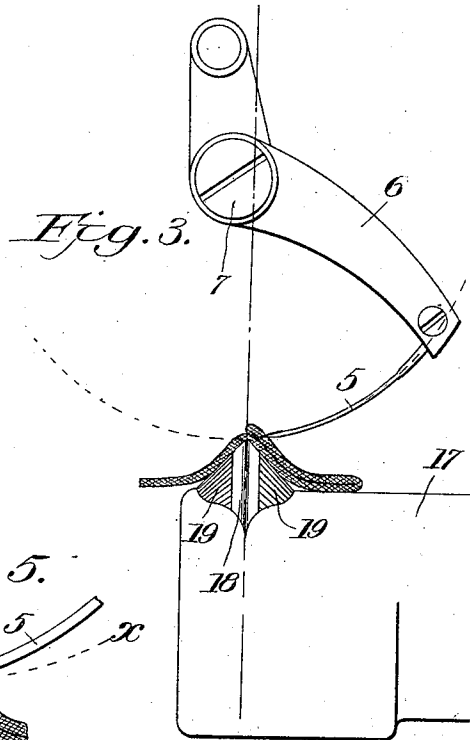
3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

LANSING ONDERDONK, OF NEW YORK, N. Y., ASSIGNOR TO UNION SPECIAL MACHINE COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

BLINDSTITCH SEWING-MACHINE.

1,132,964.

Specification of Letters Patent. Patented Mar. 23, 1915.

Application filed December 6, 1907. Serial No. 405,355.

To all whom it may concern:

Be it known that I, LANSING ONDERDONK, a citizen of the United States, residing at New York city, in the county of New York, State of New York, have invented certain new and useful Improvements in Blind-stitch Sewing-Machines, (Case B,) of which the following is a description, reference being had to the accompanying drawing and to the letters and figures of reference marked thereon.

My invention relates to new and useful improvements in blind stitch sewing machines, and has for its object to provide a needle mechanism wherein the needle will with certainty enter the fabric and pass therethrough without deflecting.

A further object is to provide a needle mechanism wherein the needle point shall travel close to the crimping ridge thus enabling the blind stitching of very thin material.

My invention is more especially directed to a blind stitching mechanism, wherein the needle is a curved needle.

It has been found in actual practice that where a side pointed curved needle is used, the needle is very apt to be deflected from its proper course owing to the fact that the needle is moving in a curved path, as it enters the fabric. By my improved arrangement of parts, I am able to use a curved needle with a centrally located point and at the same time secure every advantage gained by a side pointed needle.

A further object of my invention is to provide a needle guard which is so located as to engage the needle and by placing said needle under strain, hold the same from undue lateral movement.

In the drawings which show by way of illustration, one embodiment of my invention: Figure 1 is a front elevation of a machine embodying my invention. Fig. 2 is a rear view of the same. Fig. 3 is a detail showing the needle and its position relative to the work support. Fig. 4 is a detail showing the needle, the needle guard and the work support. Fig. 5 is an enlarged detail showing the position of the needle as it enters the material.

In the drawings the bed plate 1 of the machine carries an overhanging arm 2, in which is mounted the main shaft 3, which is operated by the usual belt wheel 4. The

needle 5 is carried by a needle lever 6 which is pivoted at 7 to the overhanging arm. Said needle lever receives its oscillation through a link 8, which is connected to a rock lever 9, pivoted to a lug 10, formed on the arm of the machine. Said rock lever 9 is oscillated by an eccentric on the main shaft 3, through an eccentric strap which is connected to a ball stud formed on one arm of the rock lever 9 as shown in dotted lines in Fig. 1. Coöperating with the needle 5, is a thread carrying looper 11 which is mounted in a bearing 12 carried by the head of the machine. Said looper 11, receives oscillation from the main shaft 3 by means of a suitable link 13. A spreader 14 engages the looper thread loop and carries the same across the line of seam into position for the entrance of the needle. Said spreader 14 is mounted in a bearing 15 and is oscillated from the main shaft by means of a link 16, and suitable connections. The bed plate carries a work supporting arm 17, which has projecting through its upper surface at the outer end, a crimping member 18, having feed teeth 19, formed in each side thereof. Coöperating with the crimping member 18 to hold the material, are suitable presser members 20 and 20' which are pivotally supported by the overhanging arm. Said presser members are yieldingly held in contact with the crimping member 18 by means of springs 21 and 22. The presser members are separated when desired by means of a lever 23.

As clearly shown in Figs. 1, 3 and 4, the needle lever is pivoted to the overhanging arm at a point at one side of a vertical plane, passing through a central portion of the crimping member 18. As shown in Fig. 3, the pivotal support for the needle lever is on the opposite side of the vertical plane referred to from the needle, when in its extreme rearward position.

In Fig. 5, the line $x-x$ represents the path of movement of the outer face of the needle when pivoted in a vertical plane passing centrally through the crimping member. The axis of the needle lever is placed such a distance at one side of the plane referred to, that the outer tapered face of the needle practically co-incides with the line $x-x$. By this arrangement of the needle, it will be seen that as the needle is penetrating the material held crimped upon the

crimping member 18, the outer tapered face of the needle will be moving substantially in the line $x-x$, and therefore, said needle may be so disposed as to pass very close to the crimping member 18. If the axis of the needle lever is in a vertical plane passing through the central portion of the crimping member, the point of the needle must necessarily enter the fabric at a sufficient distance above the crimping member, so that the shoulder formed by the tapered point will clear said crimping member. By such a location of parts, it sometimes happens that the needle point will fail to enter the lower layer of fabric or the shoulder on the needle will contact with the crimping member cutting the material entirely through to the right or lower side thereof, thus making grinning stitches. By shifting the axis of the needle lever as above stated, I avoid these objections and secure all the advantages of a side pointed needle. Then again, when the fabric is positioned as shown in Fig. 5, for stitching down and overseaming an edge to a body fabric, the needle may enter the upper ply of fabric only, and fail to engage the lower ply. By my arrangement of parts, however, wherein the needle is moving slightly downward, the point of the needle will with certainty penetrate the lower layer of fabric.

I have provided the presser member 20 as shown in Fig. 4, with a needle guiding groove and the needle is preferably so curved as to be slightly eccentric to the axis of the needle lever, so that as the needle moves forward, said needle will contact with the presser member 20, and be placed slightly under strain. I have found that where a needle of the character herein disclosed is placed under strain, that the liability of the needle being deflected as it passes through the material out of its proper course, is greatly reduced. The left hand presser member 20 is cut away sufficiently to allow the free passage of the needle.

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

1. A blind stitch sewing machine including in combination a horizontal work supporting member, a fixed crimping ridge carried by said member, the side faces of which intersect at an angle at the line of stitching, an oscillating needle, and means for supporting said oscillating needle above the work support and the crimping ridge, and with the axis thereof located at one side of a plane passing through said ridge and bisecting the angle formed by the side faces of said ridge.

2. A blind stitch sewing machine including in combination a horizontal work sup-

porting member, a fixed crimping ridge carried thereby, the side faces of said crimping ridge being inclined to a vertical plane passing centrally through said ridge, a needle carrying lever, a curved needle mounted thereon and movable back and forth above said crimping ridge, means for pivotally supporting said needle lever with the axis thereof at one side of said vertical plane, and means for operating said lever.

3. A blind stitch sewing machine including in combination a horizontal work supporting member, a fixed crimping ridge carried thereby, the side faces of said crimping ridge being inclined to a vertical plane passing centrally through said ridge, an overhanging arm, a lever pivoted on said overhanging arm, a curved needle carried thereby, said needle being movable back and forth above said crimping ridge and having a centrally located point, means for pivotally supporting said lever with the axis thereof at one side of said vertical plane, said axis being on the side of the plane from which the point of the needle emerges from the material, and means for operating said needle lever.

4. The combination of a horizontal work supporting member, a crimping ridge carried thereby, of a curved needle provided with a centrally located point and having its outer tapered surface lying substantially in the arc of a circle the center of which is located in a vertical plane passing centrally through said crimping ridge, and means for supporting and operating said needle.

5. The combination with a horizontal work support, of a crimping ridge carried thereby, an overhanging arm, presser members carried by said overhanging arm and cooperating to hold the work on said crimping ridge, a curved needle carried by said overhanging arms, means for operating said needle, a needle guide carried by one of said presser members, said needle guide being disposed relative to the needle, whereby the outer face of the needle engages said guide, and the needle is placed under slight strain.

6. The combination of a work support, a V-shaped crimping ridge carried thereby, a curved needle, means for pivotally supporting said curved needle with the axis thereof at one side of a plane passing through the vertex of said crimping ridge, forming equal angles with the surfaces of said ridge and means cooperating with said needle for forming a series of connected stitches.

In testimony whereof I affix my signature, in presence of two witnesses.

LANSING ONDERDONK.

Witnesses:

R. A. OSWALD,
WALTER HARTLEY.