

F. E. VALOIS.
SHOE SEWING MACHINE.
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933,503.

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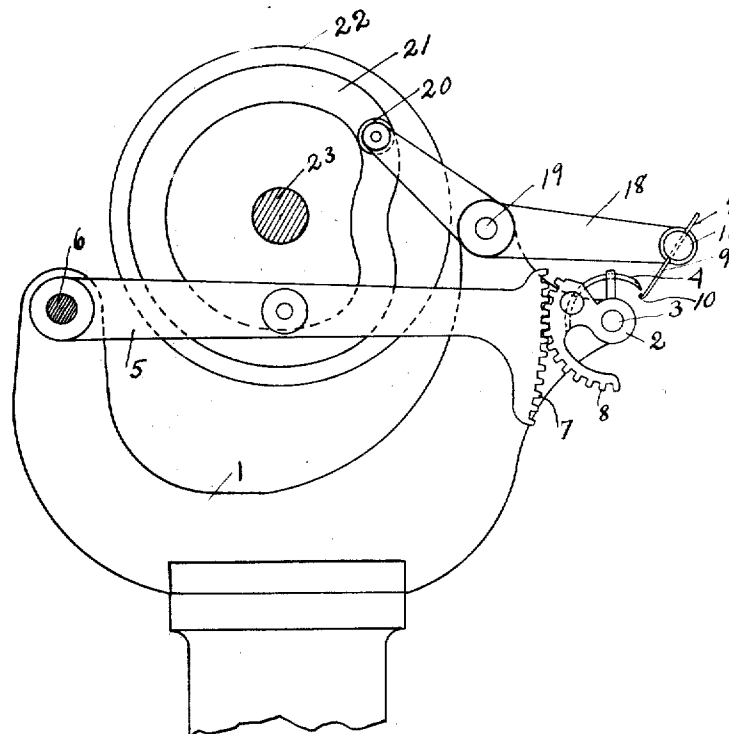


Fig. 1

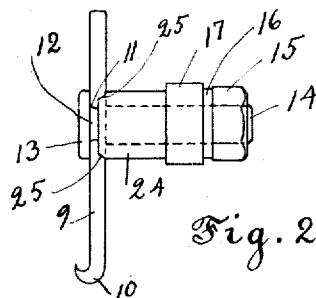


Fig. 2

Witnesses:

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UNITED STATES PATENT OFFICE

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SHOE-SEWING MACHINE.

933,503.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, FELIX EMILE VALOIS, a citizen of the United States, residing at Haverhill, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Shoe-Sewing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to sewing machines and more particularly to lock-stitch sewing machines employed in sewing together the outer sole and welt of welted boots or shoes and generally known to the trade as outsole stitchers. As is well known to those skilled in this art these machines comprise a curved hooked needle which enters the work and draws through a loop of needle thread which is passed over the shuttle to be engaged with the shuttle thread and forming the usual and well known lock-stitch.

To enable the shuttle to engage and enter the loop of needle thread there is provided a thread lifter and spreader which comprises a hooked arm arranged to engage the loop of thread drawn out by the needle and to lift and spread the same whereby the horn of the shuttle may engage the loop and carry it about the shuttle and bobbin. It is desirable that this thread lifter and spreader shall be capable of adjustments with relation to the needle and it is with the object of providing a simple and effective adjusting means that I have produced the present invention.

The present invention, therefore, consists of the improved adjustable thread lifter and spreader which will be hereinafter described and claimed.

The present invention is illustrated in the accompanying drawing, in which:—

Figure 1 illustrates so much of an outsole stitcher as is necessary to illustrate the invention and to show the relation of my thread lifter and the needle. Fig. 2 is an end view of the lever which carries the thread lifter and spreader, illustrating the adjustable connection.

Similar reference characters will be employed throughout the specification and drawings to designate corresponding parts.

In the drawing, 1 indicates the head of an outsole stitching machine of a type well

known to the trade. The needle segment 2 is pivoted at 3 and carries the curved hooked needle 4. The needle segment 2 is oscillated about its pivot by means of a lever 5 pivoted at 6 to the head of the machine and oscillated by means of a cam (not shown). At its forward end the lever 5 carries a curved rack 7, engaging a curved rack 8 on the needle segment. The vertical movements of the lever 5 impart to the needle segment the oscillating movement in a curved path in a manner well known to project the needle through the work and to withdraw it therefrom with a loop of needle thread in its hook or barb.

In Fig. 1 of the drawing the needle is shown in its retracted position and in that position to which it draws the loop of needle thread. At this point the loop of needle thread held by the needle will be engaged by the thread lifter and spreader 9 which consists, in the present invention, of a cylindrical rod carrying at its lower end a hook 10 to engage the loop of needle thread. It is desirable that the hook 10 be capable of adjustment with relation to the needle and in the present invention I have provided for three adjustments, one in a curved path toward and from the path of movement of the needle, the other an adjustment at right angles or radially to the path of movement of the needle, and another whereby the hooked end of the spreader may be adjusted about the axis of the shank supporting it, all as will be hereinafter described. The shank 9 is preferably cylindrical in cross section and passes through a circular bore 11 in a stud 12, the said stud having a head 13 at its inner end and being threaded at the end 14, the threaded end carrying a nut 15, and if necessary, a washer 16. The stud 12 is mounted in the outer end 17 of a bent lever 18 fulcrumed at 19 and carrying at its rear end a cam roll 20 engaging a cam path 21 in a cam 22 mounted upon a shaft 23. Between the head 13 and the end 17 of the lever 18, the stud 12 carries a collar or bushing 24, one end of which is notched at diametrically opposite points, as shown at 25.

The foregoing arrangement is such that the cylindrical shank 9 is passed through the bore 11 in the stud 12 and is seated in the notches 25 and by tightening up the nut 15 the stud 12 will be drawn to the right, (looking at Fig. 2) thus clamping the shank 9 against the bushing 24. By loosening the

nut 15 the shank 9 may be raised and lowered in its bearing, thus adjusting the hook 10 radially with relation to the path of movement of the needle. Also by turning the stud 12 in the end of the lever 17 the hook 10 may be adjusted in a curved path with relation to the point of the needle and about the axis of the stud 12 as a center, and obviously by turning the shank 9 in its bearing the hook 10 may be adjusted about the axis of the shank 9 as a center. Thus it will be noted, as hereinbefore stated, I have provided for three different adjustments of the thread lifter and spreader which insures that it may be properly positioned with relation to the hooked end of the needle to secure its effective engagement with the loop of thread drawn back by the needle.

Having described my invention I claim as new and desire to protect by Letters Patent of the United States:—

1. In a sewing machine, in combination, a curved hooked needle, means to move the same in a curved path, a thread lifter and spreader, a lever carrying said thread lifter and spreader and means for adjustably mounting the thread lifter and spreader on its lever whereby said thread lifter and spreader may be adjusted in a curved path toward and from the path of movement of the needle, and also radially with relation

thereto, both adjustments being in the same plane and substantially the plane of movement of the needle, substantially as described.

2. In a sewing machine, in combination, a curved needle, a thread lifter and spreader, a lever carrying said thread lifter and spreader, a stud mounted to turn in the end of the lever and having a bearing for the shank of the thread lifter and spreader and a notched bushing engaging the shank of the thread lifter and spreader, substantially as described.

3. In a sewing machine, in combination, a thread lifting and spreading mechanism, comprising a cylindrical shank carrying a hook at its lower end, a stud having a circular bearing to receive a shank of the lifter and spreader, a lever having a circular bearing for said stud, a cylindrical boss carried by said stud and having seats to engage the shank of the lifter and spreader and a set nut for engaging the threaded end of the stud for clamping it to the lever, substantially as described.

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

FELIX EMILE VALOIS.

Witnesses:

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