C. H. WILKES.

GLOVE SEWING MACHINE.

APPLICATION FILED SEPT. 8, 1911.

1,049,430. Patented Jan. 7, 1913.

Fig. 1.

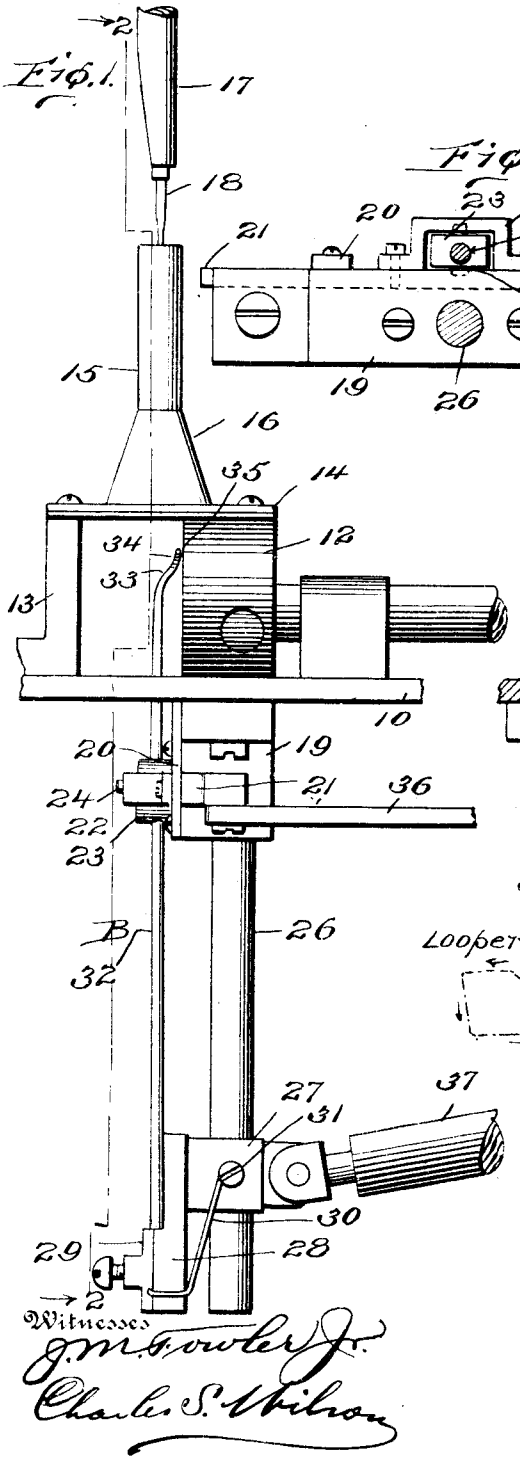

Fig. 3.

Fig. 2

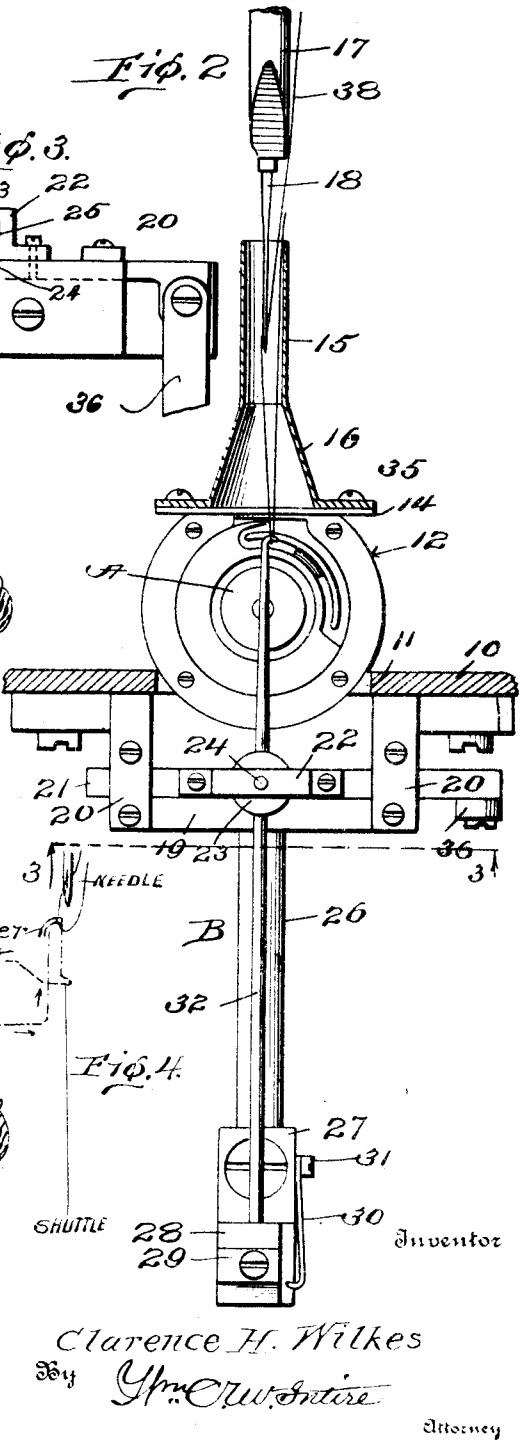

Fig. 4.

Witnesses

J. M. Fowler Jr.

Charles S. Wilson

Inventor

Clarence H. Wilkes

By Wm. C. W. Entire

Attorney

UNITED STATES PATENT OFFICE.

CLARENCE H. WILKES, OF GLOVERSVILLE, NEW YORK.

GLOVE-SEWING MACHINE.

1,049,430. Specification of Letters Patent. Patented Jan. 7, 1913.

Application filed September 8, 1911. Serial No. 648,378.

To all whom it may concern:

Be it known that I, CLARENCE H. WILKES, a citizen of the United States, residing at Gloversville, in the county of Fulton and State of New York, have invented certain new and useful Improvements in Glove-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.

This invention relates to improvements in glove sewing machines, and has for its object to provide a means whereby a flat seam may be used in connection with a lock stitch upon the ordinary spindle type glove sewing machine.

Heretofore in the manufacture of that type of gloves commonly known as pique gloves, wherein a flat seam exists throughout the construction thereof, it has been the custom to fit up or partially sew the same upon a flat bed machine in order that a lock stitch may be produced, and to complete or close the glove on the standard glove sewing machine, producing a chain stitch. This naturally produces a clumsy and unprepossessing appearance on the part of the glove and increases the cost of labor, the amount of thread, and, in fact, increases the expense in all branches of the manufacture thereof.

The present invention contemplates the provision of a means whereby the spindle type glove sewing machine may be used to produce flat seamed gloves, and at the same time sew, fit and close the same with a lock stitch throughout.

The present invention does not embody all of the features as completed, but covers the thread hook attachment, a coöperating shuttle mechanism forming the subject matter of the co-pending application filed September 8, 1911, Serial No. 648,379.

With the above and other objects in view, this invention consists in the combination, construction and arrangement of parts, all as hereinafter more fully described, claimed and illustrated in the accompanying drawings, wherein:

Figure 1 is a front elevation of a machine, illustrating the coöperating needle and needle rod, and the thread hook forming the subject matter of the present invention, and also the operating mechanism thereof; Fig. 2 is a vertical section taken along line 2—2 of Fig. 1; Fig. 3 is a transverse section taken along line 3—3 of Fig. 2; Fig. 4 is a diagrammatical view of the path of the upper terminal of the thread hook.

The thread hook attachment for glove sewing machines, forming the subject matter of the present invention, is provided in order that the thread carried by the needle may be engaged after the same has pierced the leather, drawing said thread through the work supporting spindle and placing the same in such a position that it will be engaged by the shuttle or looper (illustrated in the present invention, but forming the subject matter of the co-pending application filed herewith), said shuttle or looper then engaging the thread to form a portion of the lock stitch, as will hereinafter be more fully described. The work supporting spindle used in the present invention is necessarily hollow, having a flared enlargement at its lower terminal, in order that the same may readily coöperate with the shuttle or looper for the return of the thread through the work supporting spindle after the same has coöperated with the thread carried by the bobbin.

A standard needle rod carrying any suitable needle, reciprocates above the work supporting spindle, said needle being adapted to enter said spindle at pre-determined intervals, after the same has pierced the leather or goods.

A guide is mounted on the under face of the bed of the machine and has mounted for reciprocation therein, a slide on which is vertically mounted for oscillation a bearing, through which the thread hook, forming the subject matter of the present invention passes, said thread hook adapted to reciprocate vertically through said bearing. A vertical rod extends below the bed of the machine and is adapted to remain stationary, having mounted thereon a suitable slide, to which the lower terminal of the thread hook is pivotally secured.

The operation and function of the various elements of the machine will hereinafter be more fully described, setting forth fully the timing of the thread engaging and disengaging intervals.

Referring more particularly to the drawings 10 indicates a fragmentary section of a bed of a glove sewing machine, having a opening 11 therein, adjacent to which is

mounted a bearing 12, which coöperates with an auxiliary bearing 13 for the support of the spindle base 14. The spindle base 14 is apertured for the passage of the thread hook, as will hereinafter be more fully described, said aperture having superposed thereabove the tubular spindle 15, said spindle being provided with a flared portion 16, in order that the same may readily coöperate with the bobbin and shuttle or looper indicated generally as "A", and operably mounted within the bearing 12. A standard needle rod 17, carrying any suitable needle 18 is mounted for reciprocation above the spindle in such a manner that upon the movement of the needle rod, said needle will enter the spindle, at the same time piercing the leather or goods located thereon, at pre-determined intervals.

A guide 19 is mounted transversely on the side of the machine bed 10, adjacent to the opening 11, and carries at each terminal thereof vertical bearings 20, in which reciprocates the slide 21, said slide being operated by any suitable mechanism for the purpose of timing the operation thereof, as will hereinafter be more fully described.

An offset bracket 22 is centrally secured to the slide 21 and has a circular vertical bearing 23 mounted therein through the instrumentality of the trunnions 24, formed or otherwise secured to one side of the bearing 23 and operating between the offset bracket 22 and the slide 21. This construction *i. e.* the elimination of the passage of a pin through the bearing 23 is such that the same will not in any way interfere with the vertical opening 25 formed within the bearing 23, for the reciprocation of the thread hook.

A dependent rod 26 is carried by the guide 19 and is, in the construction of the machine, located substantially directly below the bearing 12, said rod having a slide 27 mounted for reciprocation thereon. A dependent bracket 28 is pivotally mounted on one side of the slide 27 and coöperates with the clamping plate 29, which rigidly secures the lower terminal or base of the thread hook to said bracket.

When the machine is in operation at fourteen hundred (1400) or more revolutions per minute, the tendency of the bracket 29 is to vibrate and form a somewhat irregular stitch. To overcome this tendency and provide a means whereby positive rigidity may be assured, a spring 30 is secured at one terminal thereof between the clamping plate 29 and the bracket 28, and at the opposite terminal is attached by a screw 31 to the slide 27.

The thread hook which is carried by the bracket 28 and passes through the bearing 23 comprises a tapered shank 32, the large end or lower terminal thereof being clamped rigidly to the bracket 28, through the instrumentality of the clamping plate 29. The opening 25 of the bearing 23 is of sufficient size to permit the reciprocation of the shank 32 therethrough. The upper or smaller terminal of the shank 32 is bent toward the bearing 12, as at 33, forming a vertical offset portion 34, which is bent toward the front of the machine to form a hook 35. This thread hook 35 operates in close proximity with the shuttle or looper indicated generally as "A," in order that the thread engaged by the hook 35 may be readily transferred to said shuttle or looper.

Any suitable means 36 is provided whereby the slide 21 may be reciprocated in the guide 19, said means and the timing mechanism therefor not forming a part of the present application, and consequently not illustrated or described. In order to provide a means whereby the slide 27 may reciprocate upon the pin 26, any suitable lever connection 37 is interposed between the outer side of said slide and the timing mechanism, which is not illustrated or described by reason of the fact that the same does not form a part of the present application.

In operation, the needle 18 carrying the thread 38 pierces the goods located upon the spindle 15 and enters said spindle carrying the thread 38 therewith, the free terminal of said thread being retained within the goods, and consequently above the upper end of the spindle, thereby forming a loop adjacent to the lower terminal of the needle. As the needle 18 enters the spindle, the slide 21 moves to the left (referring to Fig. 2) carrying the thread hook 35 referred to generally as "B" in a similar direction, in order that the same will not interfere with operation of the bobbin hook, after which the slide 21 moves to the right, causing the thread hook "B" to assume a substantially vertical position. The slide 27 then moves upwardly upon the rod 26, causing the thread hook "B" to enter the flared portion 16 of the spindle, and subsequently the main cylindrical body portion 15 thereof. After the thread hook has completed its upward movement the same rests substantially stationary while the needle rod 17 moves in a downward direction, causing the needle 18 to pierce the goods and enter the cylinder 15 to meet the hook 35 of the thread hook "B." As the needle 18 reaches the lowest point of its movement, and simultaneous with the starting of the forward movement thereof, the slide 21 moves slightly to the right, causing a similar motion in the hook 35 of the thread hook "B," in order that the said hook may engage the loop of thread carried by the needle 18. It will be understood that the slide 27 then moves downwardly upon the rod 26, bringing with it the thread 38 originally carried by the needle until said slide has nearly

reached the lowest point of its movement, and which is illustrated in Fig. 12. This movement brings the hook 35 of the thread hook "B" substantially opposite to the shuttle or looper "A" and somewhat below the same, thereby locating the loop of thread carried by the thread hook "B" in such a position that the shuttle or looper "A" will readily engage the same upon the oscillation thereof.

The bobbin hook or shuttle is not claimed *per se* in this application, although it is included as an element in some of the claims, but said hook constitutes the subject matter of another pending application filed by me September 8, 1911, Serial No. 648,379.

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

1. In a glove sewing machine embodying a tubular work supporting member, a vertically operating thread carrying needle adapted to enter said tubular work supporting member, and a rotary shuttle hook distant from the vertically movable needle; a vertically reciprocating hook, timed to meet and grasp the thread carried by the needle; draw it down within the tubular work supporting member, and deliver it to the rotary shuttle hook, substantially as shown and described.

2. A glove sewing machine comprising a lock stitch sewing mechanism including a needle and a coöperating looper, a tubular work supporting spindle, said looper located exteriorly of said spindle, means independent of the needle for engaging the needle thread and drawing the same through said spindle into engagement with said looper.

3. A glove sewing machine, comprising a lock stitch mechanism, including a needle and a coöperating looper, a tubular work supporting spindle, said looper being located exteriorly of said spindle, and in alinement therewith, and means independent of said needle for engaging the needle thread, and drawing the same through said spindle into engagement with said looper.

4. A glove sewing machine, comprising a lock stitch mechanism, including the needle and coöperating looper, a tubular work supporting spindle, said looper being located exteriorly of said spindle, a thread hook independent of said needle for engaging the needle thread and drawing the same through said spindle into engagement with said looper.

5. A glove sewing machine, comprising a lock stitch mechanism, including the needle and coöperating looper, a tubular work supporting spindle, said looper being located exteriorly of said spindle, a thread hook mounted for reciprocation into and out of said spindle for engaging said needle thread and drawing the same through said spindle into engagement with said looper.

6. A glove sewing machine comprising a lock stitch sewing mechanism including the needle and cooperating looper, a tubular work supporting spindle, a thread hook adapted to reciprocate into and out of said spindle for engaging the needle thread and drawing the same through said spindle into engagement with said looper.

7. A glove sewing machine comprising a lock stitch sewing mechanism including the needle and coöperating looper, a tubular work supporting spindle, and means mounted for reciprocation into and out of said spindle for engaging the needle thread and drawing the same through said spindle into engagement with the said looper.

8. A glove sewing machine comprising a lock stitch sewing mechanism, including the needle and coöperating looper, of a tubular work supporting spindle, said looper located exteriorly of said spindle, means independent of said needle for retaining the needle thread within said spindle upon the outward movement of the needle and drawing said thread through said spindle for engagement with said looper.

9. A glove sewing machine comprising a lock stitch sewing mechanism, including a needle and its coöperating looper, a tubular work supporting spindle, said looper being located exterior of said spindle, and means for engaging the needle thread and drawing the same through said spindle for engagement with said looper.

10. A glove sewing machine comprising a lock stitch sewing mechanism, including a needle and its coöperating looper, a tubular work supporting spindle, said looper being located exterior of said spindle, and means for engaging the needle thread and drawing the same through said spindle for engagement with said looper, and means for imparting a transverse and vertical motion to said last named means.

11. In a glove sewing machine, the combination with a bed, of a spindle carried by said bed, a needle, a looper located adjacent to said spindle coöperating with said needle, a rod mounted on the under side of the said bed, a sleeve operable vertically on said rod, and a thread hook carried by said sleeve.

12. In a glove sewing machine, the combination with a bed, of a tubular work supporting spindle carried by said bed, a needle, a looper located adjacent to said spindle, a rod mounted on the under side of the said bed, a sleeve operable vertically on said rod, a slide located adjacent to said rod, a bearing located in said slide, a thread hook carried by said sleeve, operable on said rod and reciprocatingly mounted in the bearing of said slide.

13. A glove sewing machine, comprising a

lock stitch mechanism, including a needle and the coöperating looper, a tubular work supporting spindle, a rod located adjacent to said looper, a bearing mounted for reciprocation upon said rod, means whereby said bearing may oscillate upon said rod, a thread hook carried by said bearing and adapted to engage the needle thread and draw the same through said spindle for engagement with said looper.

14. A glove sewing machine, comprising a lock stitch mechanism, including a needle and the coöperating looper, a tubular work supporting spindle, a rod located adjacent to said looper, a bearing mounted for reciprocation upon said rod, means whereby said bearing may oscillate upon said rod, a thread hook carried by said bearing and adapted to engage the needle thread and draw the same through said spindle for engagement with said looper, and means whereby said hook may be given a motion transverse to the reciprocation of the said bearing.

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

CLARENCE H. WILKES.

Witnesses:

IRENE F. MASON,

AMY R. BARNARD.