(No Model.)

G. SPEIGHT & S. CHAPMAN.

SEWING MACHINE.

No. 494,039. Patented Mar. 21, 1893.

Fig. 1.

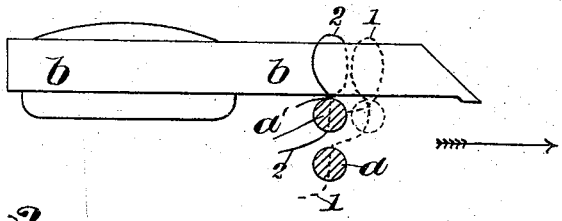


Fig. 2.

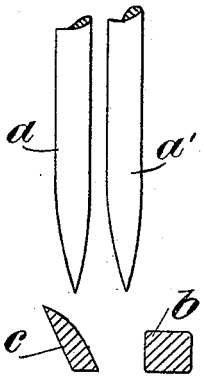


Fig. 3.

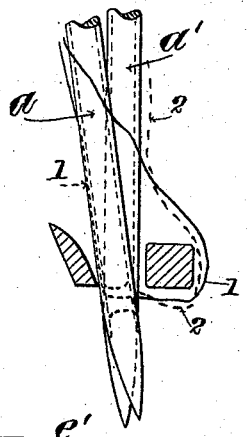
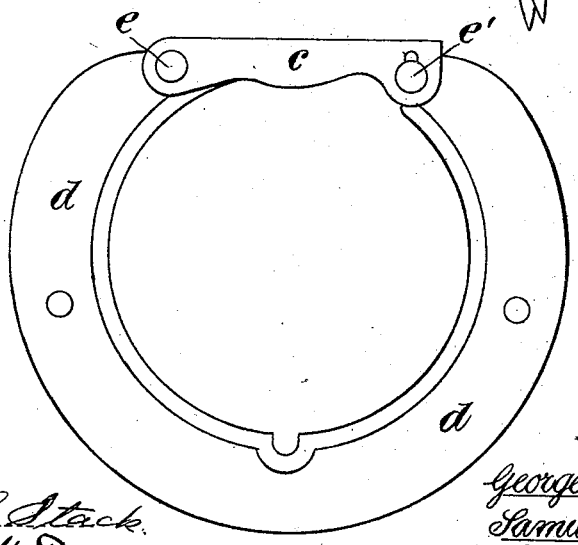


Fig. 4.



Witnesses.

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UNITED STATES PATENT OFFICE.

GEORGE SPEIGHT, OF BRADFORD, AND SAMUEL CHAPMAN, OF BLACKLEY, ENGLAND.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 494,039, dated March 21, 1893.

Application filed May 31, 1892. Serial No. 435,098. (No model.)

To all whom it may concern:

Be it known that we, GEORGE SPEIGHT, dry-salter, residing at Smith Street, Bradford, in the county of York, and SAMUEL CHAPMAN, machinist, residing at 70 Herbert Street, Blackley, in the county of Lancaster, England, subjects of the Queen of Great Britain and Ireland, have invented certain new and useful improvements in oscillating-shuttle and other sewing-machines and in the adaptation of the same for use in conjunction with appliances for button holing, embroidering, and the like; and we do hereby declare the following to be a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

Our said invention relates particularly to oscillating shuttle sewing machines but has reference also to other machines in which the shuttle oscillates or vibrates or revolves or works in the direction of the feed.

As is well known it is the custom in certain machines and for certain purposes such as button-holing and embroidering, to use two needles in conjunction with the ordinary needle bar. When the shuttle works at right angles to the direction of feed as for instance in the ordinary lockstitch Singer sewing machine, the duplication of the needles presents no difficulties seeing that the shuttle moves closely past the side of both. But where the shuttle oscillates or moves in the direction of the feed as for instance is the case in the oscillating shuttle machine, difficulties at once arise when it is desired to apply two needles. To overcome these difficulties we use means to deflect the lower part of the needle which is farthest off from the shuttle practically into line with the needle next to the shuttle after the needles or the former needle have or has passed through the fabric and at the times when the loops are thrown out in the path of the shuttle. By thus deflecting one needle into line with the other the loops are thrown simultaneously side by side into the path of the shuttle so that the shuttle thread locks both loops simultaneously which is the desired object. The deflecting part may consist of an inclined plate or surface fixed to or formed on any convenient part of the machine in juxtaposition to the needles. In an oscillating shuttle machine we prefer to mount the deflecting plate upon the cover ring which confines the shuttle and carrier in the race, but in other types of machines the said deflector might be otherwise mounted or fixed.

To render our invention perfectly clear we will now proceed to describe the same more particularly with reference to the annexed sheet of drawings.

The said drawings are enlarged diagrammatic views rather than exact representations of the objects, but we have chosen this mode of illustrating the description as more likely to be conducive to a clear comprehension of our invention.

Figures 1, 2, 3, and 4 illustrate our plan for deflecting one of the needles.

Referring to the said figures the outer needle is marked *a* and the inner *a'*. The oscillating shuttle *b* works in the direction of feed which is indicated by the arrow in Fig. 1. A thread 1 passes through the needle *a* and a thread 2 passes through the needle *a'*.

In order to enable the nose of the shuttle *b* to pass through the loops 1 and 2 we arrange that the needle *a* shall be deflected from the position shown in full lines Fig. 1 into the position shown in dotted lines so that it may throw out its loop 1 simultaneously and side by side with the loop 2 from the needle *a'* thus enabling the shuttle *b* to pass through both loops at the same time and so lock them by the shuttle thread. This deflecting of the needle *a* is brought about by placing an inclined plate or part *c* in the path of the downward stroke of the needle *a* so that after passing through the fabric and when approaching the position when the loop should be thrown out, the said needle *a* strikes upon the smooth inclined surface of the plate *c* and is pushed or deflected to one side toward the needle *a'*. Thus Fig. 2 shows the two needles side by side as they are descending after passing through the fabric and before the needle *a* is deflected by the plate *c*, while Fig. 3 shows the position assumed by the needle *a* after being deflected by the plate *c*. It will be seen that the needle *a* has been thrown into a position which for all practical purposes is in line with the needle *a'* so that when the loops 1 and 2

are thrown out on the upward stroke of the needle the said loops as shown in Figs. 1 and 3 are side by side and in the path of the shuttle *b* so that they are both engaged thereby and locked by the shuttle thread.

We have found in practice that the slight bending to which the needle is subjected does not affect its straightness when lifted free of the plate *c*.

The plate or deflector *c* when applied to an oscillating shuttle machine can we find be most conveniently mounted upon the cover ring *d* (see Fig. 4) which serves to confine the shuttle and carrier in the race as will be well understood by those conversant with sewing machines.

In Fig. 4 the inclined deflecting plate *c* appears, being fixed to the cover ring *d* by the studs *e e'*. The stud *e'* might pass through a slot in the plate *c* so as to allow the plate *c* to be moved a little up or down.

The arrangements hereinbefore described and illustrated may be used in conjunction with any suitable or known appliance for button-holing or embroidering.

We claim as our invention—

In a sewing machine and in combination with the stitch forming mechanism thereof comprising two needles and a loop-taker, the needles being arranged in a vertical plane at a right angle to the path of the loop-taker, of a pivoted, needle-deflecting cam-plate located in the same vertical plane with one of the needles, and means for adjusting said plate vertically, substantially as described.

This specification signed and witnessed the 6th day of May, 1892.

GEORGE SPEIGHT.
SAMUEL CHAPMAN.

Witnesses:
SAMUEL BRENTNALL,
JOSHUA ENTWISLE.