

J. H. SMITH.
Sewing-Machines.

No. 148,902.

Patented March 24, 1874.

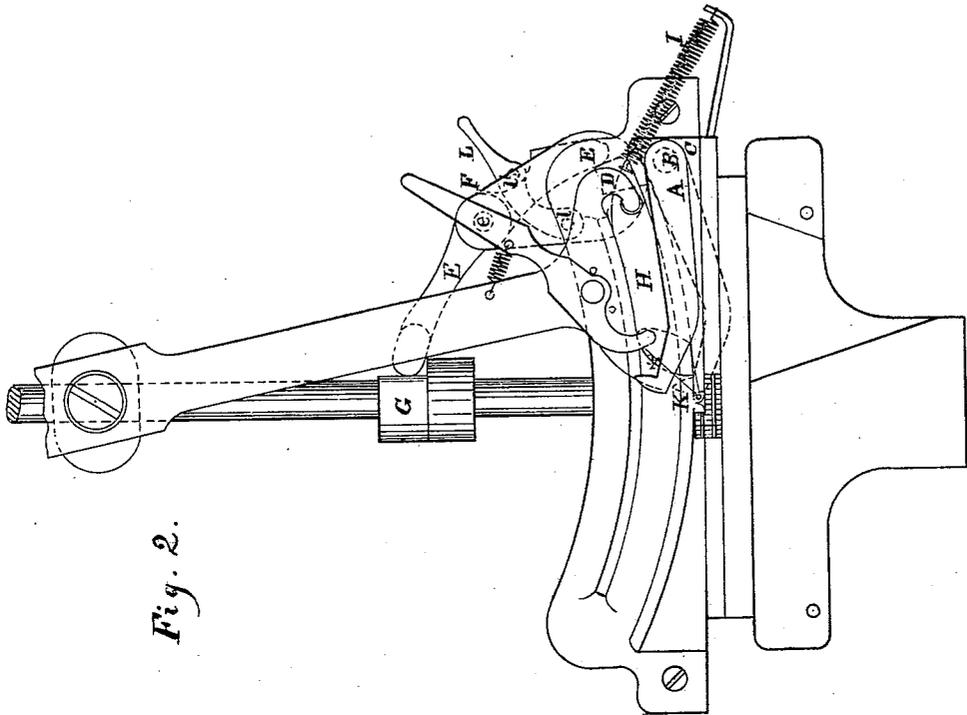


Fig. 2.

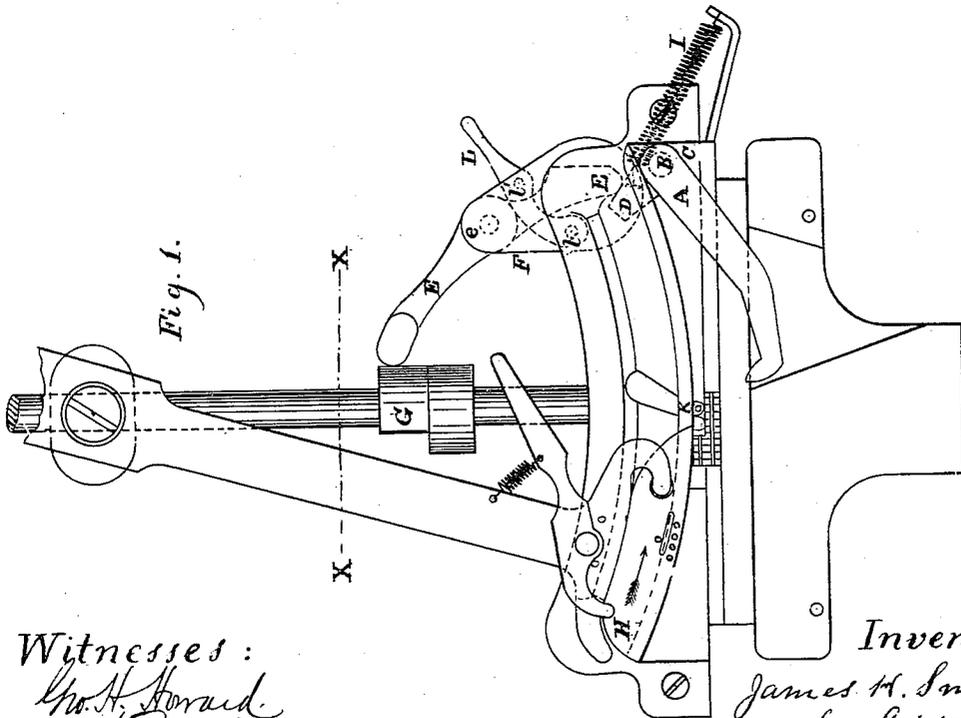


Fig. 1.

Witnesses:
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W. H. Paris

Inventor:
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Fig. 3

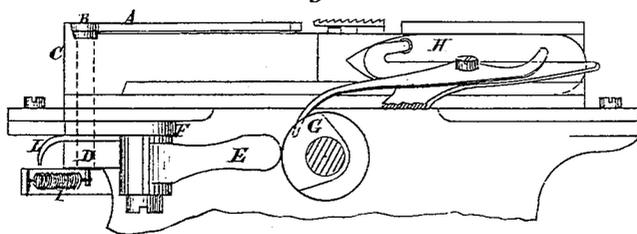


Fig. 7.

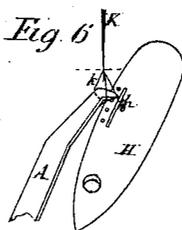
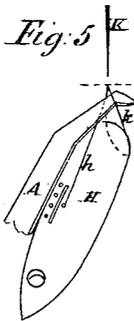
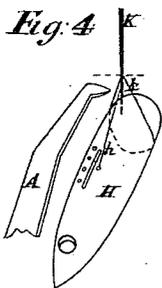
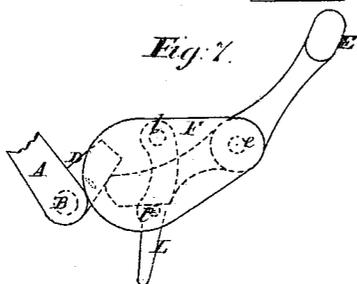
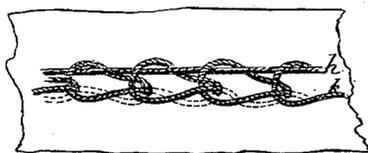


Fig. 8.



Witnesses:

W. H. Hornell.
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UNITED STATES PATENT OFFICE.

JAMES HENRY SMITH, OF LONDON, ENGLAND.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 148,902, dated March 24, 1874; application filed December 5, 1873.

To all whom it may concern:

Be it known that I, JAMES HENRY SMITH, of No. 4 Mary street, Arlington Square, in the county of Middlesex, England, have invented an Improvement in Shuttle Sewing-Machines; and do hereby declare that the following description, taken in connection with the accompanying drawings hereinafter referred to, forms a full and exact specification of the same, wherein I have set forth the nature and principles of my said improvement, by which my invention may be distinguished from others of a similar class, together with such parts as I claim and desire to secure by Letters Patent—that is to say:

My invention relates to that class of sewing-machines known as shuttle sewing-machines; and the nature thereof consists in certain improvements in the construction of the same and novel combinations of the parts thereof, hereinafter shown and described. Furthermore, the mechanism by which the thread-holder receives its motion is so arranged that it can be thrown out of gear, even while the machine is at work, whereby the machine is also enabled to produce the ordinary lock-stitch, and to change from one kind of stitch to another at the will of the operator.

My said invention will be readily understood from the accompanying drawings, in which Figure 1 shows a part plan of a shuttle-machine with my improvement applied thereto, the shuttle being in its most backward position. Fig. 2 shows the same view with the shuttle passing through the loop of the needle-thread. Fig. 3 shows a sectional elevation on line X X, Fig. 1. Figs. 4, 5, and 6 show perspective views of the thread-holder, shuttle, and needle in their different relative positions, and Fig. 7 shows a plan of the device for throwing the thread-holder in or out of gear.

A is the thread-holder or hook, fixed on a spindle, B, passing through the framing C, and carrying beneath the same a finger, D. A lever, E, pivoted at *e* to a bracket, F, is actuated by a cam, G, on the feed-motion shaft, so as to press back the finger D, and with it the spindle B and thread-holder A, into the backward position shown in Fig. 1, during the backward motion and part of the forward motion of the shuttle H, while, during the re-

mainder of the forward motion of the shuttle, the retreating surface of the cam allows the spring I, connected at one end to the framing and at the other end to the finger D, to draw the finger back against the action of the lever, and thus to turn the thread-holder A into the forward position shown in full lines in Fig. 2. From this arrangement, it will be seen, that when the shuttle is passing through the loop *k* of the needle-thread, the thread-holder A advances into the position shown in Fig. 4. On the further advance of the shuttle, and when the loop is about to leave it, the thread-holder advances into the loop, as shown at Figs. 2 and 5, so that when the loop leaves the shuttle it is caught by the thread-holder. The latter is then made, by the action of the cam G and lever E, to retreat with the loop *k* into the position shown in Fig. 6, and in dotted lines in Fig. 2, with the shuttle-thread *h* passing through the loop back to the last stitch. While the thread-holder is in this position the needle K, in descending, passes through the loop, carrying the loop for the next stitch through with it, and the thread-holder, in then retreating into the position shown in Fig. 1, leaves the loop *k* on the needle. By this means a compound lock and chain stitch, or "looped lock-stitch," is formed, of which a plan to a magnified scale is shown at Fig. 8, where *h* is the shuttle-thread passing through the loops of the needle-thread *k*.

It will be evident that if there be no thread in the shuttle, a simple chain-stitch will be produced by the above operation.

L is a lever, pivoted at *l* to the bracket F, and having a stud, *l'*, in such a position that, when the lever is moved by hand into the position shown at Fig. 7, the stud *l'* presses the lever E back, so as to be out of contact with the cam G, whereby also the thread-holder A is held in the backward position, and is consequently prevented from performing the above-described operation. In this case, the machine makes the ordinary lock-stitch. By simply throwing the lever L back into the position shown in Fig. 1, the thread-holder A will be brought into action again, and it will be seen that the throwing into or out of action of the thread-holder may be readily effected while the machine is working.

In the drawings, my invention is shown as applied to machines with a curved shuttle-race, such as the "Wanzer" machine. It is, however, equally applicable to shuttle-machines of other construction.

Having thus described the nature of my invention, and in what manner the same is to be performed, I claim—

1. In shuttle sewing-machines, the thread-holder A, operating in combination with the finger D, spring I, lever E, and cam G, for producing a looped lock-stitch or chain-stitch, substantially as hereinbefore described.

2. The lever L, operating in combination with the lever E, for throwing the thread-holder A in or out of action, substantially as described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses this 1st day of October, 1873.

JAMES HENRY SMITH.

Witnesses:

CHAS. D. ABEL,
JNO. P. M. MILLARD.