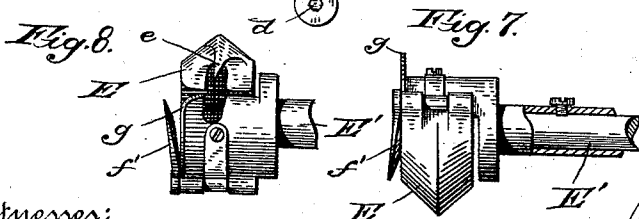
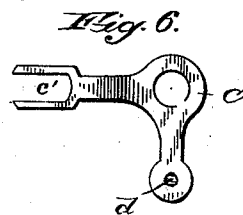
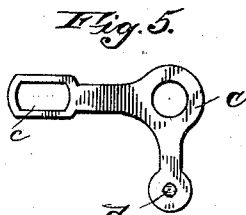
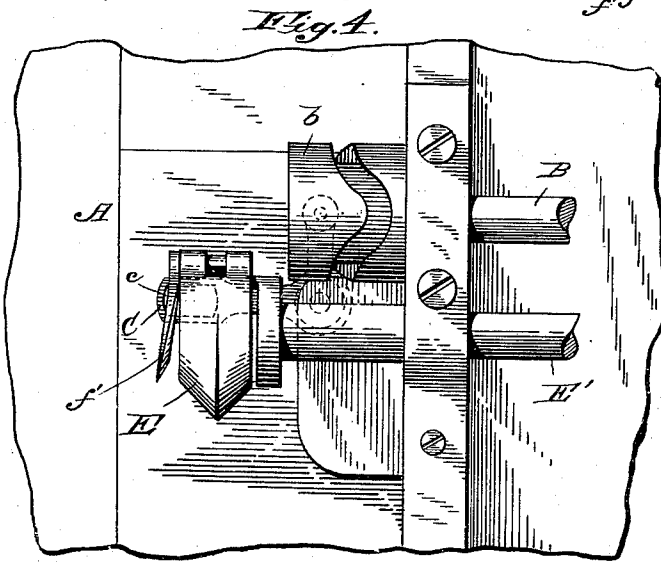
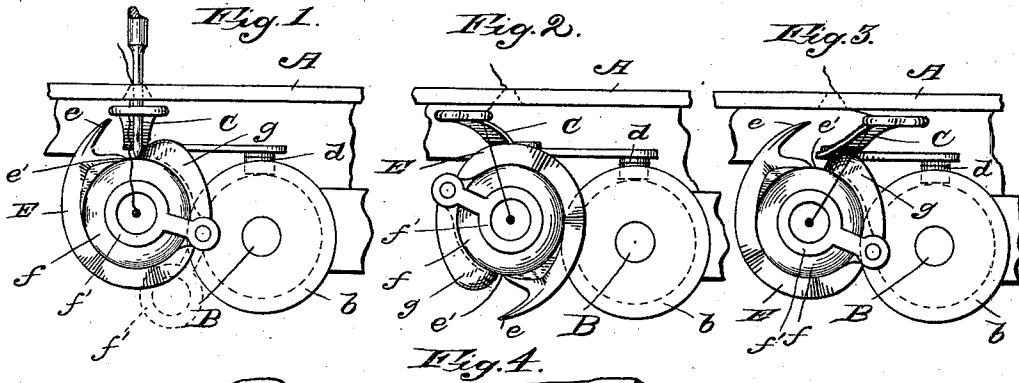


(No Model.)

J. VANNETTE.
SEWING MACHINE.

No. 545,924.

Patented Sept. 10, 1895.



Witnesses:
A. Lushman
C. M. Sweeney

Inventor:
Jasper Vannette
by Macleod, Calver & Randall,
his Attorneys.

UNITED STATES PATENT OFFICE.

JASPER VANNETTE, OF TIFFIN, OHIO, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, OF NEW JERSEY.

SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 545,924, dated September 10, 1895.

Application filed June 27, 1892. Serial No. 438,167. (No model.)

To all whom it may concern:

Be it known that I, JASPER VANNETTE, a citizen of the United States, residing at Tiffin, in the county of Seneca and State of Ohio, have invented certain new and useful Improvements in Thread-Controlling Mechanism for Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to that class of sewing-machines for forming lock-stitches by means of an under thread carried by a hook or shuttle co-operating with a needle which carries the upper thread; and it has for its object to provide a take-up or controller for the under thread which is arranged to be vibrated across the vertical path of the needle.

My improved thread-controller is more particularly designed for co-operation with oscillating hooks such as shown by my Patent No. 336,456, dated February 16, 1886, but may also be used in connection with other stitch-forming mechanisms employing an under or locking thread, if desired. In the operation of oscillating hooks which entirely support and carry the bobbin-case and bobbin, as shown by my said patent, experience has demonstrated that in making long stitches there is an objectionable friction between the inside of the hook and the periphery of the bobbin-case, and which friction my invention has for its object to obviate by the use of a thread-slackening lever or controller.

In the accompanying drawings, Figure 1 is a partial front view of a sewing-machine illustrating the operation of my invention, and Figs. 2 and 3 are similar views showing the same parts in different positions. Fig. 4 is a partial bottom view of a sewing-machine embodying my invention. Fig. 5 is a detail view of the form of take-up or thread-controller which I prefer to employ, and Fig. 6 is a similar view of a slightly-modified form of controller-lever. Figs. 7 and 8 are detail views of the oscillating hook.

A denotes a portion of the work-plate of a sewing-machine, and B a rotating shaft arranged beneath said work-plate and carrying a cam *b*. Pivoted to a suitable plate or bracket *a* beneath the work-plate A is the thread-controlling lever C, herein shown as

made in the form of a bell-crank and provided at its outer end with an enclosed opening *c*. The inner arm of said lever is provided with a pin or roller *d*, which enters the groove of the cam *b*, which latter serves to vibrate the said lever.

E denotes a hook carried by an oscillating shaft E', the said hook being essentially the same in construction and operation as that shown by my Patent No. 336,456, hereinbefore referred to, in that it is provided with a loop-seizing beak *e* and with a mouth or thread-escape passage *e'* between said beak and the heel portion of the hook. The said hook is furnished with a thread-carrying bobbin contained within the bobbin-case *f*, the latter having a suitable opening, from which the thread emerges, and the said bobbin-case being in practice provided with a suitable tension device. The bobbin-case is retained in the hook by a swinging latch *f'*, which may be swung aside, as shown in dotted lines in Fig. 1, for the insertion or removal of the bobbin-case and bobbin. In the operation of this oscillating hook the beak thereof advances, after the needle has descended to its lowest point and has commenced to rise, and seizes the loop of needle-thread thrown out from said needle, the hook continuing its forward movement until it has performed slightly more than a half-revolution to carry the loop of needle-thread around beneath the center of the bobbin-case contained in said hook. The hook now reverses its movement, so as to bring the mouth *e'* thereof again upward, when the loop of needle-thread is drawn up by the usual take-up above the work-plate and out of the said mouth; but in this operation of carrying the needle-thread around the bobbin-case there is sometimes an objectionable friction, which it is the design of my special thread-controller, when used in connection with this form of lock-stitch mechanism, to lessen. By reference to Fig. 1 it will be seen that its opening *c* is immediately below the needle-opening in the work-plate; so that as the needle descends it passes through the said opening of the thread-controller. When the needle has risen and the oscillating hook has moved around to the position shown in Fig. 2,

at which time the loop of needle-thread has been partly carried around the bobbin-case by the oscillating hook, so as to be drawn up around the last side of the bobbin-case by the usual take-up above the work-plate, the thread-controller C has moved to the position shown in the said Fig. 2, thereby drawing the bobbin-thread taut and by the tension thereon slightly lifting the bobbin-case in the oscillating hook, so that the loop of needle-thread may pass around the lower side of the bobbin-case with but little friction. When the oscillating hook has completed its backward movement and is in the position shown in Fig. 3, the thread-controller has moved to the opposite or forward side of the vertical path of the needle for the purpose of drawing off sufficient thread from the bobbin to permit of the easy formation of the next succeeding stitch.

My improved thread-controller is more particularly desirable or necessary when very long stitches are being made, as in such operation of the machine the bobbin-thread requires to be manipulated in the manner described in order to enable the machine to run perfectly.

In order to prevent the bobbin-thread which has been slackened by the thread-controller C from catching on the point or beak of the oscillating hook when the latter has moved forward, I provide the outer portion of the said hook with a peripheral flange *g*, which serves as a guard to hold the slackened bobbin-thread away from the point or beak of the hook. The end of the said flange *g* adjacent to the mouth or opening *e'* is preferably curved inwardly, as more clearly shown in Fig. 8, and it also tapers down to a blunt point, this construction thereof preventing the bobbin-thread from catching thereon or getting under the same in operation.

Instead of providing the outer arm of the thread-controlling lever with an inclosed opening *c*, as shown in Fig. 5, the said lever may be forked at its outer end, as shown in Fig. 6, or, in other words, the said opening *c'* of the form of lever shown in Fig. 6 will consist merely of the space between two prongs of the fork instead of being an inclosed opening or slot, as shown in Fig. 5.

Having thus described my invention, I

claim and desire to secure by Letters Patent—

1. In a sewing machine, the combination with the needle, of an oscillating hook having a bobbin case for containing a bobbin and which bobbin case is supported and carried by said hook, the latter being provided with an opening or mouth between its beak and heel, and a horizontally placed thread controller arranged beneath the work-plate of the machine and having an opening through which the said needle descends and the outer arm of which controller is vibrated across the vertical path of the needle in a direction transversely of the machine or approximately in the line of the feed of the work.

2. In a sewing machine, the combination with the needle, of the thread controller C having a slot or opening arranged to cross the vertical path of the said needle, the rotating cam by which said controller is operated, and the oscillating hook E having a beak *e* and a mouth or thread escape passage *e'* between said beak and the heel of the hook, the body of the hook being provided with the peripheral flange or guard *g* to hold the slackened bobbin thread away from the beak of the said shank.

3. In a sewing machine, the combination with the needle, of the thread controller C having a slot or opening arranged to cross the vertical path of the said needle, the rotating cam by which said controller is operated, and the oscillating hook E having a beak *e* and an opening or mouth or thread escape passage *e'* between said beak and the heel of the hook, the body of the hook being provided with the peripheral flange or guard *g* to hold the slackened bobbin thread away from the beak of the said hook, and the end of said flange, adjacent to said mouth or thread escape passage, being curved inwardly and tapered to a blunt point, substantially as shown and described.

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

JASPER VANNETTE.

Witnesses:

C. J. YINGLING,
J. C. STONE.