

(No Model.)

J. BIGELOW.

THREADING DEVICE FOR SEWING MACHINES.

No. 536,847.

Patented Apr. 2, 1895.

Fig. 1.

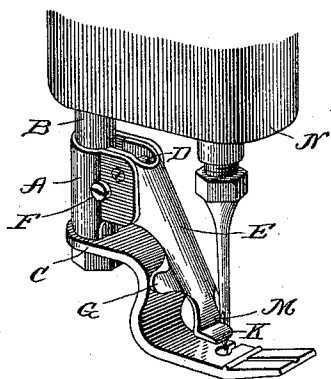


Fig. 2.

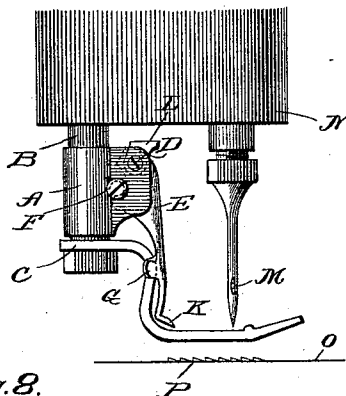


Fig. 8.

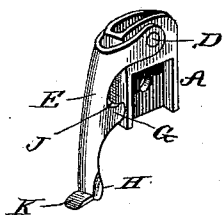


Fig. 3.

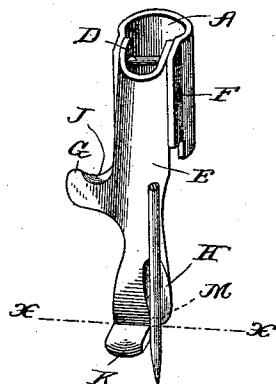


Fig. 5.

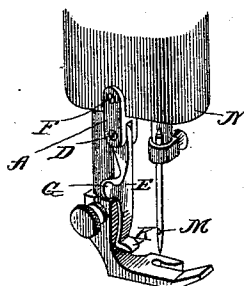


Fig. 4.

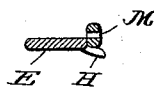


Fig. 6.

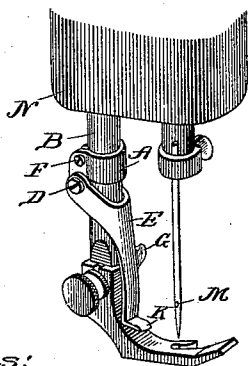


Fig. 7.

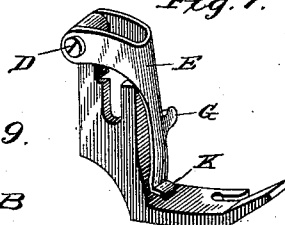
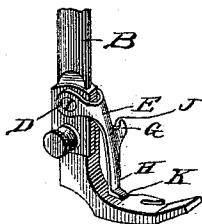


Fig. 9.



Witnesses:

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THREADING DEVICE FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 536,847, dated April 2, 1895.

Application filed February 10, 1894. Serial No. 499,774. (No model.)

To all whom it may concern:

Be it known that I, JOHN BIGELOW, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Threading Devices for 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 eyeless threaders for sewing machines and consists in the novel construction and combination of parts hereinafter fully described and claimed.

In the accompanying drawings: Figure 1, is a perspective view of my threading device, attached to the presser bar of a sewing machine, and shows its position, for threading the needle. Fig. 2, is a side view of my threading guide, in position when not in use. Fig. 3, is a detail in perspective showing the device as in use, needle broken off. Fig. 4, is a sectional view on the line $x-x$ of Fig. 3, showing the offset and needle gage H, and the relation of all to the eye of the needle M, (also in section) when in position for threading. Fig. 5, shows my open angle threading guide adapted to be attached to the head of a sewing machine. Fig. 6, shows a modification of construction, the pivot of the arm E, being thrown to back of presser bar and friction on swinging arm E, being obtained by tightening pivot screw D; Fig. 7, shows my device adapted to be attached to the presser foot of a sewing machine; Figs. 8 and 9, details showing the device attached to presser bar by the same screw that attaches presser foot.

The method of attaching my threading guide to the various sewing machines may be modified to meet their special requirements; but, for illustration, I will explain it as applied to a Willcox & Gibbs machine.

In the accompanying drawings similar letters refer to similar parts throughout the several views.

N, shows the line of the head of the machine; O, the work plate; P, the feed.

Around the presser bar B, Figs. 1 and 2, above the foot C, I place a strap A. Between

the extended ends of said strap, swinging in a vertical plane on the pin D, is one end of the arm E. The screw F, engages the two sides of the strap A, and by being tightened, will cause said strap to grasp the presser bar B, immovably, and will also cause the extended sides of said strap A, to press and make friction on the sides of the arm E, held between them, on the pin D. This friction causes the free end of the arm E, to remain, wherever set. At either side of the arm E, which may be desired, is a small finger piece G, projecting beyond the line of the presser foot to assist in swinging forward or back its free end, which carries the open angle thread guide, made by the lip K. On its upper edge the piece G, may be sharpened at J, Fig. 3, and so made a thread cutter.

At its free end, the arm E, has a lip K, bent angular with its body, forming an open thread guide the walls of which are in approximate planes meeting each other at an angle. The end of the arm E, and its lip K, are of sufficient width to steady the eye of the operator, and, the angle being open, he can watch the movement of his thread, as he passes it along the line of the angle, when threading. Again, when threading, the angle makes a single open directing line straight to the eye of the needle, so that, from the time the point of the thread touches the angle, it has a definite guide and its course does not change until it enters the needle eye M. Of course the arm E, swings in a plane that will bring the lip K, in front of needle and the open line of its angle directly opposite to the needle eye, that is, the sides of the angle will coincide with the bottom and back side of said needle eye, when in position for threading. The arm E, also, has a retiring offset H, at its threader end, on a line with the inner edge of its lip K, and extending from its angle, upward, as far as the needle touches it, when it is forward, in position for threading, Fig. 3. This offset has a plane of vibration, which is crossed by the needle, and acts as a gage Fig. 4, allowing for the thickness of the needle between its outside edge and the inner edge of its eye, so that the body of the needle shall not project beyond the open line of the angle and interfere with the free passage of the point of

the thread into the needle eye. The offset H is retiring, Fig. 4, to allow for different sized needles.

In use, the needle bar and presser bar are raised to their highest point. The strap A, should be immovably fastened to the presser bar B, by the screw F, in such a position that the free end of the arm E, (pivotally attached at D) shall swing in a vertical plane, that will bring its lip K, in front of the needle, and the gage H, will touch the side of the needle, leaving the open line of the threader angle leading direct to the open needle eye Figs. 1, 3 and 4. It only remains to pass the point of the thread along the angle and it will enter the needle eye. The free end of the arm E, or threader should then be pushed back against the presser foot Fig. 2, out of the way, but, in case it is forgotten, the end of the needle bar, as it comes down, will hit and knock it back and no harm be done.

The arm E, carrying the threader described, can be made to swing from the presser foot, Fig. 7, or from the head of the machine Fig. 6, or swing in a horizontal plane on the presser bar or foot being substituted for some of the funnel and tapering aperture devices, already patented.

Instead of friction, at its pivoted end, being used to keep the free threader end of the arm E, in any position, forward or back, desired, springs or catches can easily be substituted:—for instance, by making holes through the sides of the strap A, and corresponding swells on the sides of the arm E, (which can be made springy) to engage said holes, when its threader end is in the positions desired.

The threading angle of the arm E, can be variously shaped from a right to an acute angle or slightly rounded; provided that it is open, has a single line of direction leading, when in position, to the needle eye, and its plane is practically horizontal to the operator, which I prefer.

It is often objectionable to raise the presser foot from the work beneath it, in order to thread the needle. This difficulty can be easily removed by placing an indicator point on the presser bar, when my threader is attached to it or the presser foot, Fig. 7, with which some designated point on the needle bar can be brought in line, and thus, the proper point of the needle eye be established, at whatever position the presser foot may be and without changing the same.

The upper edge of the strap A, and the bottom of the needle bar can be used as such indicator points, or a special pointer L, Fig. 2,

can be made to swing up into position or down out of the way within the sides of the arm E, on the pin D.

The bottom of the strap A, rests on the top of the presser foot C, Fig. 2. It is apparent, then, that, if the screw F, is not tightened, the strap A, can swing horizontally on the presser bar, carrying the arm E, with it, and, thus, my threading guide have both a horizontal and vertical movement.

While I have above explained how my invention may be applied to and used with a Willcox & Gibbs sewing machine, I have illustrated in Figs. 6 and 7, how it can be used with a Singer machine; but it will be evident to all skilled in this art that the adaptation of my invention to any type of sewing machine now in use is merely a matter of mechanical skill.

The gage H, instead of being an offset as shown may be a stop applied at the opposite end of the arm E, or any suitable device which will bring my open angle threader into proper relation to the needle eye for threading. Again, instead of being applied to an arm swinging vertically, as shown, my open angle threader may be applied to a device swinging horizontally, as will be obvious.

By the words "machine head" I mean not only the frame of the machine but the presser bar, presser foot, or any other part to which the arm E, can be attached so as to be moved into any suitable relation to the needle eye for the purpose of threading.

What I claim is—

1. An eyeless threader for sewing machines, comprising an inclined arm pivoted at its upper end to the machine head and having at its lower end an open guide the walls of which are in approximate planes meeting each other at an angle and provided at its needle engaging side with an offset or gage for the needle to be threaded, whereby the open guide in the threader forms a continuous way into the eye of the needle, as set forth.

2. An eyeless threader for sewing machines, consisting of an arm adapted to be pivotally attached to the head of the machine and having a needle gage and an open thread guide the walls of which are in approximate planes meeting each other at an angle, substantially as shown and described.

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

JOHN BIGELOW.

Witnesses:

BERNHARD BURNES,
EDWIN K. FAIRCHILD.