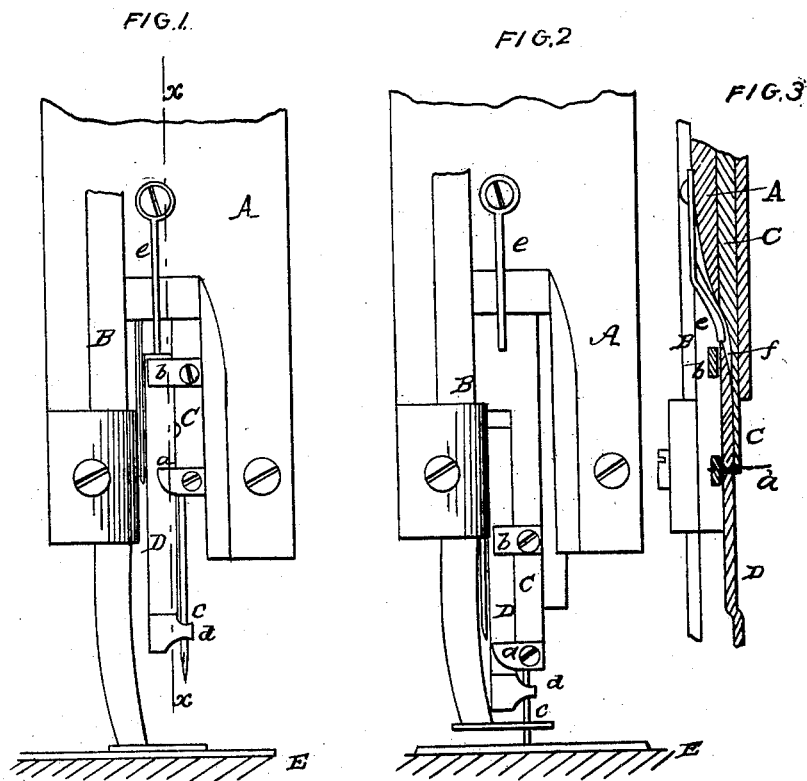


E. E. BEAN.
Sewing Machine.

No. 51,890.

Patented Jan'y 2, 1866.



WITNESSES
Wm. Brown
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INVENTOR
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By *[Signature]*

UNITED STATES PATENT OFFICE.

E. E. BEAN, OF ABINGTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF AND JACOB CHICKERING.

IMPROVEMENT IN SEWING-MACHINES.

Specification forming part of Letters Patent No. 51,890, dated January 2, 1866.

To all whom it may concern:

Be it known that I, E. E. BEAN, of Abington, in the county of Plymouth and State of Massachusetts, have invented a new and useful Improvement in Sewing-Machines; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a front elevation of so much of a sewing-machine as it is necessary to show in order to illustrate my invention. Fig. 2 is a like elevation, the needle being shown in the act of penetrating the material to be operated on. Fig. 3 is an elevation of a section taken on the line *x* of Fig. 1.

Similar letters of reference indicate like parts.

The object of this invention is to guide and support an eye-pointed needle of a sewing-machine during its descent into the cloth, and also to support the needle while the feed is taking place.

The invention is applicable to all descriptions of sewing-machines operating with reciprocating eye-pointed needles which feed the cloth.

A designates the needle-arm of a sewing-machine, and E the cloth-bed.

B is the shank of the presser, whose foot is here shown resting on the material to be operated upon.

C designates a needle-carrier whose needle *c* is of the kind called "eye-pointed." The needle-carrier here shown is of the kind which has lateral as well as vertical movements in order to cause the needle to effect the feed of the material which is being sewed; but since the devices which effect its movements are not embraced in my invention I have not shown them. In sewing-machines of this kind—that is to say, of the kind known as "needle-feed" machines, in which the material is fed along by means of the needle—it is desirable to guide and support the needle which immediately effects the feed in such a manner as to prevent it from getting out of its true path. When it gets out of its true path the seam becomes irregular and the needle and its connections are more or less liable to become bent or

broken. My invention consists in means for not only guiding the needle, but also for supporting it while it is moving or feeding the material which it has penetrated.

D is a small bar which is fitted in a recess or groove on the face of the lower part of the needle-carrier. It should fit in the recess or groove so as to move snugly, sufficient friction being produced between it and the sides of the groove to prevent it from falling or sliding down from the effect of gravity. The upper inner side of the bar is cut away, as seen at *f* in Fig. 3, and that part of the bar is caused to set or to bend outward in a slight degree for the reason hereinafter set forth. The bar D is kept in the groove of the needle-carrier by means of the short clamping-bars *a b*, which are set transversely over the face of the bar D, both being fixed, by screws or other convenient means, to the face of the needle-carrier, and the lower transverse locking-bar may be secured by the same screw which secures the needle in its place. The foot of the vertical bar D has a socket, *d*, formed on that side which is adjacent to the needle, through which the needle is passed when it is to be fixed in the carrier. The socket *d*, of course, is to be in the same vertical line in which the needle moves, and in this example I have bent the lower end of the bar D backward to bring the socket in the right line.

The letter *e* designates an arm hanging down from the face of the needle-bar in front of the needle-carrier and in line with the bar D. The lower end of the arm is bent inward, so as to come into the groove in which the bar D moves at every ascent of the needle-carrier. When the needle-carrier descends, after the groove which receives the bar D has moved past the end of the arm *e*, the latter rests against the face of the needle-carrier, and when the latter ascends again the arm, being elastic, falls again into the groove, and the upper end of the bar D, which will be moving upward along with the needle-carrier, strikes against the foot of the said arm, and is thereby held stationary while the carrier and the needle continue their ascent. These parts, on the completion of the needle-carrier's ascent, will be about in the relative position shown in Fig. 1, the socket *d* embracing the needle near its eye, and the upper part, *f*, of the bar D coming

against the clamp or locking bar *e*, whose action thereon is to crowd the bar against the back of its groove and so cause it to remain stationary by means of pressure. The upper part of the bar is made elastic, so that it will resume its former position—to wit, protruding slightly beyond the face of the carrier—so soon as the clamp *b* passes from behind it. When the needle-carrier descends the bar *D*, being thus held firmly in its groove, descends with it until it meets the presser-foot or the material being perforated, when it rests on one or the other, as the case may be, and is stopped in its descent, while the needle moves through the socket *d* to its lowest stage, at which time the needle-carrier will have moved down far enough along the bar to bring the top of the groove almost down to the top *f* of the bar. Since the feed takes place in needle-feed machines while the needle is in the material, and since at this time, by my invention, the needle is held and supported in the socket of the bar at or near the surface of the bed on which the material lies, near which bed, either above or below it, the power which accomplishes the feed is applied to the needle, it follows that the needle will be supported and sustained by the strength of the bar *D* against the force of the moving power, and they will be less liable to become bent or broken, because the point of support—to wit, the place of the socket *d*—is so near the place where the power is applied to the needle. It results from this invention, also, that since the needle is held firm and stiff while it is being made to propel the material which it has perforated the stitches or perforations will be uniform in their distances apart.

It will be observed that in the operations of

the needle-carrier the needle is always embraced at a low point during its descent, and the bracing device never passes below the eye of the needle, and thus it is held steadily in its true line of descent, having the assistance of that end of the bar which moves downward along with it.

The action of the arm *e* may be produced by various other devices, as by fixed stops and by dogs which may be thrown into and out of the path of the bar *D* by the movements of the needle-carrier. When the device here shown is used the foot of the arm should be made of sufficient diameter or be so adjusted as to insure its action on the bar.

I do not claim supporting or bracing a crochet needle or hook or awl; neither do I claim a stationary support for the eye-pointed needle, as I am aware that such devices have been hitherto employed.

I claim as new, and desire to secure by Letters Patent—

1. In sewing-machines in which the feed is effected by an eye-pointed needle, a support or brace for the needle which slides vertically and whose lateral movement coincides with that of the needle, substantially as described.

2. The bar *D*, sliding in and vibrating with the needle-bar, and employed in combination with the hanging-bar *e*, or its equivalent, and eye-pointed needle, in the manner and for the purpose explained.

The above specification of my invention signed by me this 20th day of May, 1865,

E. E. BEAN.

Witnesses:

N. W. STEARNS,

P. E. TESCHEMACHER.