

(No Model.)

W. R. PARSONS.

HEMSTITCHING ATTACHMENT FOR SEWING MACHINES.

No. 304,447.

Patented Sept. 2, 1884.

Fig. 1.

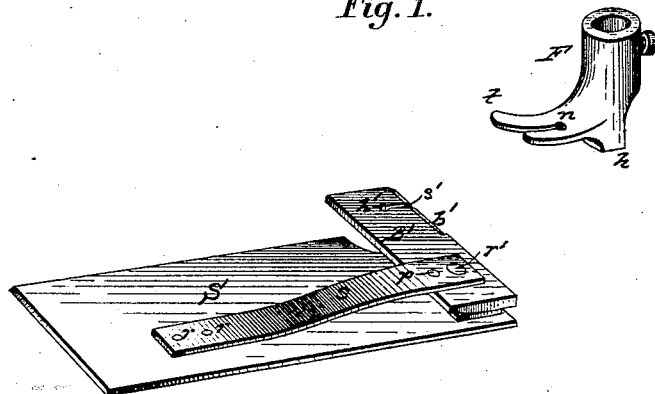


Fig. 2.

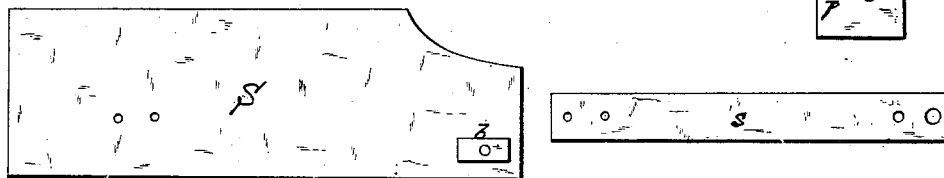
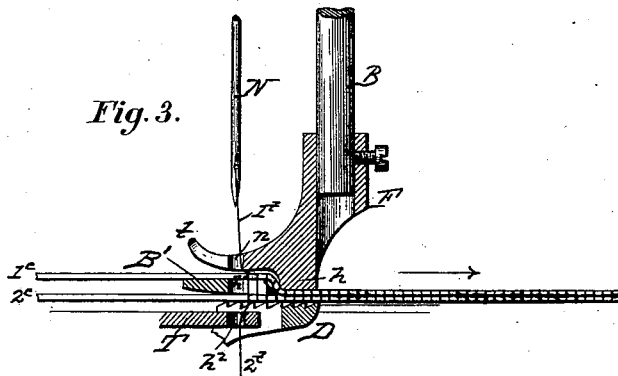


Fig. 3.



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HEMSTITCHING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 304,447, dated September 2, 1884.

Application filed July 14, 1883. (No model.)

To all whom it may concern:

Be it known that I, WINSLOW R. PARSONS, a citizen of the United States, residing at Waterloo, in the State of Iowa, have invented a new and useful Improvement in Hemstitching Attachments for Sewing-Machines, of which the following is a specification.

For years operators of sewing-machines have folded paper and placed it between two pieces of cloth and then sewed through all, the paper being subsequently torn out to produce an open-stitch seam as wide as the paper was thick. This style of seam, generally known as "machine hemstitching," was and is much admired; but its production in the manner above stated is a difficult task, and only a limited length thereof can be so produced in practice.

Mechanical devices in the shape of attachments to sewing-machines for producing the same stitch continuously have been made, and some of these include a separating block or bar as a substitute for the said paper, for forming said stitch on the same principle.

My present invention consists in certain novel attachments of the class last named, and certain novel combinations of parts and features of construction peculiar thereto, as used upon and constructed for use upon an under-feed lock-stitch sewing-machine as substitutes for its ordinary presser-foot and front shuttle-race slide, in the manner and for the purposes hereinafter set forth.

A sheet of drawings accompanies this specification as part thereof. Figure 1 of these drawings is a perspective view of my said attachments. Fig. 2 is a top view of the parts of the shuttle-race-slide attachment disconnected, and Fig. 3 is a vertical section through the attachments as applied to a sewing-machine, showing those parts of the latter which directly coact with the attachments, and illustrating the operation.

Like letters of reference indicate corresponding parts in the several figures.

These hemstitching attachments consist of a special presser-foot, F, Figs. 1 and 3, and the said "shuttle-race-slide attachment," which is composed of a front slide, S, suited to the machine, a separating block or bar, B', and a

spring, s. (Seen united in Fig. 1 and disconnected as aforesaid in Fig. 2.) The principal working parts are the said presser-foot F and separating block or bar B'. Of these, the former is fitted to the presser-bar B, and is so proportioned as to fit over or match the feed-dog D of the machine, and the said separating block or bar B' being attached to the said presser-bar as a substitute for the ordinary presser-foot, as seen in Fig. 3. It is constructed with a downwardly-projecting heel, h, which coacts with the feed-dog D behind the path of the needle N, and renders the front end or toe end t of the foot elevated. Said heel h thus operates as an elevating-support for the body of the foot, and is so proportioned to said block or bar B' in vertical thickness and so located with reference to the latter that when said block or bar rests on the lower piece of cloth, 2°, as seen in Fig. 3, a clear space is formed immediately above said block or bar, beneath the elevated toe end t of the foot, for the free passage of the upper piece of cloth, 1°, over said block or bar, while a like clear space or passage is formed immediately behind said block or bar B', in front of said heel h, for the descent of said upper piece of cloth to and beneath the pressing-surface formed by the sole of said heel to be acted on by the feed simultaneously with the lower piece of cloth. Said toe end of the presser-foot contains its needle hole or notch n, and may be bifurcated, as shown, or of any other approved shape. Said separating block or bar B' is provided at its left-hand end with a needle-hole, h', which is made to coincide exactly with the needle-hole h, Fig. 3, of the throat-plate T of the machine, as well as with the said needle hole or notch n of the presser-foot F, when the attachments are applied. A slit, s', extends from said needle-hole h' through the rear edge of the separating block or bar, for the escape of the stitches in the direction of feed, and this rear edge is rounded or beveled on top, as represented at b', and the front edge of the heel h is correspondingly shaped, so that the upper piece of cloth, 1°, shall have a curved path over the former to further facilitate its passage. Said spring s is the effective support of said separating block or bar B', and is made in the form

of a flat bar. It is attached to said shuttle-race slide S and said separating block or bar by rivets *r* and *r'*, and the latter, being single, is supplemented by a small stud-pin, *p*, on the block or bar occupying a snugly-fitted hole in the spring to preclude turning.

The object of this construction of the spring and this mode of uniting the parts is to render the attached block or bar stationary or unyielding in the direction of feed indicated by an arrow in Fig. 3, or in a reverse direction, but "elastic" or yielding vertically, so as to rise and fall with the feed-dog and presser-foot.

To support the outer or right-hand end of the separating block or bar, so that the block or bar shall sit or rest level on the feed-dog or throat-plate, a "bolster," *b*, is formed on the top of the shuttle-race slide S, as best seen in Fig. 2.

I have described in detail that embodiment of my invention which I consider the best. It may be modified in many unessential particulars within the scope of the respective claims hereinafter set forth, as those skilled in the art will understand.

With the attachments as above specified in position upon an under-feed lock-stitch sewing-machine, the operation, as illustrated by Fig. 3, is as follows: The machine is threaded with an upper thread, *1'*, and an under thread, *2'*, or in customary manner. The upper piece of cloth, *1*, is passed through above the separating block or bar *B'*, and the other piece of cloth, *2*, is passed through beneath it. The presser-foot *F* is lowered, and by its heel *h* rests upon the cloth immediately behind said block or bar, and holds both pieces of cloth in mesh with the teeth of the feed-dog *D*, while the upper cloth is left free to pass above said block or bar and between its rear edge and said heel of the presser-foot. The sewing then proceeds. As the stitches are formed and drawn tight with said block or bar *B'* interposed between the two pieces of cloth in front and to a short distance behind the needle, each stitch has a surplus length between the respective inner surfaces of the two pieces of cloth, by which the hemstitching effect is produced. As the stitches are not drawn tight by the take-up until the feed has acted, and it is essential that the separating block or bar shall be between the pieces of cloth at and slightly beyond the point at which the tightening of the stitches takes place, it will be obvious that said block or bar must in all cases extend in width beyond the needle a distance somewhat in excess of the greatest length of stitch ordinarily used. The width and openness of the hemstitching are varied by regulating the feed for length of stitch, and the respective tensions of the machine for more or less openness within the limits of the attachments. The latter are determined by the vertical thickness of said separating block or bar. The

hemstitching may, furthermore, be formed as near the edges of the pieces of cloth as may be desired, which is important in making ruffling. The said separating block or bar may be made of suitable metal, or of glass, vulcanite, or any other suitable material affording smooth, hard surfaces. The other parts may be made of steel and of iron, or of other metals commonly used in making sewing-machine attachments.

Having thus described my said hemstitching attachments for sewing-machines, I claim as my invention—

1. The combination, on an under-feed sewing-machine, substantially as hereinbefore specified, of a separating block or bar projecting in front of and a short distance behind the path of the needle, to keep two pieces of cloth apart during the stitch-forming period, and a presser-foot having a downwardly-projecting heel, to hold both pieces of cloth in contact with the feed-dog behind said separating block or bar, as improved means for producing machine hemstitching, in the manner herein set forth.

2. The combination, on an under-feed sewing-machine, substantially as hereinbefore specified, of a separating block or bar projecting in front of and a short distance behind the path of the needle, and constructed with a curved or beveled rear edge, and a presser-foot having an elevated toe end projecting over said block or bar, and a downwardly-projecting heel, of greater vertical depth than said block or bar, in rear of the latter, above the feed-dog, for the purpose set forth.

3. The combination, on an under-feed sewing-machine, substantially as hereinbefore specified, of the presser-foot *F*, having a downwardly-projecting heel and an elevated toe end, the latter containing its needle hole or notch, and the separating block or bar *B'*, projecting beneath said toe end, and having a curved or beveled rear edge, a needle-hole, and a slit extending from said needle-hole through said rear edge, as shown, for the purposes set forth.

4. The combination, on an under-feed sewing-machine, substantially as hereinbefore specified, of the presser-foot *F*, having a downwardly-projecting heel and an elevated toe end, the separating block or bar *B'*, of less vertical depth than said heel, projecting beneath said toe end, and a downwardly-pressing spring, as shown, as means for rendering said block or bar stationary in the line of feed, but movable up and down with the feed-dog, and for preserving a free passage for the upper piece of cloth, in the manner set forth.

5. The combination, on an under-feed sewing-machine, substantially as hereinbefore specified, of a separating block or bar projecting in front of and a short distance behind the path of the needle, to keep two pieces of cloth apart during the stitch-forming period, an ordinary feed-dog, and a pressing-surface above said feed-dog, behind said block or bar, with

a clear space immediately behind said block or bar for the descent of said upper piece of cloth to and beneath said pressing-surface, for the purposes set forth.

- 5 6. In a hemstitching attachment for sewing-machines, the combination, substantially as hereinbefore specified, of a separating block or bar supported by a downwardly-pressing spring, from which it projects laterally above

the lower piece of cloth, and the shuttle-race to slide S, to which said spring is attached, having a leveling-bolster beneath the outer end of said block or bar, for the purpose set forth.

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Witnesses:

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