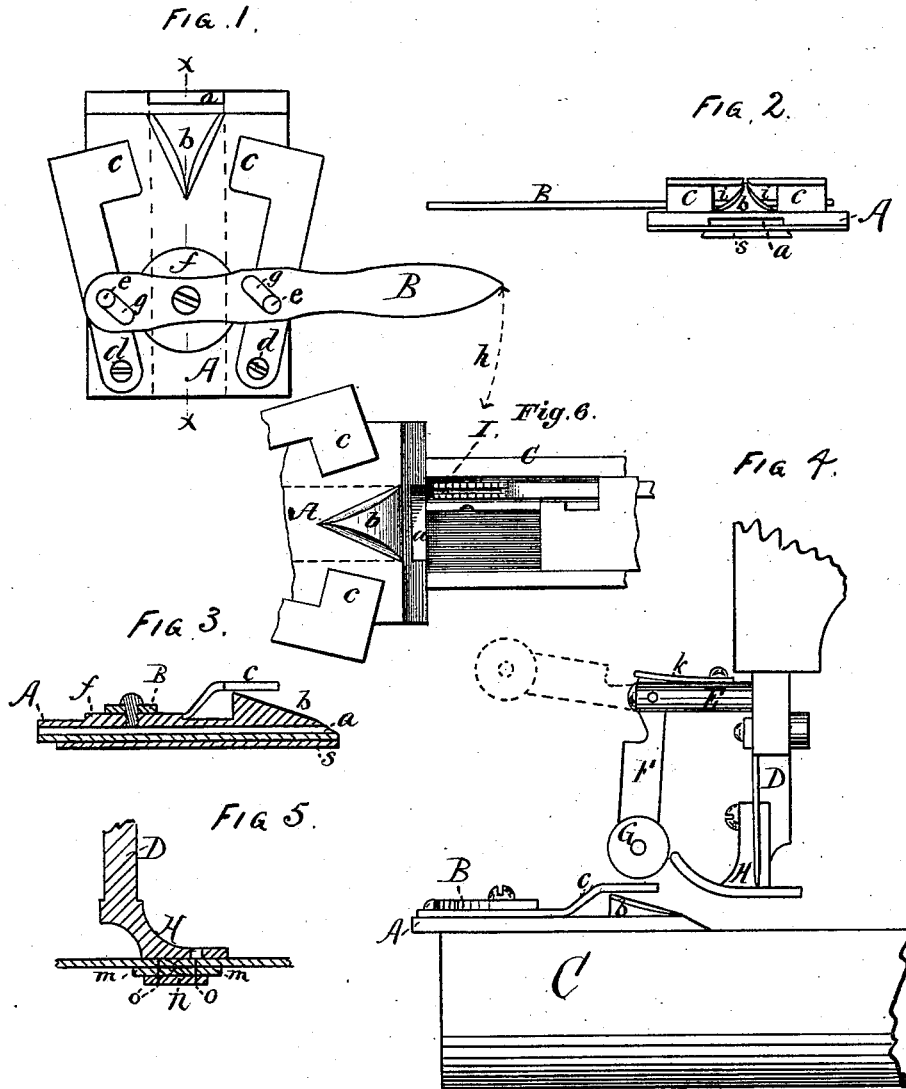


E. CORBETT & C. F. HARLOW.
SEAM-STAY GUIDE FOR SEWING-MACHINES.

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IMPROVEMENT IN SEAM-STAY GUIDES FOR SEWING-MACHINES.

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To all whom it may concern:

Be it known that we, EDWARD CORBETT and CHARLES F. HARLOW, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful or Improved Sewing-Machine Attachment, which invention is fully set forth in the following specification, reference being had to the accompanying drawings.

Our invention relates to the process of strengthening or re-enforcing sewed seams by the application of an overlying strip of strong material, sewed thereon by two parallel lines of stitching, and commonly termed a "stay."

The object of our invention is to facilitate the process of applying such stays to sewed seams by avoiding the labor, expense, and delay hitherto involved in the usual preliminary preparation of the work, by opening and pressing the seam with a hot iron preparatory to stitching on the stay, employing in place of such pressing operation a simple and efficient device, attachable to the various kinds of sewing-machines, with suitable modifications, which shall, in connection with the feeding and stitching mechanisms of such machines, automatically open and fold back the edges of a sewed seam, and press the same upon the surface of the stay, while it guides and directs both the stay and seam, as they are fed along simultaneously, under and past the needle or needles, in proper relation thereto and to each other, to be suitably stitched together, thus automatically completing the entire operation of applying the stay without any previous preparation of the work, and with much greater facility, especially when our invention is applied to machines employing two needles and stitching two parallel seams at the same time, whereby the stay may be completely stitched upon the seam at a single operation, or by passing the work only once through the machine.

And our invention, as to mechanism, consists, broadly, in a sewing-machine attachment comprising devices for automatically opening and folding back the edges of a sewed seam, for guiding and directing such seam, and for guiding and directing the stay mate-

rial, so that said opened and folded seam and said stay shall, by the action of the feed-movement of the sewing-machine, be brought into the desired relation to each other under the presser-foot of the machine, and be thereby properly held to receive the requisite stitching.

And the invention consists, in detail, in a suitably-formed block or plate upon the upper surface of said attachment, said block or triangular plate being so disposed in the path of the feed-movement that its forward point will continually separate the edges of the seam, and its sides roll them back as the work is fed along by the machine.

It also consists in combining, with said opening and folding seam block or plate, a subjacent channel or stay-guide, to give proper direction to the stay relatively to the seam as they are both simultaneously fed along to be stitched together.

It also consists in fixed or adjustable guides, arranged to operate against the seam within the angles formed by folding back the edges of the seam, to keep the same in proper relation to the folding-plate, and properly directed in the path of the feed-movement relatively to the stitching mechanism, and coincident with the direction of the stay.

It also consists in a top presser or guide, in combination with said seam-guides and folding-plate, so arranged as to keep the work from rising off from said folding-plate and out of said seam-guides.

It also consists in the various combinations and arrangements of the said devices with each other, and with the feeding and stitching mechanisms of sewing-machines, as will be hereinafter fully described, reference being had to the accompanying drawings.

In the drawings, Figure 1 is a top or plan view of our attachment detached from a sewing-machine. Fig. 2 is a rear elevation, or an elevation of the upper end of the same, as shown in Fig. 1. Fig. 3 is a vertical section of the same on line *x x*, Fig. 1. Fig. 4 is a side elevation of the same, and of that part attached to the presser-bar and portions of a sewing-machine to which the same is shown as attached. Fig. 5 is a vertical cross-section

of a portion of the presser bar and foot of a sewing-machine, showing also the position of the work thereunder when in process of stitching. Fig. 6 is a detached view, showing the serrated feed-bar I and portions of contiguous parts of other devices.

The principal part of the attachment, of which the top view is given in Fig. 1, is composed in this case of a base, A, mounted upon a slide, *s*, Fig. 2, which is fitted to slide in a recess in the bed of the machine, as is common with shuttle-machines. The base A may be rigidly attached to such slide, or may be so connected therewith as to be susceptible of lateral adjustment, if preferred. Between the upper and under surfaces of said base A is provided a longitudinal channel, *a*, which serves as a passage and guide for the stay. Upon the upper surface of base A, and over said stay-channel, is mounted a triangular block or plate, *b*, which serves to separate and fold back the adjacent edges of the seam as the work progresses by action of the feed-movement. This block *b* is so disposed in the path of the feed-movement and so formed that its forward point will continually part the edges of the seam, and its sides roll them back to the line of stitching which constitutes the seam, and fold them upon the body of the goods to which they respectively belong. There are also mounted upon the surface of base A two bent arms, *c c*, which are pivoted at *d d*, and are provided with studs *e e*. On a boss, *f*, is pivoted lever B, as shown, Fig. 1. This lever is provided with slots *g g*, which act upon studs *e e* to open and close the free ends of arms *c c* when the end of lever B is moved in conformity to dotted line *h*. If moved into position on dotted line *h*, opposite that shown, it will close said arms, as shown in Fig. 2. Thus closed, the arms serve as guides on opposite sides of the line of stitching which forms the seam, acting against the work in the angles formed by folding the edges, as above described, upon their respective sides of said seam, such folded edges having free passage through the spaces *i i*, Fig. 2, resulting from the angles formed in said arms.

In Fig. 4 our attachment is shown as applied to a sewing-machine for special work, and having a very narrow bed, C, a portion of which is shown, and into a recess in which said slide *s* upon base A is fitted to slide longitudinally.

Upon the presser-bar D of said machine is fixed a horizontal arm, E, to which is attached a spring, *k*, and into a slot in the end of which is pivoted a swinging presser-arm, F, to the lower end of which is affixed a roll, G. For convenience in manipulating the work, the arm F is jointed to arm E, so that it may be swung up into the position shown by dotted lines, Fig. 4, and is secured in such position, and also in its vertical position, by force of spring *k*, resting upon its pivoted end, as shown. It also has a vertical movement con-

jointly with the presser-bar D, and is subject to the downward pressure exerted by the presser-bar spring, except so far as it is relieved by the contact of the presser-foot H upon the work or bed of the machine, or when the force of said spring is taken off by the lifting-lever, which suspends the foot H and roll G above the work, as shown. The function of roll G is to press lightly upon the work above the guides *c c* and plate *b*, and thus to keep the work from rising off from said plate and out of said guides as the work progresses.

The practical operation of the invention is as follows: The attachment A is placed in the recess of the bed C of the machine, as shown, Fig. 4; the arm F is swung up into the position indicated by the dotted lines; the guides *c c* are opened, as described, and shown in Fig. 1; a strip of "stay" material is passed into the channel *a*, and extended through the same far enough to reach and come under the presser-foot H; the work or article containing the seam to be strengthened by such stay is now placed upon the attachment, so that the line of stitching which constitutes the seam rests upon the forward point of plate *b*, while the edges united by said stitching extend on either side of said point and under the guides *c c*, which are now closed, as shown in Fig. 2. The work is next pushed forward by the hand of the operator far enough to insert it under the presser-foot H and upon the stay, when it is left to the action of the feed-movement, (shown at I, Fig. 6,) the presser-foot and roll G being let down upon the same, as described. Now, by the action of the sewing-machine, the work is automatically fed along, and the seam and stay kept in proper relation to each other, as shown in Fig. 5, the edges *m m* being folded back under that portion of the material to which they respectively belong, and at the same time pressed upon the stay *n* in such relation thereto that said stay properly overlies said seam, and, as in the case shown, when a machine having a single needle is employed, the said stay is united by a single line, *o*, of stitches upon one side only of the seam. To complete the attachment of the stay by another line, *o'*, of stitches on the opposite side of the seam, the work must be again passed through the sewing-machine independently of our invention, and in the ordinary manner, which may be done with much greater facility from having already passed once through our attachment, as described. But when a machine with a double-stitching mechanism is employed, the advantage derived from the use of our invention therewith is greatly enhanced, as the process of applying the stay to the seam is then fully completed at a single operation.

We do not confine ourselves to the details of construction and arrangement herein shown and described, as it is obvious that many variations therefrom may be made without departing from the principle of our invention,

and must necessarily be made to adapt the invention to the various kinds of sewing-machines to which it is applicable.

What we claim as our invention is—

1. A sewing-machine attachment comprising a device for opening and folding back the edges of a sewed seam, a guide for directing such seam, and a guide for giving a corresponding direction to the stay, substantially as and for the purposes specified.

2. In combination with a feed mechanism of a sewing-machine, a device for separating and folding back the edges of a sewed seam, and guides for directing such seam and a strip of stay material, so that said opened and folded seam and said stay shall, by the action of such feed mechanism, be brought into the desired relation to each other, and properly held and pressed together while being fed along under and past the needle or needles, substantially as and for the purposes specified.

3. In combination with a sewing-machine, a seam opener and folder, *b*, or its equivalent, arranged to operate therewith, substantially as and for the purposes specified.

4. In a sewing-machine attachment, folder *b* and stay-guide *a*, combined and arranged to operate substantially as and for the purposes specified.

5. The guides *c c*, folder *b*, and presser *G*, combined and arranged as and for the purposes specified.

6. The guides *c c*, folder *b*, and adjusting-lever *B*, combined and arranged to operate substantially as and for the purposes specified.

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