

(No Model.)

H. H. BARNARD.

BINDING ATTACHMENT FOR SEWING MACHINES.

No. 454,250.

Patented June 16, 1891.

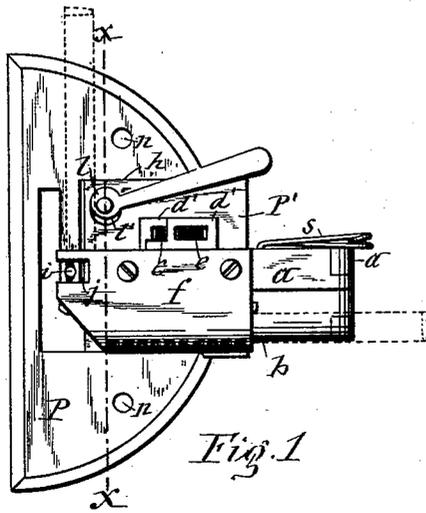


Fig. 1

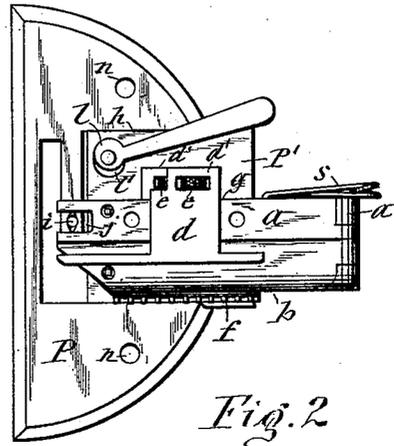


Fig. 2

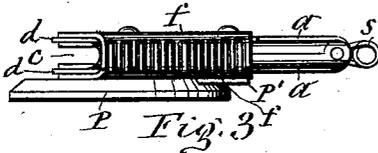


Fig. 3

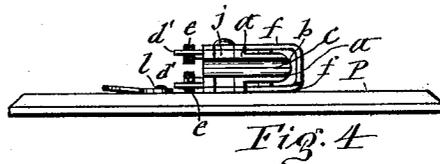


Fig. 4

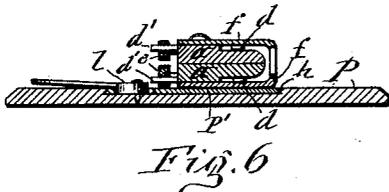


Fig. 6

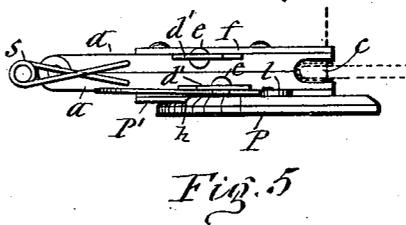


Fig. 5

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UNITED STATES PATENT OFFICE.

HENRY H. BARNARD, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-HALF
TO GEORGE S. SANFORD, OF SAME PLACE.

BINDING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 454,250, dated June 16, 1891.

Application filed November 21, 1890. Serial No. 372,134. (No model.)

To all whom it may concern:

Be it known that I, HENRY H. BARNARD, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Binder Attachments to Sewing-Machines, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to devices applied to sewing-machines for the purpose of folding and guiding the binding on the edges of the fabric during the operation of sewing it thereon; and the object of the invention is to provide a binder attachment which shall be self-adjusting to automatically accommodate itself to the varying thicknesses of the edges of the articles during the operation of sewing and binding thereon, and shall also be adjustable to guide the binding, so as to cause it to lie either to an equal or different widths upon opposite sides of the article, as may be desired, and shall, furthermore, be adjustable toward and from the passage of the machine-needle to bring the bindings of different widths in proper position under the needle, and the object of the invention is also to render the binder attachment more efficient in many other respects; and to that end the invention consists in the improved construction and combination of parts hereinafter fully described, and set forth in the claims.

In the annexed drawings, Figure 1 is a top plan view of my improved binder attachment. Fig. 2 is a top plan view of the same, with the upper covering-plate removed to illustrate the underlying guide-plate. Figs. 3 and 4 are respectively side and end views of the binder attachment. Fig. 5 is a view of the opposite side of the binder attachment; and Fig. 6 is a transverse section on line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

P represents a stiff metal plate, which is provided with holes *n n* for the reception of the screws, by which it is fastened to the top of the machine-table, said plate extending under the machine-needle and being provided with an eye *i* for the passage of said needle. Upon this plate is mounted my improved devices for guiding and folding the binding onto

the edge of the article to which it is to be sewed, and in order to allow said devices to be set a greater or less distance from the eye *i* to bring bindings of different widths in proper position under the needle, I provide the plate P with a dovetailed groove *h* and seat in said groove a plate P', having its side edges beveled to correspond to the dovetail-shaped sides of the groove and fitted thereto to prevent the plate P' from being lifted from the subjacent plate P and allow the former to slide longitudinally in the groove.

To facilitate the adjustment of the plate P', I provide the same with a transverse slot *l* and place in said slot an eccentric *l'*, which I pivot to the plate P, and provide it with a suitable handle by which to turn it. Said eccentric engages opposite edges of the slot *l*, and by turning the eccentric the plate P' is pushed toward or from the passage of the needle.

Upon the plate P', I mount the shoe *a a*, which is disposed with one end adjacent to the eye *i* of the plate P, and is formed with the groove *c* in said end. Said groove serves to guide and fold the binding upon the edge of the cloth, which passes with the binding through said groove during the operation of sewing the binding on the cloth, as represented by dotted lines in Fig. 5 of the drawings.

Heretofore binder attachments have been formed with the aforesaid guide-groove terminated in front of the needle; but experience has disclosed the fact that such a construction is defective, inasmuch as it allows the edge of the cloth or article to which the binding is to be sewed to be moved laterally away from the passage of the needle immediately at the rear thereof, and therefore the needle was liable to miss the binding and thus fail to sew the same to the cloth. To obviate this defect, I extend the grooved portion of the shoe *a a* across the passage *i* of the needle, so as to extend back of the same. An opening *j* in said portion of the shoe and in range with the eye *i* allows the needle to pass through the groove *c* of the shoe. In order to allow said shoe to accommodate itself to varying thickness of the cloth, as is the case at the seams thereof, I form said shoe of two sec-

tions *a a*, superposed one upon the other, the bottom section being firmly secured to the plate *P'* and the top section being arranged movably vertically from the bottom section, and the groove *c* formed partly in each of said sections. I preferably hinge the top section to the bottom section at the end opposite to that which is provided with the groove *c*, and by means of a suitable yielding tie, such as a spring *s*, connected at opposite ends, respectively, to the shoe-sections, the top section is pressed toward the bottom section.

In connection with the groove *c* I employ a preliminary folder and guide leading to the groove and delivering the braid or binding to said groove folded reverse from the folding imparted to it by the grooves. The reversing of the binding at its entrance to the groove produces sufficient tension on the binding to prevent its wrinkling during its passage through the groove, and thus the binding is smoothly and evenly sewed on the cloth.

The reverse folder I prefer to form of a convex guide *b*, partly on each of the shoe-sections *a a*, and of covering-plates *f f*, secured to the top and bottom of the shoe and extended over the guide *b*, where they are formed concave on the side facing said guide and have sufficient space between them to receive the braid or binding. The passage of the latter through the described shoe is indicated by dotted lines in Fig. 1 of the drawings.

To insure a uniform width of the fold of the binding, I provide the shoe with longitudinal guides on opposite sides of the convex guide *b*; and to render said longitudinal guides adjustable to different widths of bindings, and also allow the binding to be folded wider on one side than on the opposite side when so desired, I form said longitudinal guides of two plates *d d*, which are seated movably in ways *g g*, formed in the top and bottom of the shoe *a a* and at right angles to the convex guide *b*. Said guide-plates *d d* are formed with slotted tongues *d' d'*, which project from the side of the shoe, and into the slots of said tongues project sidewise the heads of set-screws *e e*, which work in screw-threaded sockets in the sides of the shoe-sections *a a*. By turning these set-screws they are caused to move inward or outward and carry by their heads the guide-plates *d d* toward or from the guide *b*, as may be desired. The edges of the binding, sliding on the longitudinal edges

of the guide-plate *d d*, causes the binding to be folded into the desired condition while passing between the convex guide *b* and concave portions of the covering-plates *f f*.

Having described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a binder attachment to sewing-machines, the combination of a shoe composed of a stationary bottom section and a vertically-movable top section, and having a groove for guiding and folding the binding formed partly in each section, a convex guide leading to said groove, and a concave cover over said guide divided lengthwise thereof in sections, being secured, respectively, to the two shoe-sections, as set forth.

2. In a binder attachment to sewing-machines, the combination of a shoe composed of two sections superposed one upon the other, hinged together at one end, and having at the opposite end a groove for guiding and folding the binding, formed partly in each section, a convex guide, also formed partly on each section, a concave cover over the said guide divided longitudinally, its sections being attached, respectively, to the two shoe-sections, and a spring pressing the top section of the shoe toward the bottom section of the same, substantially as described and shown.

3. In a binder attachment to sewing-machines, the combination of a shoe formed with a groove for guiding and folding the binding and with a convex guide leading to said groove, a concave cover over said guide, longitudinal guides seated adjustably on opposite sides of the convex guide, and set-screws holding the longitudinal guides in their adjusted positions, as set forth.

4. The combination of the shoe *a a*, formed with the guide *b*, and ways *g g* in the top and bottom of the shoe and at right angles to the guide *b*, the guide-plates *d d*, seated in said ways and formed with slotted tongues *d' d'*, and the set-screws *e e*, having their heads in the slots of said tongue, substantially as described and shown.

In testimony whereof I have hereunto signed my name this 19th day of November, 1890.

HENRY H. BARNARD. [L. s.]

Witnesses:

MARK W. DEWEY,
HELEN M. SEAMANS.