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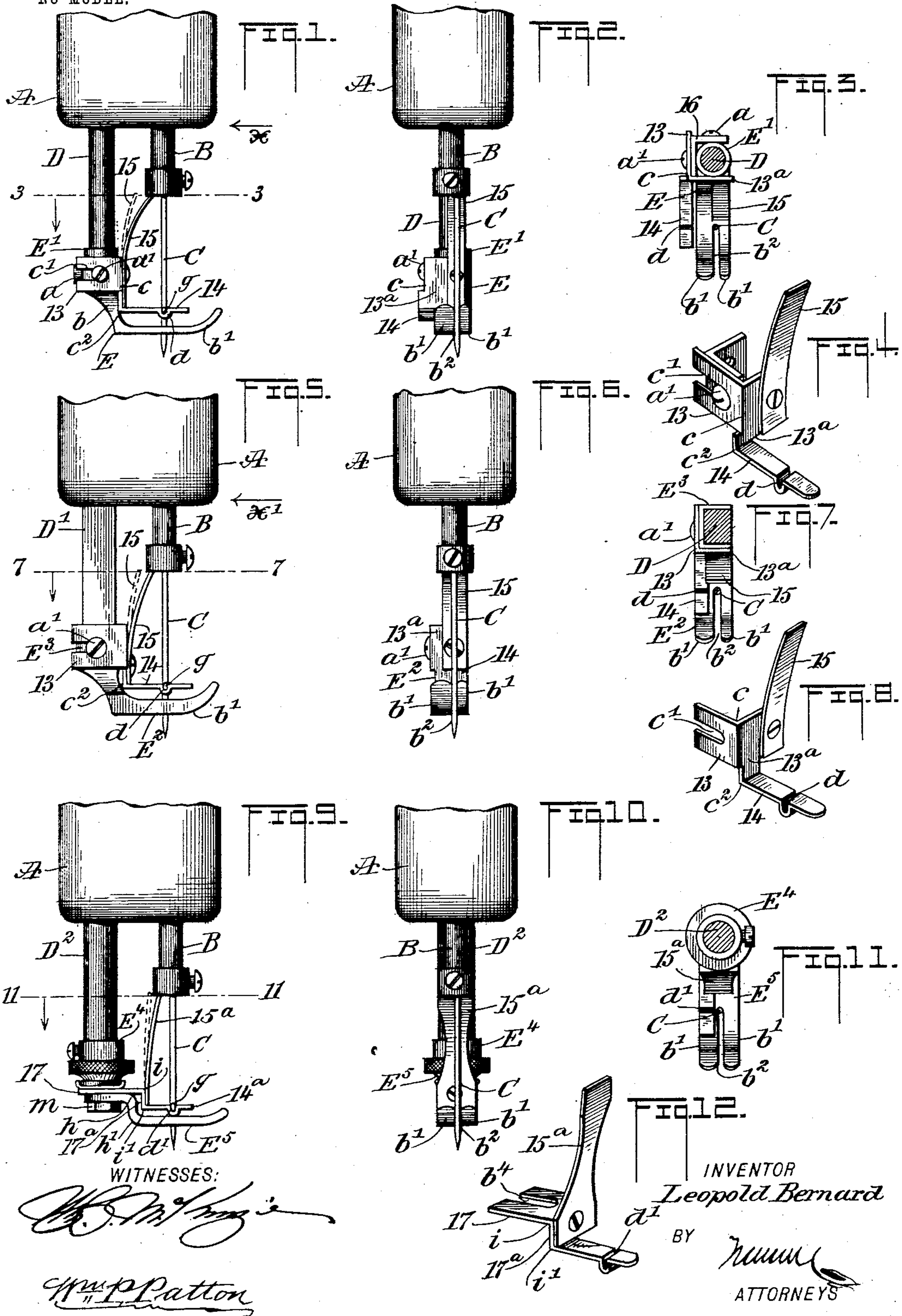
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L. BERNARD.

NEEDLE THREADING ATTACHMENT FOR SEWING MACHINES.

APPLICATION FILED OCT. 22, 1903.

NO MODEL.





# UNITED STATES PATENT OFFICE.

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## NEEDLE-THREADING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 751,827, dated February 9, 1904.

Application filed October 22, 1903. Serial No. 178,114. (No model.)

*To all whom it may concern:*

Be it known that I, LEOPOLD BERNARD, a citizen of the United States, and a resident of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Needle-Threading Attachment for Sewing-Machines, of which the following is a full, clear, and exact description.

This invention has for its object to provide a novel simple attachment for sewing-machines that will afford convenient and reliable means for guiding the end of a thread into the eye of the sewing-needle, a further object being to adapt the improvement for a secured connection with the presser-foot on different kinds of sewing-machines.

The invention consists in the novel construction and combination of parts, as is hereinafter described, and defined in the appended claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a side view of the improvement mounted upon a presser-foot having a cylindrical hub and a cylindrical slide-bar that holds the presser-foot depending from the sewing-machine head. Fig. 2 is a front view of the device shown in Fig. 1 seen in the direction of the arrow *x* in said figure. Fig. 3 is a transverse sectional view of the slide-bar shown in Fig. 1 and a plan view of the presser-foot and thread-guide thereon, the line of section being indicated at 3 3 in Fig. 1. Fig. 4 is a perspective view of the improved thread-guiding device shown in Figs. 1, 2, and 3. Fig. 5 is a side view of the improved thread-guide as modified to adapt it for connection with a presser-foot having a rectangular hub that is mounted upon a rectangular slide-bar. Fig. 6 is a front view of the improvement shown in Fig. 5 seen in the direction of the arrow *x'* in said figure. Fig. 7 is a partly-sectional plan view taken substantially on the line 7 7 in Fig. 5. Fig. 8 is a perspective view of the improved thread-guiding attachment shown in Figs. 5, 6, and 7. Fig. 9 is a side view of a slightly-modified form of the improved

thread-guide adapted for connection with a differently-constructed presser-foot, a modified hub therefor, and means for mounting the hub upon a cylindrical slide-bar. Fig. 10 is a front view of the presser-foot and the thread-guiding attachment shown in Fig. 9. Fig. 11 is a partly-sectional plan view substantially on the line 11 11 in Fig. 9, and Fig. 12 is a perspective view of the slightly-modified thread-guiding attachment shown in Figs. 9, 10, and 11.

In Figs. 1 to 4, inclusive, the improvement is represented as constructed in minor details for connection with one style of a sewing-machine in general use, A indicating the lower portion of the "head" of the machine; B, the needle-bar projecting below the head; C, a sewing-machine needle secured in the needle-bar so as to project down in axial alinement therewith; D, a cylindrical slide-bar held to reciprocate in a vertical plane in the rear of the needle-bar B, and E the presser-foot, that in this construction therefor is formed with a cylindrical hub E', that is mounted upon the lower end of the slide-bar and held secured thereto by a set-screw *a*. The presser-foot E is furnished with two toes *b'*, that project forward from the depending member *b*, that is integral with the hub E', the toes being spaced apart by the longitudinal slot *b''*.

The improved attachment comprises a bracket-frame in the form of a strip of plate metal having parallel top and bottom edges and a right-angle bend *c*, that provides two members 13 13<sup>a</sup> of nearly equal length, one member 13 having a longitudinal slot *c'* therein that extends from the free end toward the corner *c*.

Upon the lower edge of the frame members 13 13<sup>a</sup> at the corner *c* a thread-guiding arm 14 is integrally formed by the provision of a plate-metal strip that is bent at a right angle, as at *c''*, forwardly from the bracket-frame member 13<sup>a</sup>, said guide-arm having a transverse guideway or groove *d*, formed in its upper face at a proper distance from the corner *c''*. Upon the frame member 13<sup>a</sup> at or near its free end a gage-finger 15 is secured, which is formed of a strip of resilient plate metal.

As the hub E' for the presser-foot E is cy-



lindrical it is advantageous for the secure connection of the bracket-frame of the improved attachment that an angle-plate 16 be provided, which is formed of a strip of sheet metal that is bent at a right angle and has one member thereof attached upon the hub  $E'$  at its rear side by means of the screw  $a$ . The remaining member of the angle-plate that is disposed at the left side of the presser-foot  $E$  is furnished with a screw  $a'$ , that is adapted to pass into the slot  $c'$  when the frame member 13 is mounted upon the angle-plate, a tightened adjustment of the screw serving to clamp the improved attachment firmly upon the angle-plate and hub of the presser-foot  $E$ .

The construction, proportion, and relative arrangement of parts is such that the transverse groove  $d$  in the guide-arm 14 is positioned directly opposite the center of the needle-body  $C$ , so that by a proper vertical adjustment of the needle-bar  $B$  and the needle  $C$  the eye  $g$  of the needle may be alined with the groove.

To effect the adjustment of the needle-bar  $B$  for the disposal of the needle-eye  $g$ , as stated, the resilient gage-finger 15 is afforded a proper length, so that when the presser-foot is in normal adjustment above the face-plate of the sewing-machine table (not shown) the free upper end of the gage-finger may be readily pressed toward the needle-bar  $B$  and engage with the lower end thereof, as shown in Fig. 1. The contact of the gage-finger 15 with the end of the needle-bar, that is effected when the latter is depressed, so as to lower the needle  $C$ , will arrest the downward movement of the needle at a point which will aline the eye  $g$  of the needle with the groove  $d$  in the guide-arm 14, and thus enable the operator to pass the end of the sewing-thread along in the groove  $d$  and directly through the eye of the needle, this adjustment of the needle being shown in Fig. 1. It will be seen in said figure that a slight elevation of the needle-bar after its adjustment to dispose the eye  $g$  of the needle for the reception of a thread will permit the resilient gage-finger 15 to resume its normal position and have clearance from the needle-bar, said retracted position being shown by dotted lines in Fig. 1.

In Figs. 5 to 8, inclusive, the improved needle-threading device is shown mounted upon a presser-foot  $E^2$ , that is similar in form to the presser-foot  $E$ , but is provided with a rectangular hub  $E^3$ , that is open on one side and is adapted for a firm attachment upon the lower end of a rectangular slide-bar  $D'$  by means of the screw  $a'$ . As shown in Figs. 5 to 8, the construction of the improved needle-threading attachment is exactly similar to that shown in Figs. 1 to 4, that has been described, and, as indicated in Fig. 7, the angular bracket-frame formed of the members 13  $13^a$  is mounted upon and secured to the rec-

tangular hub  $E^3$  by means of the screw  $a'$ , that is engaged with the slot  $c'$  and which, as previously explained, serves to hold the presser-foot  $E^2$  upon the slide-bar  $D'$ .

As represented in Fig. 5, the groove  $d$  in the guide-arm 14 may be alined with the eye  $g$  in the needle  $C$  by means of the gage-finger 15, when the latter is pressed upon, so as to spring it outward into contact with the needle-bar  $B$  as it is moved downward, and thus arrest said bar at a proper point to effect such an alinement, which will enable the instant threading of the needle when the thread is passed through the groove and eye without requiring close observation of the needle-eye while doing so.

In Figs. 9 to 12, inclusive, the improved needle-threading device is shown slightly varied in form from the construction already described. This alteration in form being produced to facilitate the attachment of the improvement upon a presser-foot that differs in shape from those that have been described. The slide-bar  $D^2$  in this instance is cylindrical and is inserted and secured at its lower end in the sleeve-like hub  $E^4$ , which is fixed upon the rear end of the presser-foot  $E^5$ , said presser-foot consisting of a thick metal strip bent substantially at a right angle at  $h$  and  $h'$ , thus giving the foot-piece substantially Z-form, considered edgewise. The bends  $h$   $h'$  produce an offset in the presser-foot body and afford a rear member that is secured upon the lower end of the hub  $E^4$  and a lower forward member that is the foot proper and is provided with two toes  $b'$ , as usual, that are spaced apart by the longitudinal slot  $b^2$ .

The modified form given to the needle-threading device, as is exemplified in Figs. 9 to 12, inclusive, comprises a strip of plate metal of proper width that is bent at a right angle at  $i$  and again near said bend at  $i'$ , thus producing a flange 17, joined by an upright web  $17^a$  upon the rear end of a guide-arm  $14^a$ , in which is formed a transverse groove  $d'$  near the free end and in the upper side of the arm. Upon the front of the web  $17^a$  the lower end of a resilient gage-finger  $15^a$  is secured and projects upward therefrom, having a proper length for service as a stop or gage.

In the flange 17 on the needle-threading device last described a longitudinal slot  $b^4$  is formed which receives the screw  $m$ , which serves to clamp the rear member of the presser-foot, and thus adapts said screw to hold the flange 17 and presser-foot lapped together and secured upon the hub  $E^4$ , the needle-threading device being uppermost. When the presser-foot and needle-threading attachment are secured upon the slide-bar  $D^2$ , the presser-foot proper, that is longitudinally slotted, as at  $b^2$ , is so positioned that the needle  $C$  may pass freely down in the slot  $b^2$ , and the guide-arm  $14^a$  will be located at the side of



the presser-foot and needle, so that the groove  $d'$  in the guide-arm will be positioned directly opposite the needle C.

It will be seen that the gage-finger 15<sup>a</sup> is positioned at the rear of the needle and normally has clearance from the needle-bar B, which if moved downward along with the needle C thereon will contact with the gage-finger when the latter is bent toward the needle, as indicated in Fig. 9. This will arrest the needle at an exact point for the alinement of its eye  $g$  with the groove  $d'$ , and thus permit the free insertion of a sewing-thread through the groove  $d'$  into the eye of the needle, a slight elevation of the needle-bar B permitting the gage-finger 15<sup>a</sup> to resume a normal position and have clearance from the needle-bar.

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

1. The combination with a presser-foot having a longitudinal slot and adapted for reciprocation on a sewing-machine head, a needle-bar, and a needle pendent from the bar, of a guide-arm adjustably secured in a horizontal plane on the hub of the presser-foot, said guide-arm being disposed at one side of and parallel with the slot in the presser-foot and having a transverse groove which guides a thread to pass through the eye of the needle when said needle is depressed to aline its eye with the groove, and a resilient gage-finger

carried by the guide-arm, that when pressed upon laterally contacts with the needle-bar and arrests descent of the needle at a point that will aline the eye of the needle with the groove in the guide-arm.

2. The combination with a sewing-machine head, a needle-bar, a needle depending from said bar, a slide-bar, and a presser-foot on the lower end of the slide-bar, said presser-foot having a longitudinal slot therein through which the needle may reciprocate, of a needle-threading device, comprising an angular bracket-frame securable on the presser-foot, a guide-arm extended from the bracket-frame along one side edge of the presser-foot and having a transverse groove therein, and a resilient gage-finger projected upward from the bracket-frame, and adapted by laterally bending its upper portion to contact with the lower end of the needle-bar and arrest its descent, for alinement of the needle-eye with the groove in the arm, so as to adapt said groove to guide the thread into the needle-eye.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LEOPOLD BERNARD.

Witnesses:

JNO. M. RITTER,  
WM. P. PATTON.