(No Model.)

F. H. CHILTON.

EMBROIDERING ATTACHMENT FOR SEWING MACHINES.

No. 342,183. Patented May 18, 1886.

Fig. 1.

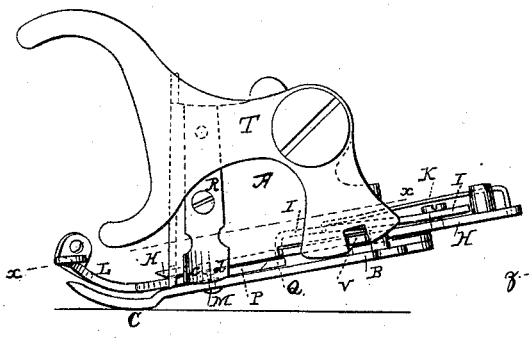


Fig. 4.

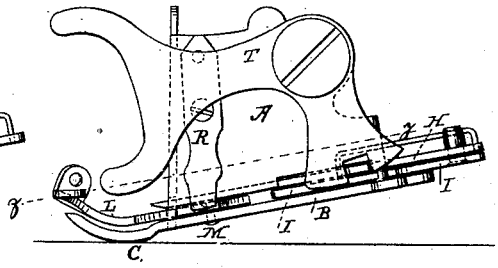


Fig. 2.

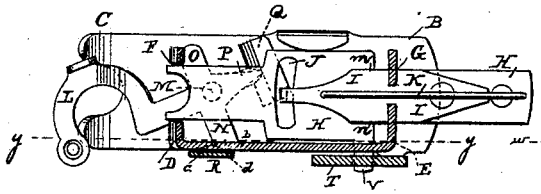


Fig. 5.

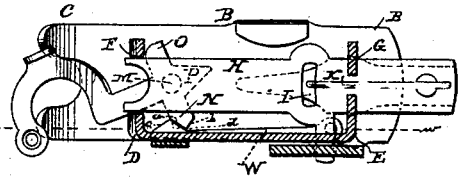


Fig. 3.

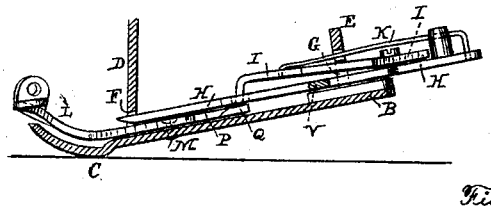


Fig. 6.

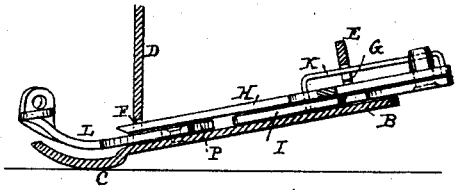
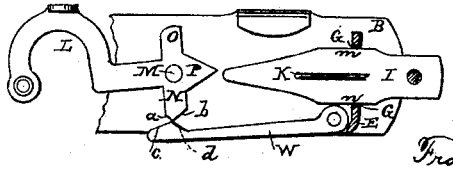


Fig. 7.



WITNESSES:

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ATTORNEY

UNITED STATES PATENT OFFICE.

FRANKLIN H. CHILTON, OF NEW YORK, N. Y., ASSIGNOR TO THE EMPRESS EMBROIDERER COMPANY, OF SAME PLACE.

EMBROIDERING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 342,183, dated May 18, 1886.

Application filed January 14, 1886. Serial No. 188,519. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN H. CHILTON, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Embroidering Attachments for Sewing-Machines, of which the following is a specification.

The invention relates to improvements in embroidering attachments for sewing-machines, and particularly to improvements adapted to be used upon or in connection with the attachment described and claimed in Letters Patent of the United States, numbered 330,678, and issued to my assignee November 17, 1885.

The object of the present invention is principally to provide means which will insure a positive vibratory motion, at the proper time, of the arm carrying the embroidering-thread described in said patent, and which will lock or firmly hold said arm at the end of each of its movements to the right or left of the vertical path of the sewing-machine needle, thereby preventing all lateral play which the arm might otherwise have, and securing the formation of full regular loops in the embroidering-thread.

The invention and its purposes will be more fully understood from the detailed description hereinafter presented, reference being had to the accompanying drawings, in which—

Figure 1 is a side elevation of an attachment embodying the elements of the invention, the operating-lever of the device being shown in a depressed position. Fig. 2 is a sectional view on the dotted line *x x* of Fig. 1, looking downward on the foot of the attachment. Fig. 3 is a vertical section on the dotted line *y y* of Fig. 2. Fig. 4 is a side view of the attachment shown in said patent of November 17, 1885, but embodying in this instance some of the features of the present invention and the operating-lever being depressed. Fig. 5 is a sectional view on the dotted line *z z* of Fig. 4, looking downward. Fig. 6 is a vertical section on the dotted line *w w* of Fig. 5, and Fig. 7 is a top view of the thread-carrier, actuating-finger, and spring-dog of the attachment shown in Fig. 4.

In the drawings, A designates the supporting frame or bracket of the attachment, having at its lower edges the inclined plate B, the forward end of which projects beyond the bracket and forms a presser-foot, C. The ends D E of the bracket A extend across the plate B, and at their lower edges are slotted or recessed, as at F G, to permit the free longitudinal movement of the slide H, carrying upon its upper surface the pivotally-secured finger I, the forward pointed end of which projects downward through the transverse elongated slot J, as shown in Figs. 1 to 3, inclusive.

Upon the slide H is secured the spring K, the forward end of which enters the finger I and is designed to return the finger into position in line with the length of the slide when other forces have ceased to act upon it.

The hook-shaped thread-carrying arm L is secured by means of a pivot, M, on the forward part of the plate B, and projects forward over the foot C, through the slot F, as in the patented attachment hereinbefore referred to. Upon opposite sides of the pivot M the thread-carrier has lateral extensions or arms N O, and directly in rear of the pivot the carrier tapers to a point, forming a guide-arm, P, having sides which diverge toward said arms, and which have outwardly-beveled edges, as shown by dotted lines in Fig. 2.

Upon the rear extremity of the guide-arm P is formed a plate, Q, (see Figs. 1 to 3, inclusive,) the front edge of which is beveled forward, and which serves as a rest for the point of the finger I when the slide H is at the end of its rear stroke, and as a means of facilitating the direction of the point of the finger I to the sides of the guide-arm P, the idea being to keep the finger from moving squarely against the arm P, or against any surface which will not give to its pressure.

The outer end of the arm N of the thread-carrier is beveled on its front and rear edges, forming inclined surfaces *a b*, the point at which said surfaces converge being slightly off the transverse line of center through the arm N and pivot M, as shown more distinctly in Fig. 7.

Upon the outer surface of the bracket A is attached the upper end of a spring, R, the

lower end of which has beveled or inclined surfaces *c d*, diverging from the center of the lower end of the spring outward from the bracket in position to come in contact with the inclined surfaces *a b* on the arm N during the operation of the thread-carrier. The object of the beveled or inclined surfaces above described and of the spring R is to lock the thread-carrier at each end of its stroke, and to prevent the center of the guide-arm P from getting in line with the point of the finger I, it being essential that the point of the finger move either against one side or the other of said arm. When the point between the surfaces *a b* is in line with the point between the surfaces *c d* of the spring, the center of the arm P will not be in line with the finger I, as shown in Fig. 7, since the said points are not in line with the center of the pivot M, and when the surface *a* on the arm of the carrier is in contact with the surface *d* of the spring R the guide arm P will be projecting to the left of the finger I, while when the surfaces *b c* of said parts are in contact with each other the arm P projects to the right of the finger I. Thus at no time can the arm rest in line with the center of the finger I. The spring R, operating through the surfaces *a b* and *c d*, also serves to firmly hold the thread-carrier at the end of each of its movements until the point of the finger I, acting on the arms N O, overcomes the force of the spring.

The slide H is given its usual longitudinal movement, as described in said patent hereinbefore mentioned, by means of the operating-lever T, pivoted to the frame A, and having one of its ends in connection with the needle-bar of the sewing-machine, while its other end is notched to receive the lateral extension V of the slide H, and to give the same a reciprocating motion during the regular operation of the machine.

When the slide H is in its rearward position, which is that shown in Fig. 1, the point of the finger I will rest upon the plate Q, and when the slide is moved forward, by elevating the operating-lever T the point of the finger will move along one side of the guide-arm T and come in contact with one or the other of the arms N O, causing thereby the thread-carrier to rotate on its pivot and move the embroidering-thread across the path of the sewing-needle in a well-known manner. During the reciprocating movement of the slide H the finger I comes in contact with first one and then the other of the arms N O, and thus gives the carrier a regular vibratory movement, as described in the patent aforesaid.

In Figs. 5 to 7, inclusive, is illustrated the attachment shown and described in said patent numbered 330,678, provided with a slightly-modified means of locking the thread-carrier at the end of each of its strokes, and in this instance I interpose a pivoted dog, W, between the spring R and end of the arm N, and give to the dog the beveled or inclined surfaces *c d*, which in Figs. 1 to 3 are on the spring.

The operation and effect of the arrangement shown in Figs. 4 to 7, inclusive, are the same as those of the locking means illustrated in Figs. 1 to 3.

For the purpose of insuring the return of the finger I to a central position on the return-stroke of the slide H, the sides of said finger are extended laterally, as at *m n*, in order that said extended portions may come in contact with the edges of the recess or slot G, and thus operate to bring the finger into line on the slide, even though the spring K should cease to have sufficient force to move the finger.

Figs. 4 to 7 are introduced to show the application of the thread-carrier-locking devices and the lateral extensions of the finger I to the attachment described in the aforesaid Letters Patent, numbered 330,678, and hence no part of the attachment shown in said figures, with the exception of the new features just mentioned, is claimed herein.

In the attachment shown in Figs. 4 to 7, inclusive, the finger I is pivoted beneath the slide H, whereas in Figs. 1 to 3, inclusive, the finger I is upon the upper surface of the slide, and its point, being between the walls of the slot J, is not liable to break or lose its position.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. In an embroidering attachment for sewing-machines, the supporting bracket or frame, inclined plate, foot, and operating-lever, combined with the pivoted thread-carrier having lateral arms N O, guide-arm P, and plate Q, the reciprocating slide H, having slot J, and the finger I, pivoted upon the slide, and the point of which projects downward through slot J, in position to alternately engage the arms N O, and to rest upon the plate Q at the end of its rear stroke, substantially as and for the purposes set forth.

2. In an embroidering attachment for sewing-machines, the pivoted thread-carrier having arms N O, and mechanism, substantially as described, for giving the carrier a vibratory motion, the end of arm N having surfaces *a b*, combined with the spring-surfaces *c d*, substantially as set forth.

3. In an embroidering attachment for sewing-machines, the pivoted thread-carrier having arms N O, and mechanism, substantially as described, for giving the carrier a vibratory motion, the end of arm N having inclined surfaces *a b*, combined with the spring-surfaces *c d*, the converging points of the said surfaces being off the transverse line of center of the pivot M, substantially as and for the purposes set forth.

4. In an embroidering attachment for sewing-machines, the supporting bracket or

frame having slots or recesses F G, the inclined plate, foot, and operating-lever, combined with the pivoted thread-carrier having lateral arms N O and guide-arm P, the reciprocating slide H, and the finger I, pivoted to the slide and having laterally-extended sides *m n*, substantially as and for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 6th day of January, A. D. 1886.

FRANKLIN H. CHILTON.

Witnesses:

CHAS. C. GILL,

EDWARD WOLFF.