(No Model.)

J. P. LAVIGNE.

EMBROIDERING ATTACHMENT FOR SEWING MACHINES.

No. 318,755. Patented May 26, 1885.

Fig. 1.

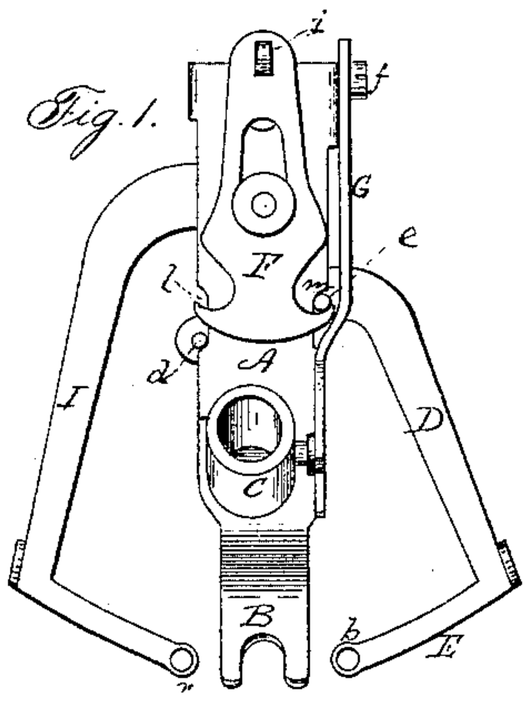


Fig. 2.

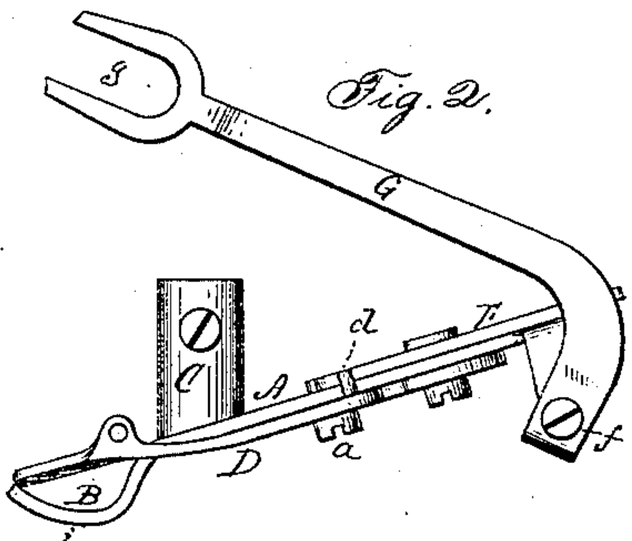


Fig. 3.

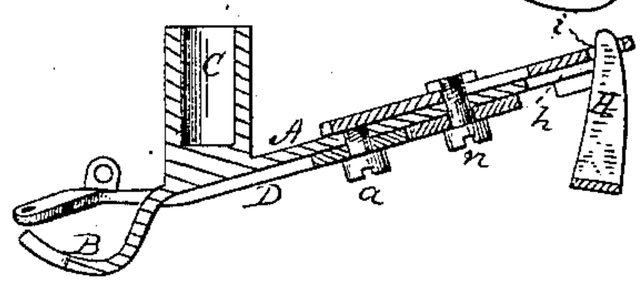


Fig. 4.

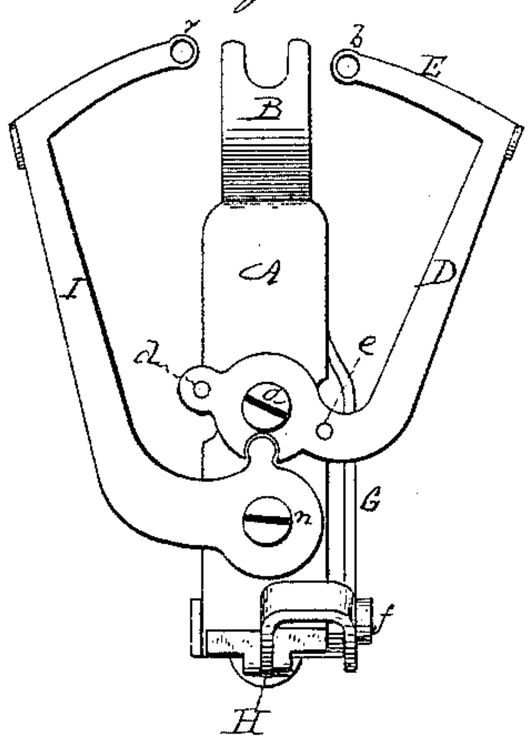


Fig. 5.

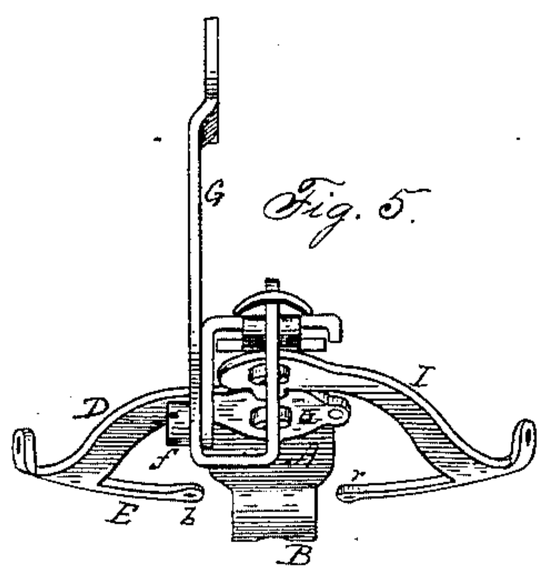


Fig. 6.

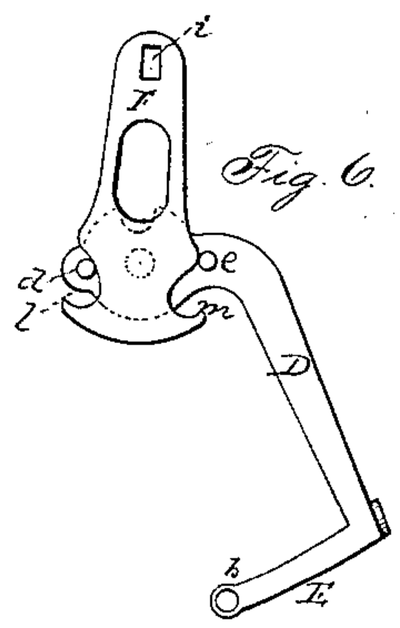


Fig. 7.

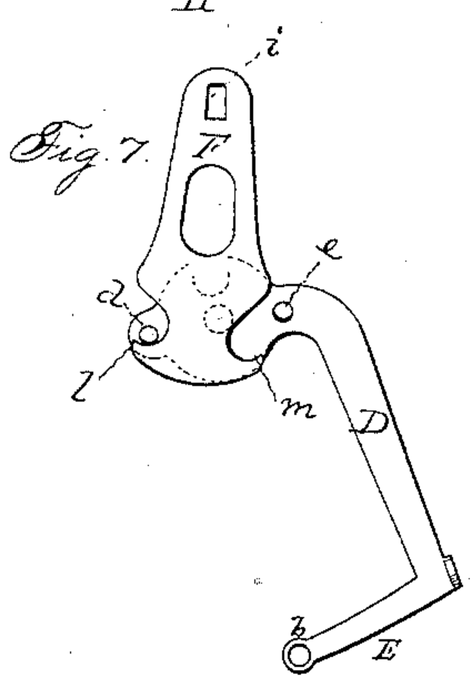


Fig. 8.

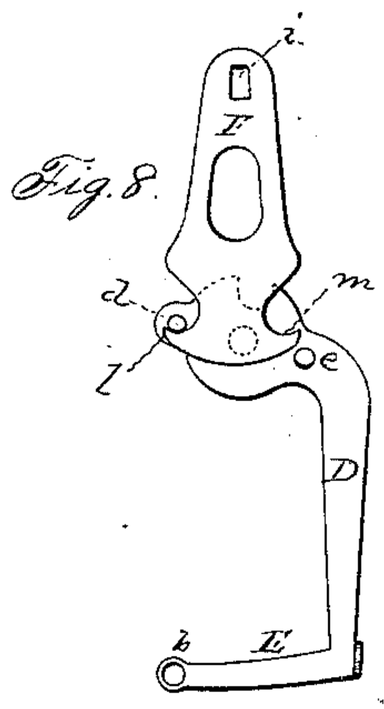
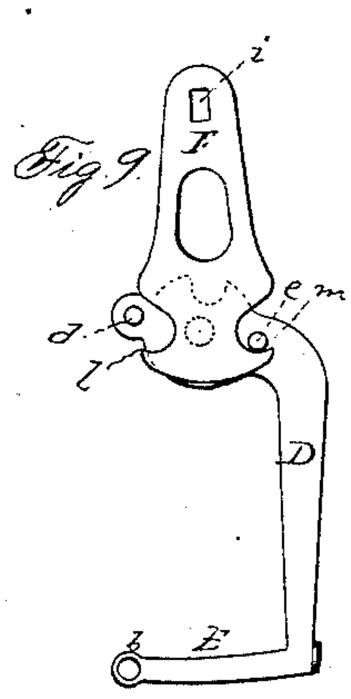


Fig. 9.



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UNITED STATES PATENT OFFICE.

JOSEPH P. LAVIGNE, OF WALLINGFORD, CONNECTICUT, ASSIGNOR TO THE SACKETT MANUFACTURING COMPANY, OF SAME PLACE.

EMBROIDERING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 318,755, dated May 26, 1885.

Application filed August 15, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH P. LAVIGNE, of Wallingford, in the county of New Haven and State of Connecticut, have invented a new Improvement in Embroidery Attachments; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a top or plan view; Fig. 2, a side view; Fig. 3, a longitudinal section; Fig. 4, a under side view looking upward; Fig. 5, a rear end view; Figs. 6, 7, 8, and 9, diagrams illustrating the operation.

This invention relates to an improvement in that class of embroidery attachments for sewing-machines which consist of a vibrating finger arranged to carry the embroidery-thread back and forth across the path of the needle, and so that the needle will make a stitch first on one side of the embroidery-thread and then on the opposite side, thereby laying the embroidery-thread in a serpentine path, and in some of which attachments two such vibratory fingers are employed, each carrying an independent embroidery-thread, and so that the two threads cross each other between each stitch made by the needle, the object of the invention being a simple device for imparting to the embroidery-thread arms their required vibratory movement.

I will first describe the invention as carrying a single embroidery-arm.

A represents the base of the attachment, its lower end forming a presser-foot, B, the base inclined upward and forward. On the base is a socket, C, or other suitable device by which it may be attached to the presser-foot spindle. Upon the under side of the base A the vibrating arm D is hung upon a pivot, *a*, and terminates at its free end in a finger, E, provided with a thread-carrying eye, *b*, in the usual manner for such embroidery attachments. The arm D is constructed with an upwardly-projecting stud, *d*, one side of the pivot, and a like stud, *e*, upon the opposite side of the pivot, each extending above the surface of the base A. Upon the upper surface of the base is a sliding plate, F, arranged for longitudinal reciprocating and transverse vibratory movement in a plane parallel with the plane of the base A. The longitudinal reciprocating movement is imparted from the needle-arm through a lever, G, hung to the base upon a fulcrum, *f*, its free end bifurcated, as at *g*, or otherwise fitted for engagement with the needle-arm, and so that the up and down reciprocating movement of the needle-bar will impart a corresponding up and down swinging or vibratory movement to the lever G. From the lever G an arm, H, extends upward through a slot, *h*, in the base-plate into a corresponding hole, *i*, in the slide F, and so that in the upward movement of the lever G the slide F is moved from the presser-foot, and in the downward movement of the lever G the slide F moves toward the presser-foot. The slide F extends rearward between the two studs *d e*.

In the edge of the slide F, next the stud *d*, a recess is made, forming a hook, *l*, and upon the opposite side a like recess, forming a hook, *m*, is made. The width of the slide F, both in rear and forward of the recesses, is broader than the distance between the two studs *d e*, and the recess from the hook forward inclines outward. Supposing the lever G to stand in its up position, as seen in Fig. 2, with the slide F thrown to its extreme forward position, as seen in Fig. 1, the hook *m* engaged with the stud *e*, so as to throw the arm D to the right, as the lever G descends under the action of the needle-arm, the slide F will be forced rearward or toward the presser-foot into the position seen in Fig. 6. The incline of the recess in the hook *m* will ride on the stud *e* and turn the slide to the left to bring the hook in rear of the stud *d*. Then as the lever G next rises the slide F will move forward until the hook *l* engages the stud *d* on the arm D, as seen in Fig. 7. The movement continuing, the hook *l*, acting upon the stud *d*, will turn the arm D to the left, as seen in Fig. 8. On the next descent of the lever G the slide F will be moved rearward, the incline forward of the hook *l* will ride upon the stud *d* and turn the slide F to the opposite side to bring the hook *m* into line with the stud *e*, as seen in Fig. 9, and so that in the next forward movement of the slide F the hook

m will engage the stud *e* and turn the arm D back to its first position, and so continuing in each rear movement of the slide it is thrown, alternately, to one side or the other, to engage, first, the one stud *d*, and next the stud *e*. The one movement turns the arm D in one direction, and in the next movement the arm D is returned, the eye *b* in the finger crossing the path of the needle at each movement.

I represents the second arm, which is hung upon the under side of the base upon a pivot, *n*, (see Fig. 4,) and terminates in a finger provided with an eye, *r*, corresponding to the eye *b* in the arm D. The hub of the arm I interlocks with the hub of the arm D, as seen in Fig. 4, and so that the vibratory movement of the arm D is imparted to the arm I, but in the opposite direction, and in the usual manner for communicating the movement of one arm to a second arm in this class of attachments. This arrangement of the slide F to operate the two arms is simple and cheap in its construction, and positive in its operation.

I claim—

In an embroidery attachment, the combination of the vibrating arm D, hung to the base-plate, and provided with the thread-carrying eye at its free end, and with a stud, *d*, one side of its pivot, and a stud, *e*, upon the opposite side of its pivot, the reciprocating slide F, constructed with a hook, *l*, upon one side, and a like hook, *m*, upon the opposite side, said hooks corresponding, respectively, to the studs *d e*, the bottom of the recess in the edge of the plates by which the hook is formed inclined outward, and the lever G hung to the base and constructed for engagement with the needle-arm of the sewing-machine, substantially as described, and whereby a longitudinal reciprocating movement is imparted to said slide F between said studs *d e*, the inclined edge of the recesses in the slide operating upon the respective studs to impart vibratory movement to said slide in a horizontal plane between said studs.

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