(No Model.)

G. W. BAKER.

EMBROIDERING ATTACHMENT FOR SEWING MACHINES.

No. 297,100. Patented Apr. 22, 1884.

Fig. 1

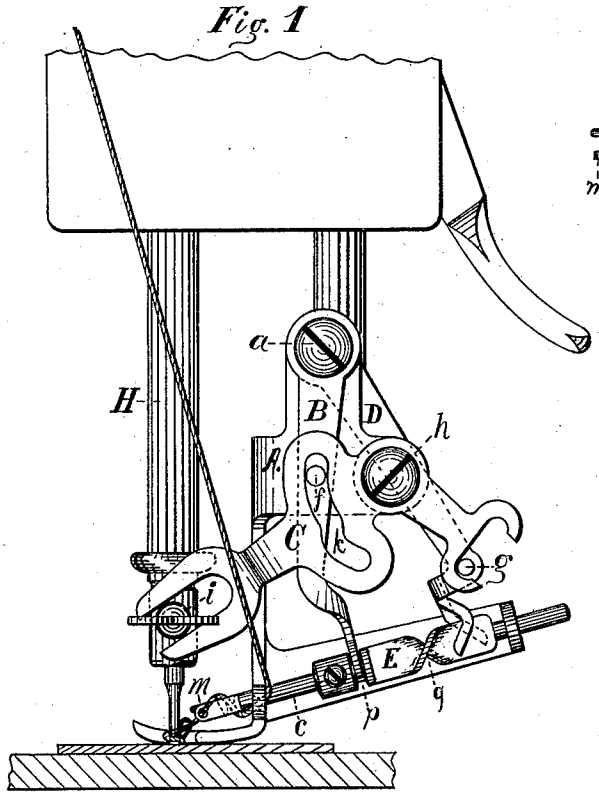


Fig. 2

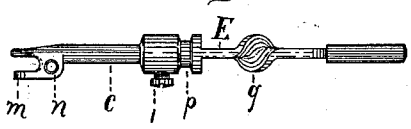


Fig. 3

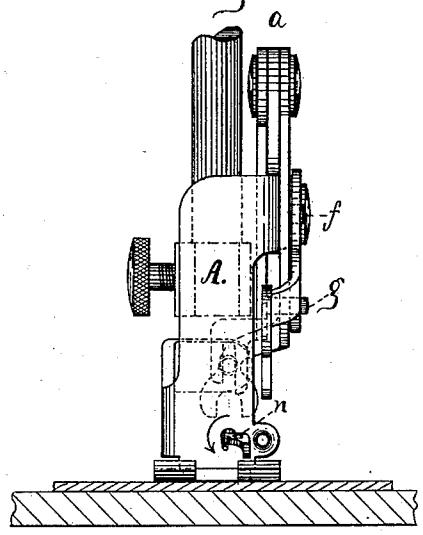


Fig. 4

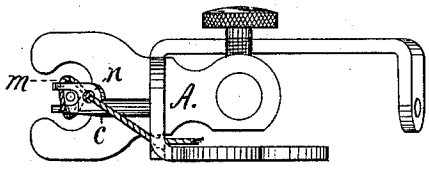
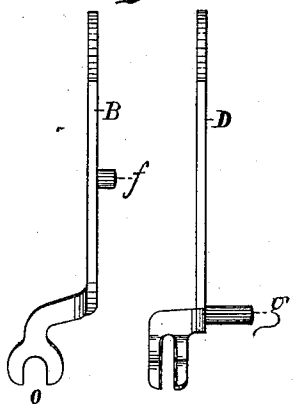


Fig. 5



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UNITED STATES PATENT OFFICE.

GEORGE WELLS BAKER, OF CLEVELAND, OHIO, ASSIGNOR TO THE WHITE SEWING MACHINE COMPANY, OF SAME PLACE.

EMBROIDERING ATTACHMENT FOR SEWING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 297,100, dated April 22, 1884.

Application filed December 27, 1883. (No model.)

To all whom it may concern:

Be it known that I, GEO. W. BAKER, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a new and useful Embroidering Attachment for a Sewing-Machine, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to the construction and arrangement of the several parts of an embroidering attachment for a sewing-machine, as an improvement on the Letters Patent No. 274,548, granted to me March 27, 1883, and assigned to the White Sewing Machine Company; and it consists of devices, to be hereinafter more fully described, for imparting to a thread-laying looper a reciprocating and rotary movement, and positively controlling the same.

In the drawings, Figure 1 represents a side elevation of my invention secured to the presser-bar of a sewing-machine; Fig. 3, a front elevation with the needle removed; Fig. 4, a plan or top view of the body A and looper *c*, the latter being shown in its forward position, with a loop formed in the embroidering-thread for the passage of the needle on its downward stroke. Fig. 2 is a view of the looper *c* and spiral shaft E detached from the body; and Fig. 5 a view of the vibrating levers B and D, also detached.

In Fig. 1, A is the body of the attachment, shown replacing the usual presser-foot on the presser-bar of a sewing-machine. Pivoted to the said body at *a* are the vibrating levers B and D, bifurcated at their lower extremities for engagement with the spiral shaft E, and provided with the pins *f* and *g*, which engage the bell-crank lever C, said bell-crank being pivoted on the body at *h*. Both ends of the bell-crank are bifurcated, one to engage with the needle-screw *i* in the needle-bar H, the other for engaging with the pin *g* in the vibrating lever D, and it is also provided with a cam-slot, *k*, in which works the pin *f* of the vibrating lever B.

In the lower portion of the body A is the spiral shaft, E, journaled therein in a suitable manner to admit of not only a rotary but also a longitudinal movement in its bearings. In its front end, and forming one of its journals, is secured by the screw *l* a bifurcated thread-laying looper, *c*, through one prong of which, at a right angle to its axis, is a small hole, *m*, for the passage of the embroidering-thread, the other prong being preferably rounded, as shown in Fig. 2. Just back of the bifurcation the looper is provided with another small hole, *n*, located at right angles to the hole *m* and axis of the looper, through which the embroidering-thread also passes. The lower extremity of the body is formed into a presser-foot, as clearly shown in the drawings, and provided with an eyelet (best shown in Fig. 3) for the embroidering-thread.

It is evident that vibrations of the lever B, by means of its bifurcated end *o* and the groove *p* in the shaft E, will impart a longitudinal motion to said shaft; also, that similar vibrations of the lever D, by means of its bifurcated end and spiral *q* on the said shaft, will impart a rotary, or, more exactly, an oscillating movement, (substantially one-half revolution,) and the manner of imparting said vibrations to both levers by the bell-crank C, reciprocating with the needle-bar, being so clearly shown in Fig. 1, needs no further explanation. I would, however, state that the mechanism is so timed as to cause the movements of the looper to be made in the following order: Starting with the needle and looper in the positions shown in Fig. 1, as the needle rises, the looper slides forward in its bearings, its rounded prong passing over the embroidery-thread. It then rotates in the direction of the arrow, Fig. 3, to the position shown in Fig. 4, thus forming the loop clearly shown therein, and as the needle descending enters the loop the looper immediately slides backward in its bearings, and then rotates back to its former position. (Shown in Figs. 1 and 3.)

The manner of threading the looper is clearly shown in Figs. 1 and 4, and by the location of the several holes, as therein shown, for the embroidering-thread I am enabled to dispense

with tension devices for the same, save in some instances, when a slight tension is applied directly on the spool.

The formation of the embroidery-loop being substantially the same as described in said Letters Patent No. 274,548, and the stitch being a well-known one, further explanation I deem unnecessary, referring to said patent for a more complete description thereof.

I do not propose to limit the scope or confine the invention to the exact construction I have shown, as I am aware that other devices could be used to rotate said looper in connection with the device I have shown to reciprocate it, and, further, that the construction of the lever for vibrating the lever D and its connection therewith might be varied without departing from the spirit of my invention.

I do not claim, broadly, rotating a spiral shaft by a bifurcated vibrating lever; but

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

1. In an embroidering attachment for a sewing-machine, the combination, with a spiral shaft, a lever constructed to engage and reciprocate said shaft, and a second lever constructed to engage the spiral portion of the shaft and impart an oscillating rotary motion thereto, of a third vibrating lever constructed to engage and be actuated by the sewing-machine and connected to both the first and second levers, and adapted to vibrate the same, substantially as set forth.

2. In an embroidering attachment for a sewing-machine, the combination, with a looper-shaft and means for imparting an oscillating rotary motion thereto, of a vibrating lever constructed to engage and reciprocate the looper-shaft, and a lever constructed and arranged to be actuated by the sewing-machine, and connected to said vibrating lever and adapted to actuate the same, substantially as set forth.

3. In an embroidering attachment for a sewing-machine, the combination, with a looper-shaft having a spiral portion, and means for reciprocating said shaft, of a vibrating lever constructed to engage the spiral portion of the looper-shaft, and a separate lever constructed and arranged to be vibrated by the sewing-machine, and connected with the vibrating lever, and adapted to actuate the same and impart an oscillating rotary motion to the looper-shaft, substantially as set forth.

4. In an embroidering attachment for sewing-machines, the combination, with a looper-shaft and a lever constructed and arranged to be actuated by the needle-bar, of two intermediate levers connected at one end to said needle-bar-actuated lever, the free ends of said levers being connected to the looper-shaft, one of the levers serving to reciprocate the shaft and the other to impart an oscillating rotary motion thereto, substantially as set forth.

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