

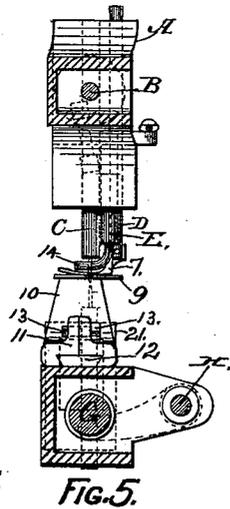
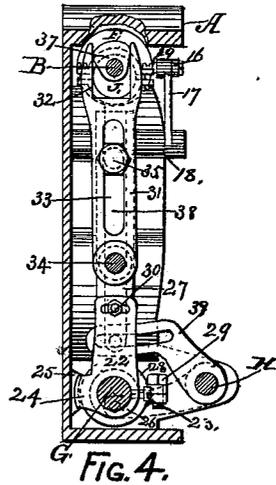
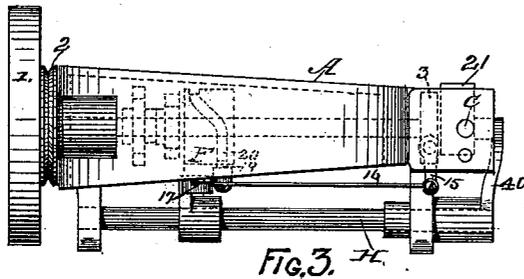
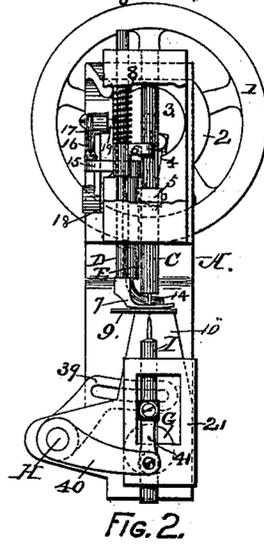
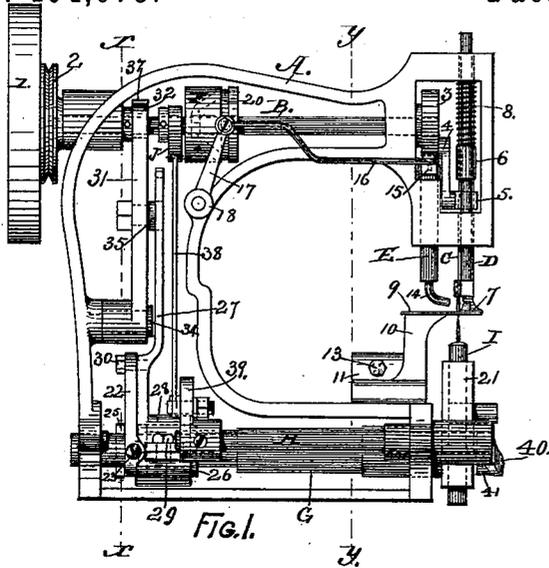
(No Model.)

W. FIEDLER.

WAX THREAD SEWING MACHINE.

No. 404,079.

Patented May 28, 1889.



Witnesses:
S. B. Brewer.
H. W. Scattergood.

by

Inventor:
 WILLIAM FIEDLER,
 William H. Low,
 Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM FIEDLER, OF NORTH ADAMS, MASSACHUSETTS.

WAX-THREAD SEWING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 404,079, dated May 28, 1889.

Application filed April 28, 1888. Serial No. 272,128. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM FIEDLER, of North Adams, in the county of Berkshire and State of Massachusetts, have invented new and useful Improvements in Wax-Thread Sewing-Machines, of which the following is a specification.

My invention consists of a novel combination of parts, as hereinafter described and claimed; and the object of my invention is to render the machine certain in its action and to afford the means for adjusting the parts so that there will be a perfect harmony in their movements in respect to each other. This object I attain by the mechanism illustrated in the accompanying drawings, which are herein referred to and form part of this specification, and in which—

Figure 1 is a rear elevation of a wax-thread sewing-machine containing my improvements. Fig. 2 is an end elevation of the same. Fig. 3 is a plan view. Fig. 4 is a vertical section at the line X X on Fig. 1, and Fig. 5 is a like section at the line Y Y on the same figure.

As represented in the drawings, A indicates the frame of the machine, and B the driving-shaft, provided with a balance-wheel, 1, and a pulley, 2. Said driving-shaft is journaled in the frame A in a common and well-known manner, and the inner end of said shaft is provided with a crank-wheel, 3, which is connected by the rod 4 to the awl-bar C, so as to give the latter its required reciprocating motion. A collar, 5, on said awl-bar is adapted to engage with an arm, 6, secured to the presser-foot bar D, so as to lift the presser-foot 7 at the proper instant from the work to permit the latter to be fed along to receive the next occurring stitch. Said presser-foot is normally held down upon the work by a coil-spring, 8, in the usual manner of sewing-machines. The throat-plate 9 is attached to the upper end of a post or bracket, 10, and for the purpose of rendering said throat-plate adjustable, in order to bring the opening of said throat-plate in accord with the position of the awl and needle, said bracket has a split lower flange, 11, which is fitted to clamp on a dovetail lug, 12, on the frame of the machine. A clamp-screw, 13, is fitted in the split lower flange of the throat-plate

bracket for the purpose of clamping said bracket in place on said lug.

E is a vertically-journaled rock-shaft that carries the thread-guide 14 in its lower end, said thread-guide being arranged to carry the thread with which the sewing is done into the path of the needle of the machine. On the upper end of said rock-shaft is secured an arm, 15, to which is pivoted one end of a connecting-rod, 16, whose opposite end is pivoted to the free end of an arm, 17, that is journaled on a stud, 18, fixed in the frame of the machine. The free end of the arm 17 is provided with a pin, 19, which engages in a groove, 20, of a cam, F, that is secured to the shaft B. The groove in said cam is so formed that it will impart, through the arms 15 and 17 and rod 16, the required motion to the thread-guide 14—that is to say, so that the thread will be carried at the proper instant into position for the needle of the machine to engage with it, and so that said thread-guide will be removed from the path of the awl-bar C before and during the time the latter is making its movements across the path of said thread-guide.

G is a horizontal rock-shaft, which is journaled in the lower part of the frame A, and has at its outer end a post or frame, 21, in which the needle-bar of the machine is fitted to receive an independent reciprocating movement. Said rock-shaft has an arm, 22, secured near its inner end by means of a set-screw, 23. Said arm is provided with a lateral projection, 24, which engages in a groove formed on the frame A by snugs 25, for the purpose of retaining said arm in position in respect to its moving mechanism, the latter consisting of a cam, 37, a forked arm, 31, which spans said cam, said arm being pivoted to a stud, 34, and provided with an adjustable wrist-pin, 35, which engages in a slotted arm, 27, secured to the arm 22. The arm 22 is provided with a hub, 26, and upon the latter a slotted arm, 27, is secured by means of a split sleeve-hub, 28, which is provided with a clamp-bolt, 29, for the purpose of binding said sleeve-hub to the hub 26. The arm 27 is provided with a binding-screw, 30, which passes through a curved slot in the arm 22, and by which the arms 22 and 27 can be bound together to move as one piece. An endwise ad-

justment of the rock-shaft G—to bring the needle of the machine into exact alignment with the awl in the awl-bar C—is effected by first unscrewing the set-screw 23, then moving the rock-shaft G endwise in the required direction and to the proper distance, and then screwing down the set-screw 23 to secure the arm 22 in its right place on the shaft G after the latter has been correctly adjusted endwise. By means of the split sleeve-hub 28 and binding-screw 30 provision is made for adjusting the set of the arm 27 sidewise in respect to the center line of the arm 22, and thereby a lateral adjustment of the needle of the machine can be effected when required. An arm, 31, provided with a forked end, 32, and with a slotted opening, 33, is fitted to oscillate on a stud, 34, fixed in the frame A. Said arm is provided with an adjustable wrist-pin, 35, which may be fastened at any required point in the slotted opening 33 to engage in the slot of the arm 27 in such manner that the oscillations of the arm 31 will be transmitted, through the arm 27, to the rock-shaft G. The forked end of the arm 31 spans an eccentric cam, 37, of an approximately-triangular form, which is secured to the shaft B, and by which the required oscillating motion is imparted to the arm 31.

H is a rock-shaft by which a reciprocating motion is imparted to the needle-bar I. An eccentric, J, that is secured to the shaft B, is connected by a rod, 38, to an arm, 39, that is secured to the rock-shaft H. An arm, 40, which is secured to the outer end of the rock-shaft H, is connected by a rod, 41, to the needle-bar I in such manner that a reciprocating motion will be imparted to the latter by the vibratory motion of the arm 40. The reciprocating motion given to the needle-bar I is independent of the vibratory motion imparted to said needle-bar by the rock-shaft G. That portion of said vibratory motion which occurs while the needle-bar is raised to force the needle into the material being stitched effects the feeding of said material, so as to bring it into the required position to receive the next succeeding stitch that is made by the machine.

The operation of my improved sewing-machine is as follows: By the rotatory motion of the driving-shaft B the awl-bar C is reciprocated, so that an awl in its lower end will puncture the leather, or other material, on the throat-plate 9 at the proper points to receive the stitches that are to be made therein. By the rotations of said shaft the following operations are also effected in such order that one will not interfere with another, but all will tend to produce a complete general

result. The thread-guide is moved by the cam F to carry the thread into the path of the needle secured in the upper end of the needle-bar, said needle being provided with a hook or barb by which a loop of the thread is drawn down into the perforation produced by the awl. The rock-shaft G is oscillated by the cam 37 to produce the feeding movement of the needle-bar I, and the rock-shaft H is oscillated by the eccentric J to produce the reciprocating motion of the needle-bar, whereby the stitching is effected.

I do not broadly claim a wax-thread sewing-machine in which the stitching is made by means of an awl and a needle co-operating together for that purpose, as I am aware that machines of such a character have heretofore been made and used; but

What I claim as my invention is—

1. In a sewing-machine, the combination of a driving-shaft, B, provided with a triangular cam, 37, a vibratile arm, 31, pivoted on a stationary stud, 34, and provided with a forked end which spans said cam, and with a slotted opening, 33, having a wrist-pin, 35, adjustably secured therein, a rock-shaft, G, having at its outer end a frame, 21, in which the needle-bar I is fitted to reciprocate, and near its inner end an arm, 22, provided with a curved slot formed concentrically to said rock-shaft, a slotted arm, 27, adjustably fitted on the arm 22, and provided with a binding-screw, 30, by which the arms 22 and 27 are adjustably secured together, and a needle-bar, I, and its attached needle, the wrist-pin 35 being fitted to engage in the slot of the arm 27, to produce a synchronous movement of the arms 27 and 31, as and for the purpose herein specified.

2. The combination of the frame A, provided with a dovetailed lug, 12, a throat-plate post, 10, provided with a split flange and with a clamping-screw, whereby said post is fitted to be adjustably attached to said lug, and a needle attached to an operating mechanism which is adjustable lengthwise of the machine, as and for the purpose herein specified.

3. In a sewing-machine, the combination of the frame A, provided with snugs 25, and a rock-shaft, G, having an arm, 22, detachably secured thereto, said arm having a lateral projection, 24, which is fitted to engage in said snugs, and thereby preventing said rock-shaft from shifting endwise when said arm is secured thereto, as and for the purpose herein specified.

WILLIAM FIEDLER.

Witnesses:

GEO. L. SHEPARD,
C. K. MILLARD.