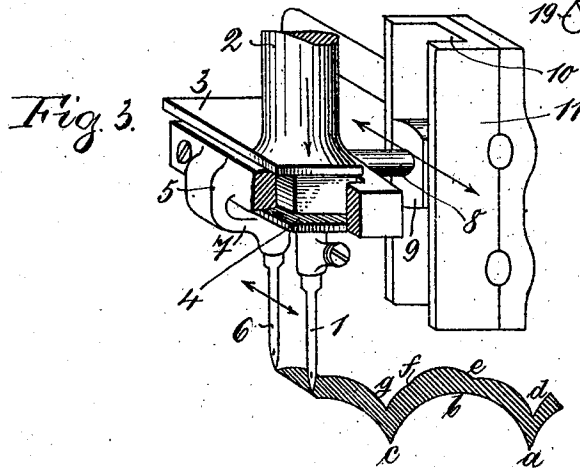
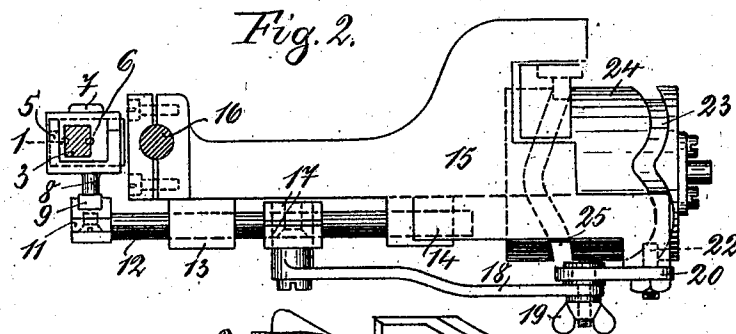
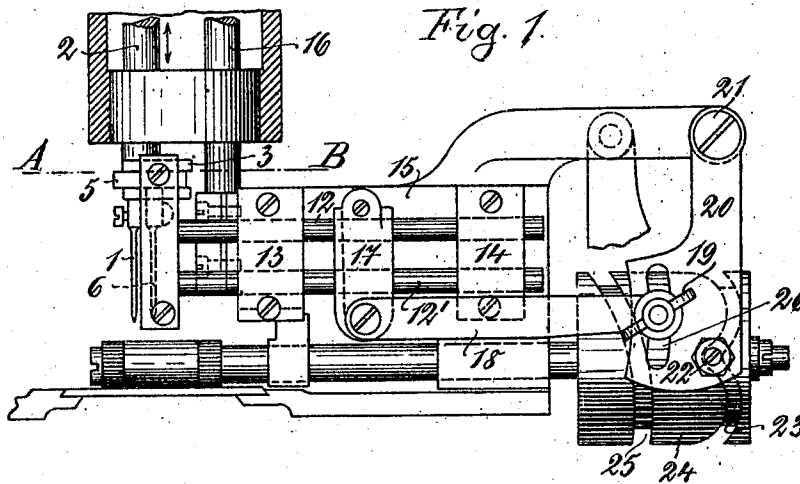


H. DROSSNER & A. ORT.
TWO-NEEDLE EMBROIDERY SEWING MACHINE.
APPLICATION FILED SEPT. 25, 1911.

1,066,089.

Patented July 1, 1913.



Witnesses:
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UNITED STATES PATENT OFFICE.

HERMANN DROSSNER AND ANTON ORT, OF PARIS, FRANCE, ASSIGNORS TO THE FIRM
OF DROSSNER & CIE., OF PARIS, FRANCE.

TWO-NEEDLE EMBROIDERY-SEWING MACHINE.

1,066,089.

Specification of Letters Patent.

Patented July 1, 1913.

Application filed September 25, 1911. Serial No. 651,191.

To all whom it may concern:

Be it known that we, HERMANN DROSSNER and ANTON ORT, both citizens of the Republic of France, and residents of 48 Boulevard de Sebastopol, Paris, France, have jointly
5 invented certain new and useful Improvements in Two-Needle Embroidery-Sewing Machines, of which the following is a specification.

10 This invention relates to embroidery sewing machines of the two-needle type particularly intended for festooning, and adapted to produce festoons or designs having non-parallel or dissimilar scalloped edges in
15 addition to festoons or designs having parallel edges.

Hitherto the length of the stitches is varied by adjustably arranging one or both needles of the machine in such a manner
20 that the distance between the two needles can be varied according to the design or scalloping of the edges of the design to be produced. According to the present invention the adjustment is effected by means of
25 a cam-device which adjusts the needle or needles according to the design to be produced, during the operation of the machine. The device is preferably so arranged that the needles are adjusted at right angles to
30 the direction of the cloth feed, thus resulting in parallel stitches of different length.

The improved machine can be used for producing straight designs having one or both edges scalloped, as well as for producing
35 curved or other shaped designs having scalloped edges. In order to produce curved or other shaped designs with scalloped edges, the adjustable needle device is preferably used in combination with the known cloth
40 feed device, in which the cloth is moved simultaneously in both the longitudinal and transverse directions. The cloth feed device gives the elementary form or foundation to the design, while the adjustment of the needles effects the scalloping of the edges. The
45 adjustment of the needles relatively to one another may be effected by providing a needle carrier for one needle, which is adjustable upon the needle bar of the other
50 needle, the needle carrier having a slide which engages in a vertical channel guide adjustable horizontally by means of a cam, so as to horizontally adjust the needle carrier and its needle relatively to the needle
55 bar and the needle fast on the latter.

In order that the invention may be more fully understood, reference is made to the accompanying drawings, which show such parts of a two-needle machine, as are necessary to clearly understand the invention.

Figure 1 is a side-view of a machine having one adjustable needle. Fig. 2 is a plan in section on the line A—B of Fig. 1. Fig. 3 is a perspective view partly broken away and showing the main parts of the invention, one form of festoon obtained by this machine being shown in perspective in Fig. 3.

The lower end of the needle bar 2 is provided with a foot 3 in which are formed
70 grooves 4 and in these grooves 4 is adapted to slide a slide-piece 5 formed integral with a needle carrier 7 in which the adjustable needle 6 is mounted. The needle bar 2 is adapted to be vertically reciprocated in the
75 usual manner and slidably secured to the foot thereof is the fixed needle 1. Projecting from the slide piece 5 is a lateral pin 8 terminating in a slide block 9 guided within a vertical groove 10 in a channel guide 11.
80 The latter is connected with two rods 12, 12' which are horizontally and slidably mounted in guides 13 14 on an arm 15. The arm 15 can be raised and lowered by means of a rod 16 so as to raise and lower the frame-
85 work supporting the whole apparatus in order to admit of inserting and removing the cloth to be stitched.

The rods 12 and 12' are clamped within a clamp 17 which is connected by means of
90 a rod 18 and screw and wing nut 19 with a lever 20 swinging about an axis 21 on the arm 15. The lever 20 is set in oscillatory motion by means of a pin 22 on the lever 20 which engages a cam groove 23 in a cam 24.
95 The cam 24 is also provided with a cam groove 25 which in known manner operates to axially move the cloth-feeding roller 26 so as to move the cloth transversely. The cloth feeding roller may be rotated and axi-
100 ally moved through the medium of the cam 24 in any known manner such as, for example, that described in the German Letters Patent specification No. 250,437, dated October 9th, 1910.

The operation of the device is as follows:—The movable needle 6 reciprocates together with the needle bar 2 and fixed needle 1 carried thereby. During this vertical reciprocation the slide block 9 is
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guided in its vertical movement in the groove 10 of the channel guide 11. By the rotation of the cam 24, the pin 22 moving in the groove 23 oscillates the lever 20 and through the rod 18, clamp 17 and guide rods 12, 12' moves the channel guide 11 in the horizontal direction, the number and extent of these horizontal movements being dependent on the form of the cam-groove 23. The horizontal movement of the channel guide 11 is transmitted to the movable needle 6 through the slide block 9, pin 8 and slide piece 5, thus varying the distance between the needles 6 and 1 during the operation of the machine, according to the design to be produced.

Fig. 3 illustrates a design in which the fixed needle 1 produces an inner edge *a, b, c*, of simple curved form while the movable needle 6 produces the outer scalloped edge *d, e, f, g*. The design illustrated is obtained by the combination of the cloth feeding-device therewith, which moves the cloth in both the longitudinal and transverse directions.

By adjusting the bolt and wing-nut 19 in the slot 26 of the lever 20, the extent of the movement imparted to the needle 6 may be varied without varying the oscillation of the lever 20.

Various forms of design may be readily produced by employing cams 24 provided with different cam grooves 23.

We claim:—

1. In a two-needle festoon embroidery sewing machine means for varying the distance between the needles, comprising a vertically reciprocatory needle bar, a grooved foot thereon, a needle fixed on said foot, a needle carrier horizontally slidable in said grooved foot, a movable needle carried by said carrier, a guide for vertically guiding said needle carrier during the reciprocation of said needle bar and means for horizontally moving said guide.

2. The combination with a two-needle festoon embroidery sewing machine having a cloth feed roller and a grooved rotatable cam, of a vertically reciprocatory needle bar, a grooved foot thereon, a needle-carrier horizontally slidable in said grooved foot, a guide for vertically guiding said needle during the reciprocation of said needle bar and means actuated from said cam for horizontally moving said guide.

3. In a two-needle festoon embroidery

sewing machine means for varying the distance between the needles, comprising a vertically reciprocatory needle bar, a grooved foot thereon, a needle fixed on said foot, a needle-carrier horizontally slidable in said grooved foot, a movable needle carried by said carrier, a guide for vertically guiding said needle carrier during the reciprocation of said needle bar, guide bars projecting horizontally from said guide and means for horizontally moving said guide bars.

4. In a two-needle festoon embroidery sewing machine, means for varying the distance between the needles, comprising a vertically reciprocatory needle bar, a grooved foot thereon, a needle depending from said foot, a needle carrier horizontally slidable in said grooved foot, a second needle depending from said needle carrier, a guide for vertically guiding said needle carrier during the reciprocation of said needle bar, guide bars projecting horizontally from said guide, bearings through which said guide bars are slidable, a grooved rotatable cam, a pin engaging said groove, a clamp secured to said guide bars and link connections between said clamp and pin.

5. The combination with a two-needle festoon embroidery sewing machine having a cloth feed roller and a grooved rotatable cam, of a vertically reciprocatory needle bar, a grooved foot thereon, a needle depending from said foot, a needle carrier horizontally slidable in said grooved foot, a needle depending from said carrier, a guide for vertically guiding said needle carrier during the reciprocation of said needle bar, guide bars projecting laterally from said guide, bearings through which said guide bars are movable, an additional groove in said grooved cam, a pin engaging said groove, a pivoted and slotted lever carrying said pin, a clamp secured to said guide bars and a link articulated at one end to said clamp and at its other end in the slot of said pivoted lever.

In witness whereof we have hereunto set our hands in the presence of two witnesses.

HERMANN DROSSNER.
ANTON ORT.

Witnesses:

JNO. BAKER,
H. C. COXE.