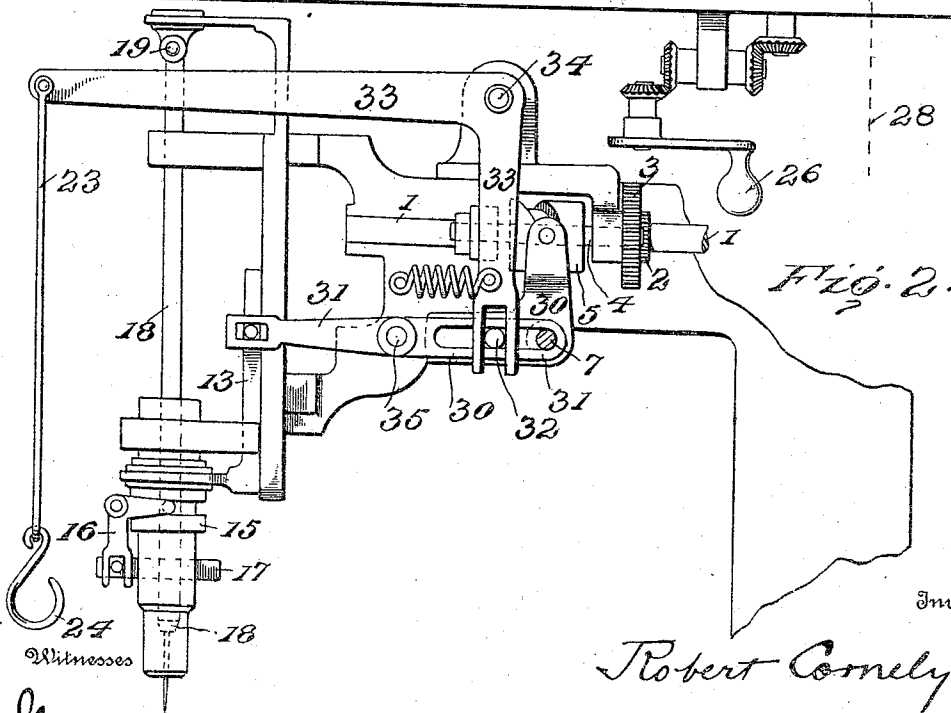
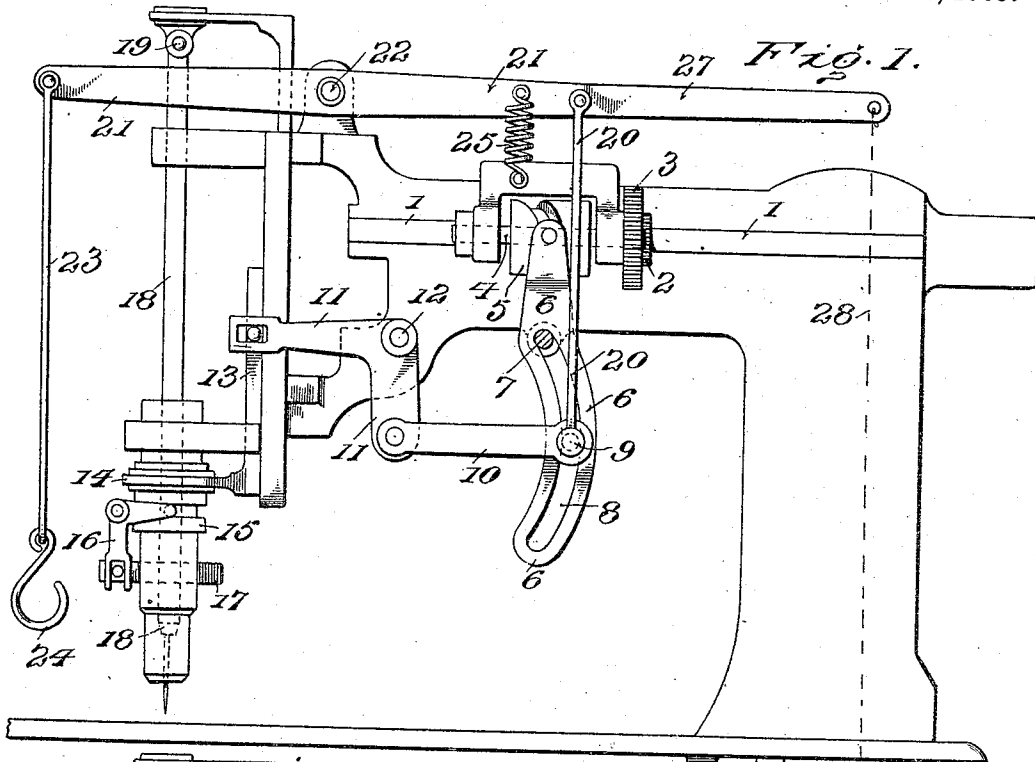


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SEWING AND EMBROIDERING MACHINE.  
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Patented Dec. 28, 1909.



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# UNITED STATES PATENT OFFICE.

ROBERT CORNELY, OF PARIS, FRANCE.

SEWING AND EMBROIDERING MACHINE.

944,599.

Specification of Letters Patent.

Patented Dec. 28, 1909.

Application filed May 12, 1909. Serial No. 495,513.

*To all whom it may concern:*

Be it known that I, ROBERT CORNELY, resident of Paris, France, have invented new and useful Improvements in Sewing and Embroidering Machines, which are fully set forth in the following specification.

The present invention relates to universal feed sewing and embroidering machines working with an oscillating needle in which the stroke of the oscillation of the needle has to be varied while the machine is working. A machine of this kind has already been described in U. S. Letters Patent No. 626,367 dated June 6, 1899 but the machine described in said patent presented the great inconvenience that the hand of the operator which controls the crank handle below the table in order to follow the design, had at the same time to act upon the means for varying the stroke of the oscillation of the needle, which was very difficult to operate and made it so to speak impossible to produce perfect work.

The object of the present invention is to overcome all these difficulties by rendering the elements which control the variation of the stroke of the oscillation of the needle, absolutely independent from the said crank handle of the machine, so that the left hand of the operator which conducts the material above the table, is enabled to control at the same time the variation of the stroke of the needle, while the right hand operates the design controlling crank handle below the table as heretofore.

Figure 1 is a view in side elevation of a sewing machine provided with my improvements; and Fig. 2 is a view similar to that of Fig. 1 showing a different embodiment of my invention.

In Fig. 1 of the accompanying drawings, main shaft 1 of the machine is provided with a gear wheel 2 which drives a gear wheel 3 of double its size. Shaft 4 of the latter gear wheel 3 is provided with a cam 5 which transmits an oscillating motion to lever 6 on its fulcrum 7; the lower arm of this lever 6 which has the shape of an arc of a circle, is provided with a concentric slot 8 in which a roller 9 can move freely. To this roller 9 is connected a rod 10 which drives the lower arm of lever 11 which oscillates on its fulcrum 12; the upper arm of this lever 11 transmits an up and down motion to slide 13 which being provided at its lower end with a fork 14, transmits its up and down

motion to a sleeve 15, which latter is provided with an annular groove which engages the horizontal arm of bell crank lever 16, thus causing the oscillation of its vertical arm which is forked and engages a pin on slide 17 to impart a to and fro motion thereto. The slide 17 is provided with a passage through which passes the needle-bar 18 which latter is suspended at a hinge 19 and is thus free to oscillate under the action of the means above described.

The variation of the stroke of the oscillation of the needle is obtained absolutely independent from the crank handle 26 which controls the direction of the universal feed of the machine. This variation is affected in the following manner: Roller 9 which can be moved freely in the slot 8 of the lever 6, is connected with a rod 20 which is itself connected with lever 21 which swings on its pivot 22; the other end of lever 21 is provided with a rod, chain or belt 23 which supports at its lower end a ring or hook 24 through which may engage a finger of the left hand of the operator which guides above the table the material which is to be embroidered, while the right hand of the operator controls the crank handle 26 underneath the table which guides the direction of the feed, in order to follow the design which is to be embroidered. A slight pressure of the finger on ring 24 will cause same to descend and consequently to move upward the roller 9 toward the fulcrum 7 of lever 6, while a spring 25 or any other means such as a counterweight acting upon levers 10 or 21 will counterbalance the action of the finger and force the roller 9 toward the lower end of lever 6.

It is clear that when roller 9 is moved by the action of rod 23, lever 21 and rod 20, toward the fulcrum 7 of lever 6, the stroke of the oscillation of the needle will decrease and will be reduced to zero when the roller 9 reaches said fulcrum 7, while to the contrary when roller 9 is moved downward toward the lower end of lever 6, then the stroke of the oscillation will increase.

It is well understood that rod or chain 23 and ring or hook 24 can be replaced by any other suitable means, so that for instance the finger of the operator may act upon a suitably arranged lever for obtaining the same result.

It is understood that on plain sewing ma-

chines with oscillating needles the oscillation can be varied by the action of the foot on a treadle; such a variation by pressure of the foot is shown at Fig. 1 in dotted lines by lever 27 which is connected with the treadle by rod, belt or chain 28, but in this case the machine can be driven by means of one foot only which is very fatiguing for the operator; on the other part the variation of the oscillations obtained by the pressure of the foot cannot be graduated as accurately and cannot produce as artistic effects as when obtained by the hand of the operator as above described, as the operation of the lever 21 can be produced by one single finger of the left hand, said hand can at the same time conduct the material to be embroidered to the full perfection as may be required.

Fig. 2 shows another arrangement for obtaining the same result, in which cam 5 oscillates a lever 30 which oscillates on fulcrum 7; the lower horizontal arm of said lever 30 is provided with a slot in which engages a roller 32; this roller 32 engages at the same time into the slot of lever 31 which oscillates on fulcrum 35 and thereby causes slide 13 to move up and down for the purpose explained with reference to Fig. 1. A lever 33 which swings on pivot 34 is connected at one end with said roller 32 and at the other end with belt, chain or rod 23 for the purpose also described with reference to Fig. 1. It is evident that this arrangement will give the same results as the one described with reference to Fig. 1. Therefore I wish it to be distinctly understood that I do not confine myself to the use of the particular mechanisms and devices herein shown and described for accomplishing the objects in view, as it is evident that their mechanical equivalents may be substituted without departing from the spirit of my invention and that the drawings represent only an example of such an arrangement, as the same results may be obtained by different mechanical means.

What I claim is:

1. In sewing and embroidering machines, the combination of feed mechanism, an oscillating needle and needle oscillating means therefor, means normally held in a predetermined position for regulating the amplitude of said oscillations, and hand-operated means located near the needle whereby said means may be engaged by the operator's hand while in the act of conducting the ma-

terial to be operated on for actuating said regulating means.

2. In sewing and embroidering machines, the combination of universal feed mechanism, an oscillating needle and needle oscillating means therefor, means normally held in predetermined position for regulating the amplitude of said oscillations, hand-operated means located near the needle whereby said means may be engaged by the operator's hand while in the act of conducting the material to be operated on for actuating said regulating means, and feed operating means independently hand-controlled from that of said hand-controlled amplitude regulating means.

3. In a universal feed sewing and embroidering machine, the combination of an oscillating needle and means for effecting the oscillations of said needle, a lever normally held in predetermined position having one arm in operative relation with said oscillating means for regulating the amplitude of said oscillations, and a hand-operated member engaging the other arm of said lever to actuate the same and affect the amplitude of said oscillations and positioned under the control of the operator's hand which conducts the material to be operated on, and a foot-operated connection with said first-named arm for actuating said lever to affect the amplitude of said oscillations in a sense opposite that produced by the hand-operated means.

4. In a universal feed sewing and embroidering machine, the combination of an oscillating needle and needle oscillating means therefor, a lever normally held in predetermined position having one arm in operative relation with said oscillating means for regulating the amplitude of said oscillations, and a hand-operated member depending from the other arm of said lever and located near the needle whereby said means may be engaged by the operator's hand while in the act of conducting the material to be operated on for actuating said lever for the purpose described.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ROBERT CORNELLY.

Witnesses:

DEAN B. MASON,  
JOHN BAKER.