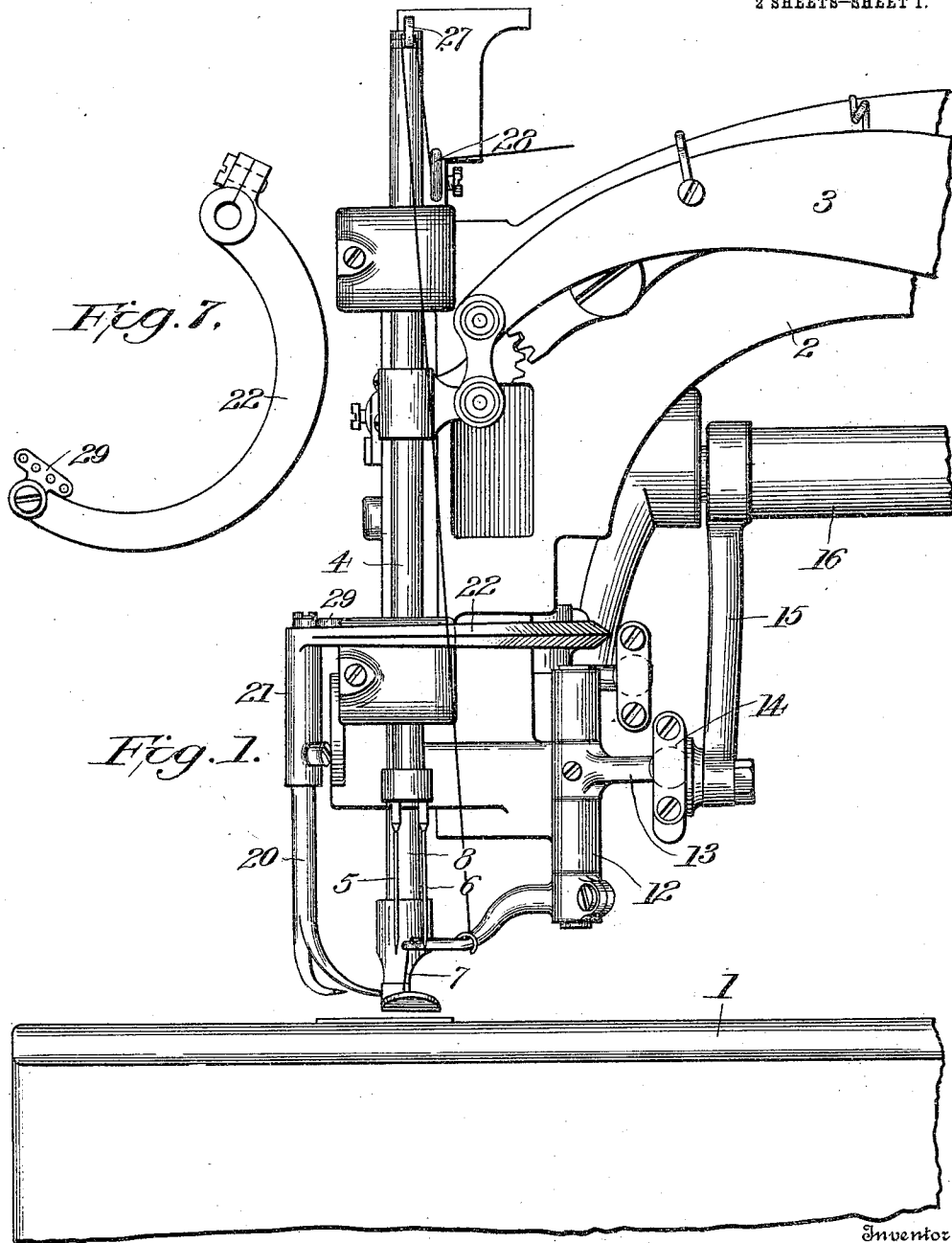


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 ORNAMENTAL STITCH SEWING MACHINE.
 APPLICATION FILED FEB. 13, 1911.

1,046,905.

Patented Dec. 10, 1912.

2 SHEETS—SHEET 1.



Witnesses
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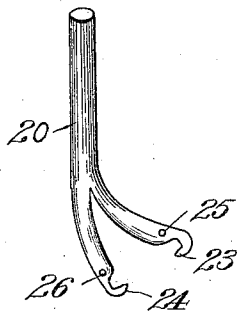
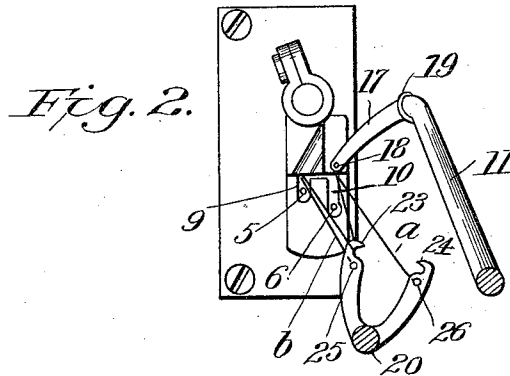


Fig. 5.

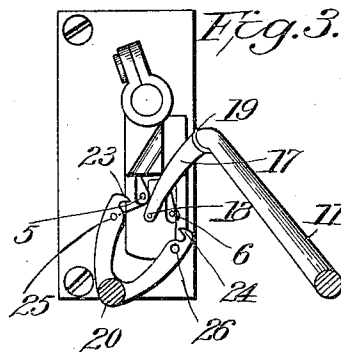
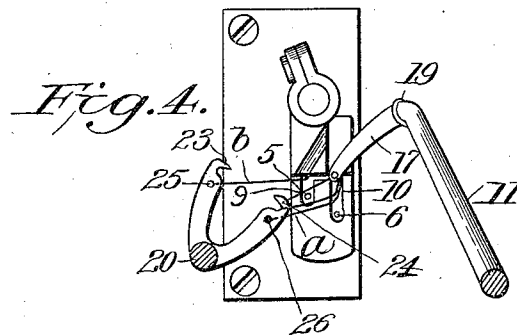
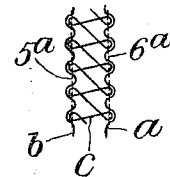


Fig. 6.



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UNITED STATES PATENT OFFICE.

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ORNAMENTAL-STITCH SEWING-MACHINE.

1,046,905.

Specification of Letters Patent.

Patented Dec. 10, 1912.

Application filed February 13, 1911. Serial No. 608,368.

To all whom it may concern:

Be it known that I, VANDIVER J. VAN HORN, a citizen of the United States, residing at Chicago, in the county of Cook, State of Illinois, have invented certain new and useful Improvements in Ornamental-Stitch Sewing-Machines, of which the following is a description, reference being had to the accompanying drawing and to the letters and figures of reference marked thereon.

The invention relates to new and useful improvements in ornamental stitch sewing machines of the type shown in my co-pending application Serial No. 373,069, filed May 11th, 1907.

An object of the invention is to provide a machine including stitch forming mechanism having a plurality of needles, with an ornamental thread carrying guide and devices for coöperating with said guide whereby said ornamental thread is formed into a plurality of oppositely disposed loops and also to provide said machine with a plurality of independent ornamental thread guiding devices for laying independent ornamental threads back and forth in front of the stitch forming mechanism.

In the drawings:—Figure 1 is a front view of the forward end of a sewing machine having my improvements applied thereto. Fig. 2 is a detail view showing in plan the throat plate, the presser foot, and the devices for manipulating the ornamental threads with said devices at one end of their stroke. Fig. 3 is a view similar to Fig. 2 with the ornamental thread manipulating devices moved to an intermediate position. Fig. 4 is a similar view with the ornamental thread manipulating devices at the other end of their stroke. Fig. 5 is a perspective view of one of the ornamental thread manipulating devices. Fig. 6 is a plan view showing the ornamental stitch formed by my device. Fig. 7 is a top plan view of the arm for carrying the thread engaging device.

The cloth plate 1, the overhanging arm 2, the needle lever 3, and the needle bar 4 are of the usual construction and will not need further description. Said needle bar 4 as herein shown carries two needles 5 and 6. Any suitable stitch forming mechanism may be provided for coöperating with said needles beneath the material.

The presser foot 7 is carried by the presser bar 8 and is provided with needle slots 9

and 10, which receive respectively the needles 5 and 6. An ornamental thread guiding arm 11 is mounted at the lower end of a suitable shaft carried by a bracket 12 which bracket is secured to the head of the machine. Said shaft is rocked by an arm 13 connected by a link 14 with an arm 15 mounted on a sleeve 16. Said sleeve may be oscillated by any suitable mechanism and will in turn oscillate the thread guiding arm 11 back and forth. Said thread guiding arm 11 is provided with a laterally projecting curved portion 17 which carries a thread guiding eye 18 at its free end. A thread guiding wire 19 is also carried by said arm 11. The portion 17 of the thread guiding arm 11 is so positioned that the thread guiding eye 18 will reciprocate in a curved path back and forth between the needles 5 and 6. Coöperating with the ornamental thread guiding arm 11 is a thread manipulating device 20. Said thread manipulating device 20 is mounted in a socket 21 carried by the free end of an arm 22. Said arm 22 is pivotally connected with the machine and said arm may be vibrated back and forth by any suitable mechanism.

The mechanism for vibrating the arm 22 is preferably so timed as to reciprocate said arm back and forth once for every two reciprocations of the needle bar 4, and of the thread guiding arm 11. The thread manipulating device 20 is forked at its lower end and provided with two thread hooks 23 and 24. The thread hook 23 is provided with a thread guide 25 for guiding an ornamental thread. The hook 24 is provided with a thread guide 26 for guiding another ornamental thread. The ornamental thread carried by the thread guiding arm 11 is led underneath the guiding wire 19 and thence through a thread guide 27 at the upper end of the needle bar. Said thread is also passed under the stationary thread wire 28 and from thence is led to a suitable tension at the rear of the machine. These parts are of the usual construction and will not need further description. Two ornamental threads are led from the supply through suitable tension devices and other suitable guiding eyes on the head of the machine, to the guiding eyes 29 carried by the arm 22. From the guiding eyes 29, said threads are led to the thread guides 25 and 26 respectively.

In the operation of my device, the thread manipulating device 20 is oscillated back and forth in a path in front of the needles. Starting with the parts in the position shown in Fig. 3 and with the thread manipulating device moving from left to right therein, the hook 23 will engage the ornamental thread passing through the thread guiding eye 18 between the eye and the material and will carry the same in the form of a loop, to the position shown in Fig. 2, so that the needle 6 will enter said loop. During this movement of the hook 23, the thread guiding arm is moved to its extreme rear position so as to properly position the ornamental thread in the form of a loop for the entrance of the needle. In this position of the thread engaging hooks the ornamental thread *a* passing through the thread guide 26, will be positioned to the right of the needle 6, while the ornamental thread *b* passing through the thread guide 25 will be positioned between the needles 5 and 6.

When the thread manipulating device 20 moves from the position in Fig. 2 to the position in Fig. 4, the loop of thread carried by the hook 23 will be dropped and will be properly drawn up by the needle bar so as to form a half twisted loop about the needle thread which has been secured to the fabric or material. A further movement of said thread manipulating device to the left will cause the hook 24 to engage the ornamental thread carried by the thread guiding arm 11, and carry the same in loop form to the position shown in said Fig. 4. The thread guiding arm has again moved to the rear end of its stroke by reason of the fact that it has two reciprocations to one reciprocation of the thread manipulating device. The ornamental thread carried by the thread guiding arm 11 is therefore, positioned so that the needle 5 will enter said loop. At this time, the ornamental thread *b* is located at the left of the needle 5 while the ornamental thread *a* is located between the needles 5 and 6. When the thread manipulating device 20 moves to the right from the position shown in Fig. 4, the loop formed in the ornamental thread carried by the thread guide 11 will be dropped and the needle bar will again take up the thread drawing the loop formed, a half twisted loop about the needle thread locked to the fabric by the complementary stitch forming mechanism. It will readily be seen that the oscillations of said manipulating device 20 lay the ornamental threads *a* and *b* back and forth from first one side of the respective needle paths to the other, thus forming the ornamental seam shown in Fig. 6, wherein one ornamental thread is laid in the form of a figure 8, and secured to the fabric while two independent orna-

mental threads are laid first on one side and then on the other of the needle punctures in the respective rows of stitches.

In Fig. 6, the ornamental thread carried by the thread guiding arm 11 is indicated at *c* while the ornamental thread passing through the thread guiding eye 26 is indicated at *a* and the other ornamental thread is indicated by *b*, while the line of stitching formed by the needle 5, is indicated by 5^a and the line of stitching formed by the needle 6 is indicated by 6^a.

Having thus particularly described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. A sewing machine including in combination a plurality of needles, a thread guiding device for guiding an ornamental thread, thread engaging devices for alternately engaging and forming said ornamental thread into oppositely disposed loops and thread guiding devices for laying independent ornamental threads back and forth first on one side of, then the other of the respective needles.

2. A sewing machine including in combination, a plurality of needles, a thread guiding device, for guiding an ornamental thread, thread engaging hooks, first one and then the other of which engages said ornamental thread, and forms loops therein for the entrance of first one and then the other needle, and thread guiding devices for laying independent ornamental threads back and forth first on one side and then the other of the respective needles.

3. A sewing machine including in combination, a plurality of needles, a thread guiding device for guiding an ornamental thread moving in a path between said needles from a point in front thereof to a point in rear of said needles, a device for engaging said ornamental thread moving in a path entirely in front of said needles, and from a position at one side thereof, to a position at the other side of said needles, said thread-engaging device coöperating with said ornamental thread guiding device to form a loop in said ornamental thread for first one needle and then the other, and thread guides for laying independent ornamental threads back and forth first on one side and then the other of the respective needles.

4. A sewing machine including in combination, a plurality of needles, a thread guiding device for guiding an ornamental thread, a thread manipulating device coöperating with said thread guiding device and having hooks first one and then the other of which engages said ornamental thread, and thread guiding eyes formed in the shank of each of said hooks, adjacent the end thereof.

5. A sewing machine including in combination, a plurality of needles, a thread guid-

ing device for guiding an ornamental thread reciprocating back and forth in a path between said needles, a pivoted arm, a thread manipulating device carried thereby, said
5 thread manipulating device being forked at its lower end and having thread engaging hooks, thread guiding eyes formed in said forked ends adjacent said hooks, and thread eyes carried by said arm for guiding the threads passing to the thread guides carried 10 by said thread manipulating device.

In testimony whereof I affix my signature, in presence of two witnesses.

VANDIVER J. VAN HORN.

Witnesses:

GEORGE N. B. LOWES,
EARL O. TRUMEL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."