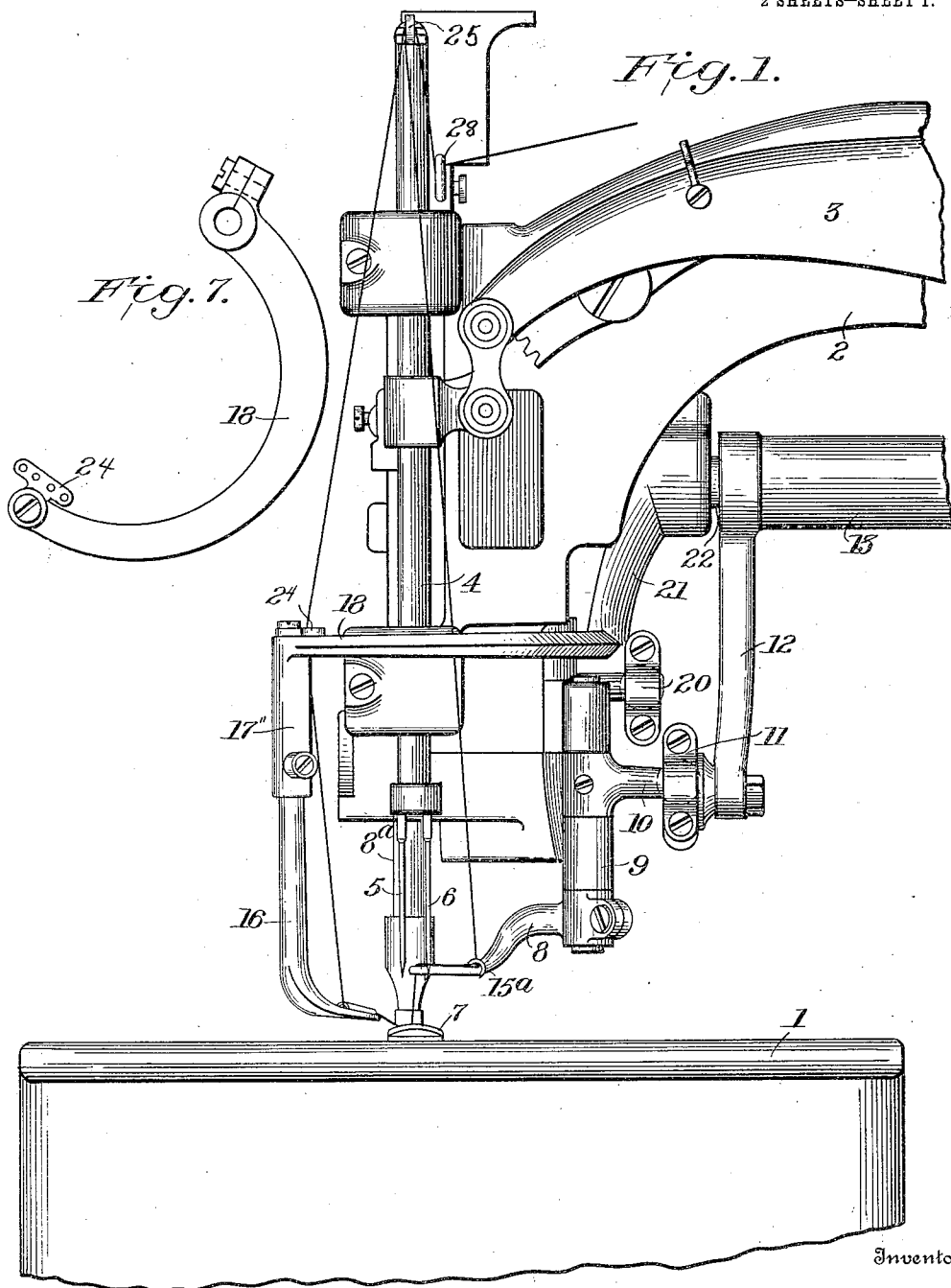


V. J. VAN HORN.
 ORNAMENTAL STITCH SEWING MACHINE.
 APPLICATION FILED FEB. 13, 1911.

1,048,916.

Patented Dec. 31, 1912.

2 SHEETS—SHEET 1.



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384

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Fig. 2.

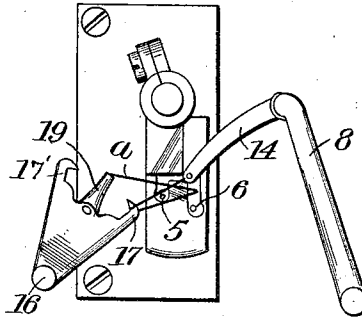


Fig. 5.

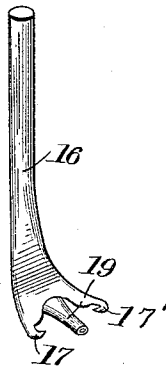


Fig. 3.

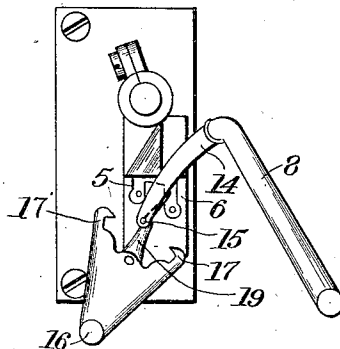


Fig. 6.

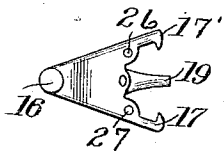
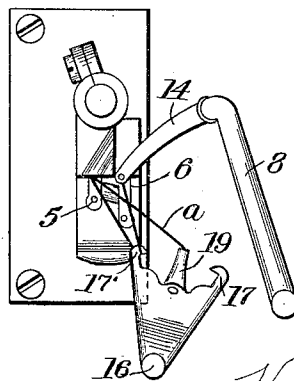


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ORNAMENTAL-STITCH SEWING-MACHINE.

1,048,916.

Specification of Letters Patent.

Patented Dec. 31, 1912.

Application filed February 13, 1911. Serial No. 608,370.

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.

The object of my invention is to provide a sewing machine having stitch forming mechanism for forming a plurality of rows of stitches with devices for guiding ornamental threads so as to form in connection with said lines of stitching a combined "figure 8" and "diagonal loop" ornamental stitch.

A further object of the invention is to provide an ornamental stitch sewing machine with a thread manipulating member which coöperates with a thread guiding device for forming oppositely disposed loops, and which thread manipulating device is provided with a central cord guide for laying an ornamental thread back and forth across the line of feed of the machine.

These and other objects will in part be obvious, and will in part be hereinafter more fully described.

In the drawings which show by way of illustration one embodiment of my invention; Figure 1 is a front view of the forward end of the machine having my improvements applied thereto. Fig. 2 is a plan view of the throat plate, the presser foot, also showing the needles and the ornamental thread manipulating devices in one position relative to said needles. Fig. 3 is a view similar to Fig. 2, showing the ornamental thread manipulating devices in an intermediate position. Fig. 4 is a view similar to Fig. 2 showing the thread manipulating device at the other end of its stroke. Fig. 5 is a perspective view of one of the thread manipulating devices. Fig. 6 is a top plan view of a modified form of thread manipulating device. Fig. 7 is a plan view of the arm for supporting the thread-engaging device.

The bed plate 1, the overhanging arm 2, the needle lever 3, and the needle bar 4, are all of the usual construction. Said needle bar 4 carries at its lower end, two needles 5 and 6. The presser foot 7 is mounted on the presser bar 8^a in the usual manner. Any suitable stitch forming mechanism may be provided for coöperating with said needles 5 and 6.

The ornamental thread guiding device 8 is carried at the lower end of a short shaft mounted in bearings 9 formed in a bracket secured to the overhanging arm. Said shaft carries an outwardly extending arm 10, which is connected by means of a link 11 to a depending arm 12 on a sleeve 13. The sleeve 13 may be oscillated by any suitable mechanism and will in turn oscillate the thread guiding arm 8 back and forth. The thread guiding arm 8 is projected laterally as at 14 and is provided with a thread eye at its free end. Said thread arm 14 is so positioned that the same will vibrate back and forth in a path between the needles 5 and 6 from a position in front of said needles, to a position in rear thereof. The thread guiding arm 8 is also provided with a guiding wire 15^a. An ornamental thread may be passed through the guiding eye 15 underneath the guide wire 15^a, and thence to the thread guide at the upper end of the needle bar. This thread may then be laid under a stationary wire on the head of the machine and from thence to suitable thread guides and a tension to the source of supply.

Coöperating with the thread guiding arm 8 is a thread manipulating device 16, which is forked at its lower end and provided with thread engaging hooks 17 and 17'. Said manipulating device 16 is mounted in a shank 17" carried by the curved arm 18 shown in plan view in Fig. 7. Said arm 18 is pivoted at the rear of the machine and is oscillated by means of a link 20 which is connected to a depending arm 21 mounted on the shaft 22 which supports the sleeve 13. Said shaft 22 may be oscillated by any suitable mechanism. The means for oscillating the shaft 22 is preferably timed so as to reciprocate the arm 18 once for every two reciprocations of the needle bar and the thread guiding arm 8.

Starting with the parts in the position shown in Fig. 3, it will be seen that the

free end of the thread guiding arm 8 is in front of the needles and is moved to a position so that when the thread manipulating device is oscillated from right to left the hook 17, will engage the ornamental thread passing through the eye 15 between said eye and the material, and carry the same to the position shown in Fig. 2. In this position of the hook 17, the thread carried thereby is formed into a loop, which loop is so positioned that the needle 5 will enter said loop when the thread arm 8 moves to a position in rear of the needles. When the thread manipulating device 16 is moved to the position shown in Fig. 4, the thread guiding arm 8 has again moved forward so that the hook 17' will engage the thread carried thereby and form a loop which is entered by the needle 6. It will thus be seen that the hooks 17 and 17' cooperating with the thread guiding arm 8, will form the ornamental thread carried thereby into oppositely disposed loops which are entered first by one needle and then the other respectively, thus forming what is known as a figure 8 ornamental stitch.

I have also provided an ornamental thread guiding device 19 which as herein shown is carried by the thread manipulating device 16. Said ornamental thread guiding device 19 is located intermediate the hooks 17 and 17', and projects a slight distance in advance thereof. An ornamental thread is passed through the guiding device 19 and through a thread guiding eye 24 carried by the arm 18 and may thence be led to the thread guide 25 at the upper end of the needle bar. A thread guiding wire 28 is provided underneath which the ornamental thread may be passed and from which said thread may be led through a suitable guide to the source of supply. The thread guiding device 19 will carry its thread from a position at one side of both of the needles 5 and 6 to a position at the other side thereof. As shown in Fig. 2, the ornamental thread passing through the guide 19 is indicated by *a* and as shown in this view said thread is led back of the path of both of the needles. In Fig. 4 the thread guide 19 has moved to the other side of the needles and the ornamental thread *a* is again located in the rear of both the needles 5 and 6. The laying of the thread back and forth may form what is termed a diagonal ornamental thread stitch. By the combined action of the ornamental thread manipulating devices, I am able to produce a combined diagonal and figure 8 ornamental stitch one of which is interlocked with the other.

In Fig. 6, I have shown a slightly modified form of thread manipulating device. In this form, the shanks of the hooks 17 and 17' are each provided with a thread guiding eye 26 and 27 which may guide an orna-

mental thread. When this construction shown in Fig. 6 is considered in connection with the position of the parts shown in Fig. 2, it will readily be seen that a cord or thread passing through the guiding eye 26 will be moved from first one side to the other side of the path of the needle 6, but it will never be carried across the path of the needle 5. Viewing the position of the parts shown in Fig. 4, it will also be seen that a thread or cord carried by the guiding eye 27 would be first on one side and then on the other side of the path of the needle 5, but it would never be carried across the path of the needle 6. By the form of implement shown in Fig. 6, I would therefore produce a combined diagonal and figure 8 ornamental stitch and also lay independent ornamental threads back and forth in front of the respective needles.

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

1. A sewing machine comprising in combination stitch forming mechanism including a plurality of needles, a thread guiding arm for guiding an ornamental thread, thread engaging devices cooperating therewith to alternately engage said ornamental thread and form therein oppositely disposed loops and an ornamental thread guiding device for laying a thread back and forth in rear of the path of said needles.

2. A sewing machine comprising in combination stitch forming mechanism including a plurality of needles, a thread arm for guiding an ornamental thread moving back and forth from a position in front of to a position in rear of said needles, thread engaging hooks cooperating with said thread arm for forming said ornamental thread into oppositely disposed loops and an ornamental thread guiding device for laying an ornamental thread back and forth in rear of the path of the needles.

3. A sewing machine comprising in combination, stitch forming mechanism including a plurality of needles, a thread arm for guiding an ornamental thread moving in a path between said needles from a position in front thereof to a position in rear of said needles, thread engaging hooks cooperating with said thread arm for forming loops in the ornamental thread and presenting the same first to one needle and then the other, and an ornamental thread guiding device located intermediate said hooks and moving therewith.

4. A sewing machine comprising in combination stitch forming mechanism, including a plurality of needles, a thread arm for guiding an ornamental thread moving in a path between said needles from a position in front thereof to a position in rear of said needles, thread engaging hooks cooperating

with said thread arm for forming loops in the ornamental thread and presenting the same first to one needle and then the other and an ornamental thread guiding device located intermediate said hooks and moving therewith, said ornamental thread guiding device moving in a path nearer the needles than said hooks whereby the ornamental thread is positioned in rear of the path of said needles.

5. A sewing machine comprising in combination, a plurality of needles, and means for guiding and laying ornamental threads including a thread manipulating device having thread engaging hooks at its lower end, a projecting member carried by said thread engaging device and located intermediate said hooks, said projecting member having means for guiding an ornamental thread.

6. A sewing machine comprising in combination, a plurality of needles, means for guiding and laying ornamental threads including a thread manipulating device having thread engaging hooks, a member carried by said thread manipulating device and located intermediate said hooks, said member having means for guiding an ornamental thread and additional ornamental thread guiding device formed in said thread manipulating device, adjacent said hooks, and on each side of said projecting member.

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

VANDIVER J. VAN HORN.

Witnesses:

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

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