A. GRIEB.

OVERSEAMING SEWING MACHINE.

APPLICATION FILED MAY 19, 1910.

1,011,187.

Patented Dec. 12, 1911.

2 SHEETS—SHEET 1.

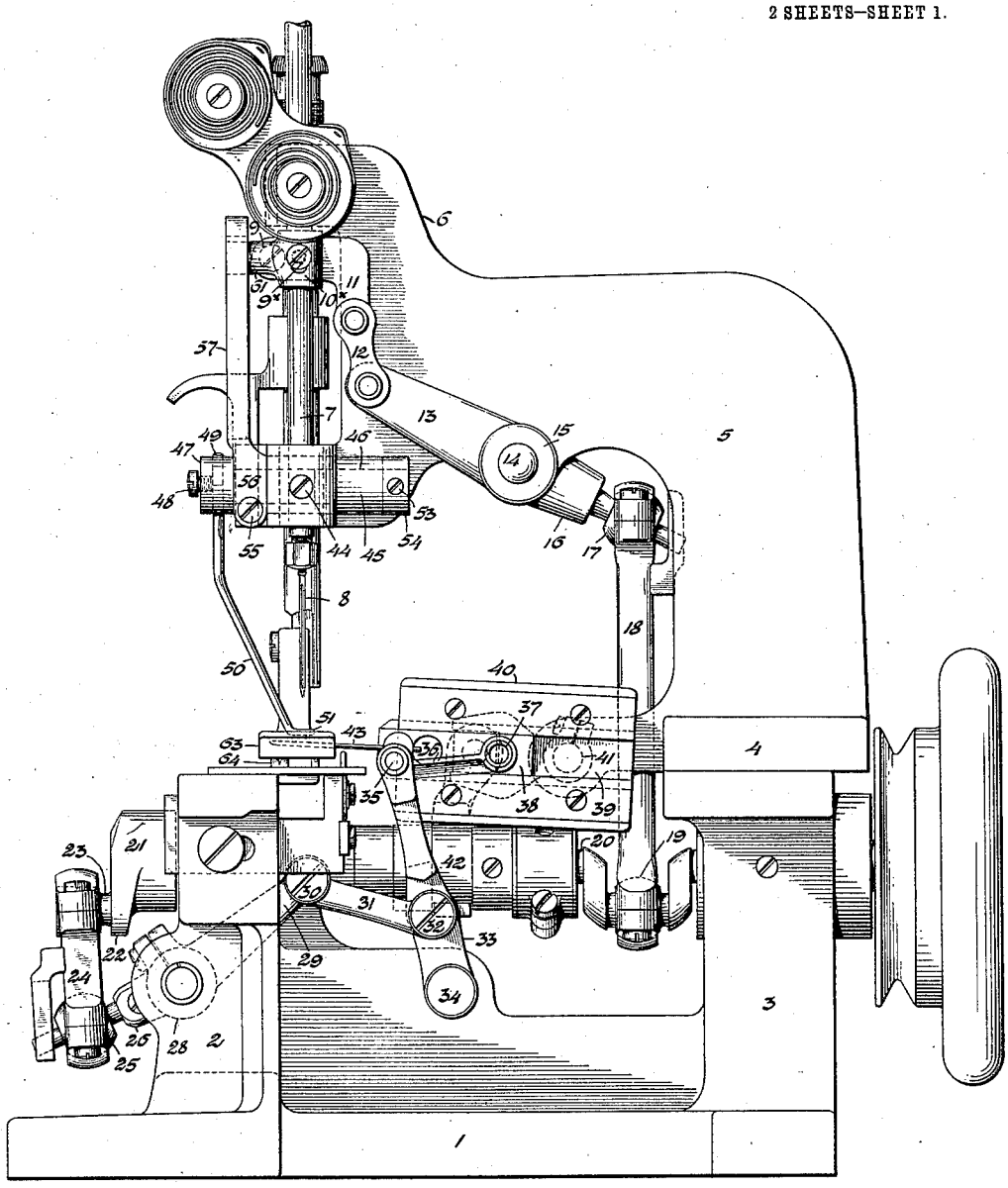

Fig. 1.

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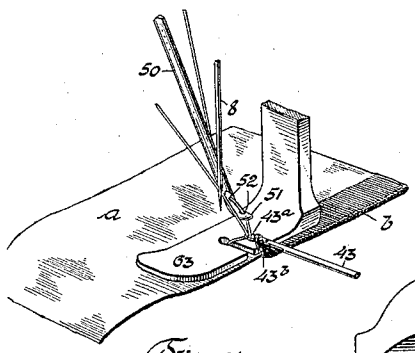

Fig. 3.

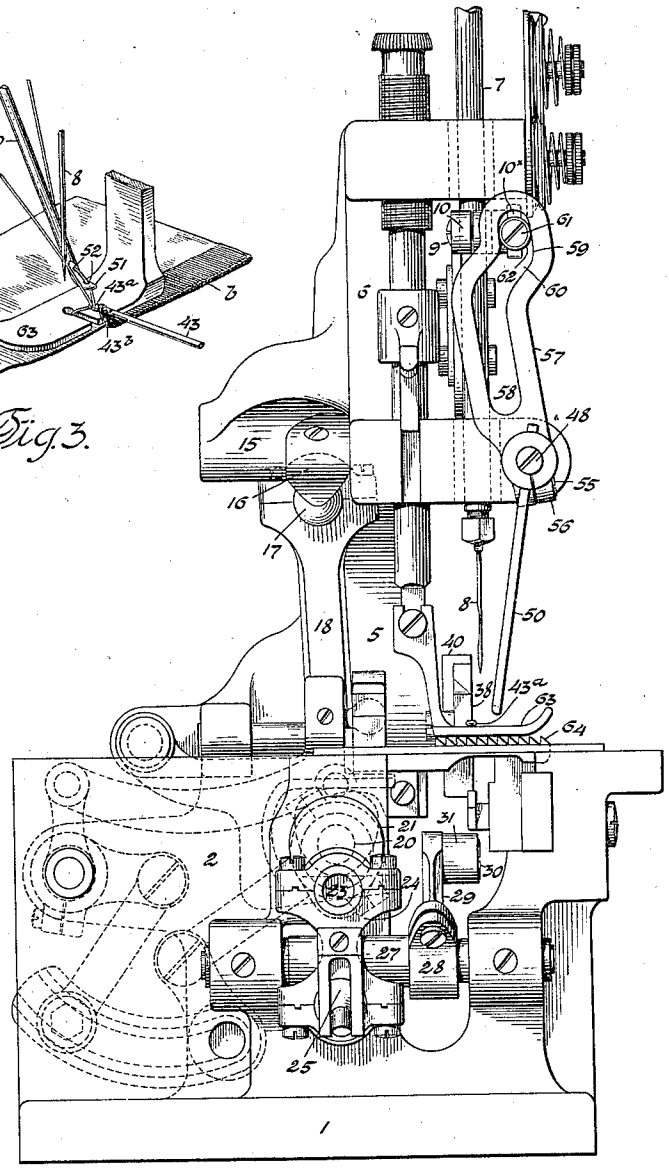

Fig. 2.

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UNITED STATES PATENT OFFICE.

ALFRED GRIEB, OF ELIZABETH, NEW JERSEY, ASSIGNOR TO THE SINGER MANUFACTURING COMPANY, A CORPORATION OF NEW JERSEY.

OVERSEAMING SEWING-MACHINE.

1,011,187. Specification of Letters Patent. **Patented Dec. 12, 1911.**

Application filed May 19, 1910. Serial No. 562,194.

To all whom it may concern:

Be it known that I, ALFRED GRIEB, a citizen of the United States, residing at Elizabeth, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Overseaming Sewing-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an improvement in mechanism for overseaming the edges of fabrics, and particularly to the mechanism forming the subject of my Patent No. 982,717, of January 24, 1911; and it has for its object to provide means for interlooping a purl-thread with the component threads of the overseam.

As applied to the machine forming the subject of my said application, the present improvement comprises a rock-shaft journaled in the head of the bracket-arm transversely of the needle-bar and carrying a vibratory thread-arm whose operative eyed end is adapted to move across the needle path in the line of seam, such rock-shaft having fixed thereon an arm provided with a cam-slot entered by a stud carried by the needle-bar, whereby operative movements are imparted to the thread-arm.

In the accompanying drawings, Figure 1 is a side elevation and Fig. 2 a front end elevation of a machine embodying the present improvements. Fig. 3 is a perspective view showing a piece of fabric to be overseamed, with the stitch-forming members in one stage of operation.

The machine frame is shown provided with a bed-plate 1 having upright forward and rearward bearing members 2 and 3 upon the latter of which is secured the base 4 of the overhanging bracket-arm 5 formed with the recessed head 6 in which is journaled the reciprocating needle-bar 7 carrying the eye-pointed needle 8. The needle-bar has fixed thereon by means of the set-screw 9 a collar 10 with lateral lug 11 connected by means of the link 12 with a forwardly extending arm 13 fixed upon the rock-shaft 14 journaled in a bearing 15 in the bracket-arm and carrying a rearwardly extending arm 16 provided with a ball-stud 17 embraced by the upper end of a pitman-rod 18 whose lower end embraces the ball-crank 19 of the longitudinal main-shaft 20 journaled in the standards 2 and 3 of the frame.

The main-shaft has fixed upon its forward end the collar 21 having a crank-arm 22 carrying the crank-pin 23 which is embraced by the upper end of a pitman 24 whose lower end embraces the ball-stud 25 upon the forwardly extending arm 26 of the rock-shaft 27 which has clamped thereon the split hub 28 of the rearwardly extending crank-arm 29. The crank-arm 29 is connected by means of the stud-screw 30 with one end of a link 31 whose other end embraces the stud-screw 32 carried by the vibrating looper actuating lever 33 fulcrumed upon the stud-pin 34 mounted in the frame below the main-shaft 20. The upper end of the lever 33 is connected by means of a pivotal pin 35 with one end of a link 36 whose opposite end embraces a lateral stud 37 upon the looper bar 38 mounted in a slideway 39 provided therefor in the guide-bar 40 rocking upon the fulcrum-pin 41, which is actuated as described in my said application, from a cam or eccentric 42 upon the main-shaft. The looper-bar has secured in its forward end the shank of the latch-needle or looper 43 with hooked outer end 43^a adapted to be closed by the pivoted latch 43^b.

Secured in a transverse aperture in the lower bearing member of the bracket-arm head 6 by means of the set-screw 44 is a bushing 45 affording a bearing for a rock-shaft 46 having at its forward end a cylindrical head 47 provided with a transverse socket in which is secured by means of the set-screw 48 the shank 49 of the depending purl-thread carrying arm 50 having a lateral finger 51 provided with thread guide-eyes 52 adapted to move to-and-fro across the path of reciprocation of the needle 8. The rock-shaft 46 has fixed upon its inner end by means of the set-screw 53 the thrust-collar 54 by which it is held from endwise movement, and has secured thereon adjacent the head 47 by means of the clamp-screw 55 the split hub 56 of an upwardly extending lever-arm 57 formed with a cam-slot having a lower radial portion 58 and offset radial upper portion 59 and an intermediate in-

clined portion 60. The collar 10 upon the needle-bar has adjustably secured thereon by means of the screw 9^x a block 10^x with a forwardly projecting stud 61 which carries an anti-friction roller 62 entering the cam-slot 58 59 60 of the lever 57. The shape of the cam-slot is such that just before the needle reaches its highest position and just after it leaves such extreme position, the roller-stud 61 62 engages the inclined portion 60 of the cam-slot in the lever 57 so as to rock the same respectively while the needle is in the latter portion of its ascent and the initial portion of its descent and while still above the work, so as to correspondingly vibrate the purl-thread carrier 50 to lay the purl-thread within the hook of the looper with the needle-thread in the receding or loop-seizing movement of the looper above the work.

The mode of operation of the machine is substantially the same as that described in my Patent No. 982,717, excepting that the looper manipulates correspondingly the upper needle-thread loops and purl-thread loops which are similarly seized and cast off over the latch as the looper recedes after each advance above the work.

The coöperation of the several thread-handling members above the work is clearly shown in Fig. 3, in which a piece of fabric *a* is shown beneath the presser-foot 63 with a portion of its edge covered by the purled overseam *b*. In this figure, the needle 8 is represented as having descended through a portion of its stroke and the thread-arm 50 as having moved across the needle-path to enter its thread in the open eye or hook of the looper 43, which latter, with previously seized upper and lower needle-thread loops and purl-thread loop embracing its shank and closed latch-member 43^b, is receding to draw the newly seized upper needle-thread and purl thread loops through those upon its shank.

The machine is provided with the usual feed-dog 64 opposed to the presser-foot 63 and provided with suitable actuating means for producing an advance movement for each stitch-forming operation; but it is evident that by employment of other well known feeding mechanism for producing a single advance of the work for a series of stitch-forming operations, a common form of "shell stitch" seam will be produced.

Having thus set forth the nature of the invention, what I claim herein is:—

1. In a sewing machine, the combination with the main-shaft, and stitch-forming mechanism comprising a needle-bar carrying a needle and a reciprocating open-eyed looper coöperating with the needle above and below the work in the production of stitches, looper-actuating means connected with the main-shaft, and needle-bar reciprocating mechanism independent of said looper-actuating means, of a rock-shaft mounted in fixed bearings transversely to said needle-bar, an eyed purl-thread carrying arm fixed to said rock-shaft and having its operative portion movable across the needle path, a lever fixed to said rock-shaft and provided with a cam-slot, and a stud carried by said needle-bar and entering the cam-slot of said lever whereby the purl-thread carrying arm is vibrated to lay its thread within the looper-eye.

2. In a sewing machine, the combination with the main-shaft, and stitch-forming mechanism comprising a needle-bar carrying a needle and a reciprocating open-eyed looper coöperating with the needle above and below the work in the production of stitches, looper-actuating means connected with the main-shaft, and needle-bar reciprocating mechanism independent of said looper-actuating means, of a rock-shaft mounted in fixed bearings transversely to the needle-bar, an eyed purl-thread carrying arm fixed to said rock-shaft and having its operative portion movable across the needle-path, a lever provided with a cam-slot extending longitudinally thereof, means for securing said lever for circular adjustment upon said rock-shaft, and a stud carried by said needle-bar and entering the cam-slot of said lever whereby the purl-thread carrying arm is vibrated to lay its thread within the looper-eye.

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

ALFRED GRIEB.

Witnesses:
H. J. MILLER,
H. A. KORNEMANN.